

---

## PRESIDENT

Barbara Couture, President

---

## BOARD OF REGENTS

**Susana Martinez**, Governor of New Mexico, Ex Officio Regent from Santa Fe.  
**Michael J. Davis**, State Superintendent of Public Instruction, Ex Officio Regent from Santa Fe.  
**Laura M. Conniff**, Appointed Regent from Las Cruces for term expiring December 31, 2012.  
**Mike Cheney**, Appointed Regent from Las Cruces for term expiring December 31, 2016.  
**Christopher Dulany**, Appointed Regent from Las Cruces for term expiring December 31, 2012 (Student Regent).  
**Javier Gonzales**, Appointed Regent from Santa Fe for term expiring December 31, 2014.  
**Isaac "Ike" Pino**, Appointed Regent from Santa Fe for term expiring December 31, 2014.

---

## FOR MORE INFORMATION

### University Admissions:

Valerie Pickett, Director  
University Admissions, MSC 3A  
New Mexico State University  
P O Box 30001  
Las Cruces, NM 88003-8001 (575) 646-3121

### Transcript evaluation, student records and determination of residency:

Michael R. Zimmerman, Registrar  
Office of the Registrar, MSC 3AR  
New Mexico State University  
P O Box 30001  
Las Cruces NM 88003-8001 (575) 646-3411

### Housing for single and married students:

Julie Weber, Director  
Housing, MSC 3BB  
New Mexico State University  
P O Box 30001  
Las Cruces NM 88003-8001 (575) 646-3202

### Scholarships and Financial Aid:

Financial Aid, MSC 5100  
New Mexico State University  
P O Box 30001  
Las Cruces NM 88003-8001 (575) 646-4105

### Part-time employment while a student:

Placement and Career Services, MSC 3509  
New Mexico State University  
P O Box 30001  
Las Cruces NM 88003-8001 (575) 646-1631

### Student Accounts information:

Leland Kiehne, Director  
University Accounts Receivable, MSC 4570  
New Mexico State University  
PO Box 30001  
Las Cruces NM 88003-8001 (575)646-4911

### Cooperative Education Program:

Kevin D. Andrew, Coordinator  
Cooperative Education Programs, MSC 3509  
New Mexico State University  
P O Box 30001  
Las Cruces NM 88003-8001 (575) 646-4115

### Vocational guidance or personal counseling:

Karen Schaefer, Director  
Counseling Center, MSC 3575

New Mexico State University  
P O Box 30001  
Las Cruces NM 88003-8001 (575) 646-2731

### Military and Veterans Programs:

Jacobo Varela, Assistant Registrar  
**Active Military-** Erika Zaragoza  
Military Programs Coordinator  
**Veterans-**Laura Grant,  
Veterans Programs Coordinator,  
MSC 4740  
New Mexico State University  
P O Box 30001  
Las Cruces NM 88003-8001 (575) 646-4524

### Ethnic Programs information:

Justin McHorse, Director  
American Indian Program, MSC 4188  
New Mexico State University  
P O Box 30001  
Las Cruces NM 88003-8001 (575) 646-4207

Festus Addo-Yobo, Director  
Black Programs, MSC 4188  
New Mexico State University  
P O Box 30001  
Las Cruces NM 88003-8001 (575) 646-4208

Laura G. Spencer, Director  
Chicano Programs, MSC 4188  
New Mexico State University  
P O Box 30001  
Las Cruces NM 88003-8001 (575) 646-4206

### Honors Program information:

Bill Eamon, Dean  
Honors College, MSC 3HON  
New Mexico State University  
P O Box 30001  
Las Cruces NM 88003-8001 (575) 646-2005

### Crimson Scholars

**Program information:**  
Yvonne Flores, Coordinator  
Crimson Scholars Program,  
MSC 3HON  
New Mexico State University  
P O Box 30001  
Las Cruces NM 88003-8001 (575) 646-2542

### Distance Education and Weekend Courses:

Jeanette Jones, Distance Education and  
Continuing Education Program Facilitator  
College of Extended Learning, MSC 3WEC  
New Mexico State University  
P O Box 30001  
Las Cruces NM 88003-8001 (575) 646-4692

### Corbett Center/Campus Information:

Kate Fahrbach, Director  
Corbett Center Information Desk  
MSC CC  
New Mexico State University  
P O Box 30004  
Las Cruces NM 88003-0004 (575) 646-4411

### NMSU Community Colleges:

Cheri Jimeno, President  
Alamogordo Campus (575) 437-6860

John B. Gratton, President  
Carlsbad Campus (575) 885-8831

Margie C. Huerta, President  
Doña Ana Campus (575) 527-7510

Felicia Casados, President  
Grants Campus (505) 287-7981

### Flexible and Individualized Degree Programs:

Kelley Hestir, College of Extended Learning  
Advisor and Academic Program Coordinator  
College of Extended Learning, MCS 3WEC  
P O Box 30001  
Las Cruces NM 88003-8001 (575) 646-3142

---

Post office address for New Mexico State University is Las Cruces, New Mexico 88003-8001.

Mail service for box patrons is provided by a branch post office located on campus. Telephone service is through the Las Cruces telephone exchange, (575) 646-0111.

# NEW MEXICO STATE UNIVERSITY

## Undergraduate Catalog 2012-2013

Academic programs at  
New Mexico State University are  
available to all students without  
regard to age, ancestry, color,  
disability, gender, national origin,  
race, religion, sexual orientation,  
or veteran status.

Any item in this catalog  
is subject to modification at any time  
by proper administrative procedure.

Catalog effective summer 2012 through spring semester 2018.

The NMSU Undergraduate Catalog is available online at [www.nmsu.edu](http://www.nmsu.edu).

**Assistant Registrar (project management):** *Jacobo Varela*  
**Editing and Production Assistant:** *Michelle Lebsack*  
**Student Assistant:** *Kori Keyes*

# Table of Contents

<b>General Information</b>	1	The University
	1	Admissions
	1	Accreditation
	3	International Students
	4	Tuition, Fees, & Other Expenses
	6	Financial Aid
	8	Resources for Students
	12	Associate Degree Programs
	12	Graduate Programs
	15	Recognition of Academic Achievement
	15	Special Programs
	15	Required Courses
	18	Military/Veterans & Family Members
	20	Regulations
<b>College of Agricultural, Consumer and Environmental Sciences</b>	28	Agricultural Economics and Agricultural Business; Agricultural and Extension Education; Animal and Range Sciences; Entomology, Plant Pathology, and Weed Science; Family and Consumer Sciences; Fish, Wildlife, Conservation Ecology; Plant and Environmental Science; School of Hotel, Restaurant, and Tourism Management
<b>College of Arts and Sciences</b>	50	Aerospace Studies; Anthropology; Art; Astronomy; Biology; Chemistry and Biochemistry; Communication Studies; Computer Science; Creative Media; Criminal Justice; Economics and International Business; English; Geography; Geological Sciences; Government; History; Journalism and Mass Communications; Languages and Linguistics; Mathematical Sciences; Military Science; Music; Philosophy; Physics; Psychology; Sociology; Theatre Arts; Women Studies
<b>College of Business</b>	92	Accounting and Information Systems; Economics and International Business; Finance; Management; Marketing
<b>College of Education</b>	100	Counseling and Educational Psychology; Curriculum and Instruction; Educational Management and Development; Human Performance, Dance and Recreation; Special Education/Communication Disorders
<b>College of Engineering</b>	110	Chemical Engineering; Civil Engineering; Electrical and Computer Engineering; Engineering Physics; Engineering Technology and Surveying Engineering; Industrial Engineering; Mechanical Engineering and Aerospace Engineering
<b>College of Extended Learning</b>	128	Distance Education; Weekend Courses
<b>College of Health and Social Services</b>	130	Health Science; Nursing; Social Work
<b>Honors College</b>	135	
<b>NMSU Community Colleges</b>	138	Alamogordo, Carlsbad, Doña Ana, Grants Campuses
<b>Course Descriptions</b>	139	
<b>Special Courses</b>	285	
<b>Personnel</b>	286	
<b>Index</b>	302	
<b>Academic Calendar</b>	•	Inside back cover



---

---

# GENERAL INFORMATION

---

## THE UNIVERSITY

---

New Mexico State University (NMSU) is the state's land-grant university, serving the educational needs of New Mexico's diverse population through comprehensive programs of education, research, extension education, and public service. NMSU was founded in 1888 as Las Cruces College and later renamed New Mexico College of Agriculture and Mechanic Arts. In 1960, the constitution of New Mexico formally recognized the institution as NMSU. Throughout its history, the university has preserved many of the traditions of its land-grant origin while also increasing emphasis on the fine arts, humanities, social and natural sciences. Today, NMSU is a major institution of higher education.

## ADMISSIONS

---

A student may be accepted for undergraduate admission to NMSU as  
(1) a degree-seeking student or  
(2) a nondegree student under the policies and conditions as set forth in this section.

### Regular Admission Domestic Students (First time any college)

Requirements for admission as a regular student include the following:

- Formal application for admission, accompanied by a \$20 nonrefundable application fee.
- An official transcript of the student's high school credits is to be sent directly from the high school to the Office of University Admissions.
- Official results of the American College Testing Program (ACT) or Scholastic Aptitude Test (SAT) are to be sent directly from the Testing Centers to the Office of University Admissions. All freshman applicants are required to take either the ACT or SAT before final admission is granted.
- Qualifications for undergraduate admission to NMSU are as follows:
- Graduation from any state high school or academy in the United States accredited by a regional accrediting association or approved by a state department of education or state universities.
- Meet the minimum high school unit requirements listed below and have a high school grade-point average of at least 2.0 and ACT standard composite score of at least 20; or high school grade-point average of at least 2.5; or ACT standard composite score of at least 21.

The following high school unit requirements became effective with the class of 1991:

English.....	4 units*
Science.....	2 units beyond general science
Mathematics.....	3 units**
Foreign languages or fine arts.....	1 unit

\* Must include at least 2 units of composition, one of which must be a junior or senior-level course.

\*\* From algebra I, algebra II, geometry, trigonometry, or advanced math.

- First-time freshmen who do not meet the regular admission requirements will be refused admission and can appeal to the Admission Appeals Committee. For more information, contact the Office of University Admissions.

### Provisional Admission

A new student, other than a transfer student, who does not meet requirements for regular admission may be admitted under the provisional program. To be admitted to provisional status, students must:

- 1) have a minimum high school grade-point average of 2.25 and ACT composite score of 19 and meet all the minimum high school unit requirements listed above or
- 2) have met all but one of the minimum high school units listed above and
  - (a) have a high school grade point average of at least a 2.50 or
  - (b) have a high school grade point average of a 2.00 and an ACT standard composite score of 20 or
  - (c) have an ACT standard composite score of at least 21. Such a student must take at least 6, but not more than 12 credits, in a regular semester, and at least 3, but not more than 6 credits, in a single summer session.

A provisional student earning a 2.0 grade-point average or higher in at least the minimum number of credits as stated above will be granted regular admission. Should the provisional student earn less than a 1.0 grade-point average in the first semester, further attendance will be denied.

A provisional student earning less than a 2.0 grade-point average, but more than a 1.0 grade-point average in at least the minimum number of credits as stated above, in the first semester may continue for one additional semester. However, a provisional student who fails to attain a 2.0 grade-point average during the second semester will be denied further attendance. Students who are denied further attendance may reapply to NMSU after they have completed a minimum of 24 credits with a 2.0 GPA at another regionally accepted institution.

### Home School Students

Students enrolled in a home school program may be accepted to NMSU if they meet the requirements for regular or provisional admission as previously stated. In addition, the home school educator must submit a transcript or document that lists the courses completed and grades earned by the student and also indicates the date the student completed or graduated from the home school program. Home school students who are New Mexico residents and wish to

### ACCREDITATION

New Mexico State University has been accredited since 1926 by The Higher Learning Commission and is a member of the North Central Association. (NCA may be contacted at 30 North LaSalle St., Suite 2400, Chicago, IL 60602-2504 and (800) 621-7440.) The university was accredited in 1954 by the American Association of University Women. The university's teacher preparation program, which involves several colleges and which is directed by the College of Education, was accredited in 1962 by the National Council for the Accreditation of Teacher Education.

The Division of Student Services has two accredited departments as well. The Counseling Center is fully accredited by the International Association of Counseling Services (IACS), and the Student Health Center is accredited by the Accreditation Association for Ambulatory Health Care (AAAHC).

Various academic departments and programs are accredited separately by independent accreditation agencies. These may be found at the beginning of each college chapter.

participate in the Lottery Success Scholarship program are required to submit official New Mexico GED test results.

#### **Basic Academic Skills and Admission**

In order to succeed at their college studies, entering students are required to have basic skills in mathematics and writing befitting the university environment. Students are evaluated using ACT test scores or diagnostic testing at the time of registration to determine basic academic competency. Based upon this evaluation, the university will require entering students to correct deficiencies by completing coursework in English and mathematics before enrolling in courses numbered 300 and above.

#### **Application Deadlines**

Applications for admission as a regular student should be sent to the Admissions Office at least 30 days before the beginning of the regular semester or summer session for which the student intends to enroll. NMSU programs that have different deadlines for application are:

- Nursing
- February 1 (fall semester)
- September 1 (spring semester)

#### **Admission by GED**

Any student who has successfully completed the GED may apply for admission. Students are encouraged to submit an official high school transcript of the work they completed in addition to their GED scores. The admission will depend upon satisfactory scores on the General Educational Development (GED) test and the American College Testing Program (ACT) test, and a review of minimum high school unit requirements.

#### **Dual Credit Program for High School Students**

The Dual Credit Program is designed to give high school students an opportunity to enroll at NMSU prior to high school graduation. Students must be either a junior or senior in high school and enrolled in a New Mexico public school district. Under a Dual Credit Master Agreement between NMSU and the school district, students enrolled in approved dual credit courses would be eligible to have the full cost of tuition and general fees waived. Students who wish to enroll in non-approved dual credit courses would be responsible for all costs related to enrollment. High school students not enrolled in a NM public school may be eligible for enrollment as an Early Admission student. Early Admission students are responsible for all costs related to enrollment. Students must complete the Admission Application; provide official high school transcript and official ACT or SAT scores to the Admissions Office; and complete the Dual Credit Request form. Requirements to be admitted to the program are high school grade point average (GPA) of 3.0 and an ACT of 23 and substantial progress toward completion of the following high school courses: 4 units of English, 3 units of Math (Algebra I, Algebra II, Geometry), 2 units of Science (beyond General Science), 1 unit of a language other than English or a unit of fine art.

#### **Western Undergraduate Exchange Program (WUE)**

The Western Undergraduate Exchange Program (WUE) offers students a reduced tuition rate. Students from participating WUE states, who are eligible for regular admission to NMSU, will be charged regular resident tuition, plus any fees that all students are required to pay. WUE states include Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington and Wyoming. Students must be classified as degree seeking students in academic good standing.

#### **Readmission (Degree Seeking)**

Former students of NMSU, or of one of its Community Colleges, who have been out of school for more than two consecutive terms are required to make formal application for readmission. Applications should be submitted to the Office of University Admissions at least 30 days before the opening of the semester or summer session for which the student plans to enroll.

A student who has attended other institutions during an absence must have official transcripts forwarded directly to the Office of University Admissions by the registrar of each institution and must be eligible to return to the college or university last attended. Transcripts must be received prior to the date of registration. Admission status at the time of readmission will normally be determined by previous NMSU academic standing. However, academic performance at other institutions attended during the applicant's absence from NMSU may be taken into consideration in determining the student's admission status.

#### **NMSU Graduation and Retention Rates**

These rates may be found on the NMSU Institutional Research web site at <http://irpoa.nmsu.edu>.

#### **TRANSFER STUDENTS**

Transfer students from other colleges or universities may be accepted for undergraduate studies if they have at least a 2.0 cumulative grade-point average and are eligible to return to the college or university last attended. Transfer students who have less than 30 credits have to meet first-time freshman admission requirements.

#### **Transcripts**

The transfer student must have official transcripts forwarded directly to the Office of University Admissions by the Registrar of each college or educational institution previously attended. The ACT or SAT may be required of students who have not earned credit for the first semester of college English. A student who conceals the fact that he or she has attended another college or university, and who has not had the registrar submit a transcript for each institution whether or not credit was earned, will be subject to immediate suspension. Transcripts must be received before the date of registration.

#### **Transfer of Credits at NMSU**

NMSU evaluates courses from postsecondary institutions that are regionally accredited or are candidates for regional accreditation. Transfer students will receive full credit for coursework completed with a grade of C or better, provided the classes are similar or equivalent to courses offered at NMSU. A transfer student may, on the basis of an evaluation of his or her transcripts, receive credit for courses taken at other institutions in which a grade of D was received. However, NMSU does not accept the transfer of courses with D grades that satisfy basic academic competency (basic skills) in English and mathematics. NMSU will not accept transfer credit for 4 credit basic skills courses (such as ENGL 111G and CCDM 114 N) when the incoming course carries less than 3 credit hours. Also, colleges or departments may choose to accept only courses graded C or higher in their programs for both transfer and native students. Any lower-division course from another institution receiving transfer credit from NMSU at the 300 or above level will still count as a lower-division course. Transcripts will be reevaluated when students transfer from one NMSU college to another.

Each college determines which transferred courses are applicable toward a degree or a minor.

Grades earned in courses taken at other institutions are not included in the calculation of the NMSU GPA, except for grades earned by approved National Student Exchange students.

#### **Community/Junior College Transfers**

Community/junior college transfer students may be admitted and classified on the basis of acceptable credits earned at a two-year institution. However, transfer students are subject to the same graduation requirements as other NMSU students, including the required minimum number of credits from courses numbered 300 or above and the requirement that the last 30 credits must be earned through this university.

#### **Evaluation of Transfer Credits**

Once a student has been admitted to NMSU, an evaluation of credits on a course-by-course basis is submitted to the college (by the Registrar's Office) to which the student is admitted. The student's academic dean approves those transfer courses that are acceptable toward a degree or a minor.

Credits from non-accredited institutions may be evaluated by the student's academic dean after the student has completed two semesters in full-time status with satisfactory grades.

Currently enrolled students must obtain prior approval from their academic dean before work taken at another institution may apply toward meeting graduation requirements.

#### **Religious Center Courses in Religion**

Courses in religion, offered by the various religious centers through higher educational institutions with which they are affiliated, are open to all students, and these or similar courses from other universities may be transferred for credit to this university. If a student wishes to have earned credits transferred to NMSU, the following procedures must be observed:

- Obtain written approval from the academic dean prior to registration for the course at the religious center



- Count the credit in the course as part of the total semester load
- Following completion of the course, request that the institution granting the credit send a transcript of the credit to the registrar at NMSU

Registration for these courses in religion is separate from NMSU's registration and is conducted by the religious center offering the course.

Not more than 6 credits in such courses may be transferred to NMSU.

#### **Transferring Courses to Fulfill the New Mexico General Education Common Core**

During the 2005 New Mexico Legislative session, Senate Bill 161, consistent with requirements of state law (Chapter 224 of the Laws of New Mexico, 1995 as amended) was signed into law to further enhance and facilitate the articulation of general education courses among New Mexico's colleges and universities. In accordance with policies established by the New Mexico Higher Education Department, designated general education core courses successfully completed at any regionally accredited public institution of higher education in New Mexico are guaranteed to transfer to any New Mexico public institution. Students who have decided on a major and/or an institution at which to complete their studies should consult with an academic advisor at that particular institution to determine the most appropriate course selections. Students enrolling for the first year of study at a New Mexico college or university and considering possible transfer into a certificate and/or degree program at another institution are encouraged to take the courses approved for transfer during their freshman and sophomore year of study.

The core matrix of approved courses guaranteed to transfer and meet general education requirements at any New Mexico college or university can be found on the New Mexico Higher Education Department web site at [www.hed.state.nm.us](http://www.hed.state.nm.us). Courses are listed by institution, whether university or community college, under each of the five general education areas. The courses for New Mexico State University are listed in the required courses section of this catalog.

#### **Transferring Courses Within Degree Programs**

To facilitate the transfer of courses within certain degree programs, New Mexico colleges and universities have collaborated to develop transferable discipline modules. These are made up of an agreed upon number of hours and courses. When discipline module courses are taken in addition to the 35 hour general education core, the total number of hours in a transfer module are approximately 64.

For information on the transferable discipline module for Business, see the College of Business chapter. For information on the transferable discipline module for Early Childhood Education, see the College of Education chapter. Information on all available statewide transfer modules can be found on the New Mexico Higher Education Department web site at [www.hed.state.nm.us](http://www.hed.state.nm.us).

#### **Student Responsibility**

Planning for effective transfer within maximum efficiency is ultimately the student's responsibility. Responsible transfer planning includes early and regular consultation with the intended degree-granting institution to assure that all pre-transfer coursework will meet the requirements of the desired degree.

#### **Transfer Credit Appeal Process**

All New Mexico public post-secondary institutions are required to establish policies and practices for receiving and resolving complaints from students or from other complainants regarding the transfer of coursework from other public institutions in the state. A copy of NMSU's transfer credit policy may be obtained from the Office of the Registrar or from the Deputy Secretary for Academic Affairs, Higher Education Department, 2048 Galisteo St., Santa Fe, New Mexico 87505-2100.

#### **National Student Exchange (NSE)**

Courses transferred back to NMSU by students participating in the National Student Exchange (NSE) Program will be evaluated as NMSU courses and recorded on the student's academic record. All computable grades earned will be included in calculating the student's cumulative grade-point average.

#### **Out-of-State Students and Legal Jurisdiction**

By applying for admission/enrollment, both the student and parents agree that New Mexico law prevails and all litigation will be in federal court in New Mexico or in state court in Doña Ana County, New Mexico.

## **NONDEGREE ADMISSION**

Nondegree admission is designed to meet the needs of mature, part-time students who do not wish to pursue a degree at this university. Courses taken in this status may not be used to meet university admission requirements.

Students on nondegree status are not eligible to receive financial aid or student employment; nor are they eligible to participate in student government or intercollegiate athletics; nor are they eligible to receive benefits from any veterans' program.

Students interested in using nondegree credit for initial teacher certification or recertification in a new field need to contact the College of Education. Transcripts from previous institutions, high school, and/or results of college entrance exams may be required to assure readiness for university-level courses. A \$20 non-refundable, non-degree application fee is required. Non-degree students may not transfer more than 30 credits from this status to any undergraduate degree program with the exception of students participating in a high school concurrent enrollment program.

Nondegree students are subject to the same university regulations as regular students.

#### **Changing from Nondegree Status**

A nondegree student in good academic standing at NMSU may apply for change of status from nondegree to regular. Requirements for regular admission must be met.

#### **Auditing Courses**

Students who wish to audit courses may do so as nondegree students with the consent of the instructor, provided the facilities are not required for regular students. Regular students may also audit courses, but audited courses are not counted in determining maximum course loads, except for students on probation or graduate students.

#### **Application Materials**

All documents submitted as part of the admissions process become property of NMSU and will not be returned to the student. Application materials are retained for one calendar year for students who apply but do not attend.

## **INTERNATIONAL STUDENTS**

The general policies of the university as outlined in this catalog apply to international as well as domestic students. However, some special policies are necessitated by federal laws applicable only to international students.

An international student is any individual attending NMSU while present in the United States on a non-immigrant student visa. Legal immigrants or refugees must present documentation of their status either to Admissions or to the International Student Services (ISS) Office.

#### **U.S. Citizenship and Immigration Services (USCIS)**

Some of the more important rules as established by the United States Department of Homeland Security for students in non-immigrant status such as F-1 or J-1 visa types are:

1. Each student must maintain full-time student status for both the fall and spring semesters.
2. International students may not work off campus without authorization. On-campus employment may be authorized under certain conditions.
3. All international students must maintain an up-to-date record in the ISS Office. This record must indicate the student's current living address and local phone number.
4. Prior to admission, a prospective international student must demonstrate the following:
  - Academic ability to succeed in the chosen course of study;
  - Adequate financial support to complete the chosen course of study; and
  - Adequate command of the English language to maintain legal status as a full-time student for the fall and spring semesters.

## **UNIVERSITY PROCEDURES FOR INTERNATIONAL STUDENTS**

#### **Scholastic Ability**

1. Prospective undergraduates must have completed a minimum of 12 years' schooling and/or submit official diploma or completion certificate.



2. Official transcripts showing the classes taken and grades earned for the school years 10, 11, and 12 must be submitted. No hand-carried documents will be accepted unless received in a sealed envelope.
3. The scholastic average for the last three years of high school must be equivalent to 2.5 GPA on a 4.0 scale. International students are not admitted on a provisional or probationary basis.
4. Graduation from a high school in the United States does not automatically qualify a international student for admission to NMSU. The student must also submit official transcripts from his or her foreign secondary school.

**Financial Support**

1. Each prospective international student must submit a current financial support document with his or her application.
2. This document must show that (a) the person providing the financial support has the necessary funds, and (b) the funds can be transferred from the student’s home country to the United States.

No financial aid is available from NMSU. The university reserves the right to demand advance deposit of funds for any period deemed reasonable prior to granting admission. An international student can never qualify for residency and must pay nonresident fees.

**English Language Proficiency**

NMSU requires a score of 520 paper-based or 68 internet-based or better on the Test of English as a Foreign Language (TOEFL), or a score of 6.0 on the International English Language Testing System (IELTS), for all international students, both nondegree and degree seeking. International students may also demonstrate English proficiency by satisfactorily completing NMSU’s Center for Intensive Training in English (CITE) programs. A waiver of the TOEFL requirement may be considered for

- 1) Students who are native speakers of English.
- 2) Students completing high school in the United States who (a) have attended the high school for at least two full semesters and (b) have scored in at least the 75th percentile in English on the ACT.
- 3) Students transferring from a junior college, or university in the United States who have earned a minimum of 30 acceptable semester credits (45 acceptable quarter credits) with a GPA of 2.0 or better. “Acceptable credit” means classes that require a high proficiency in both written and oral English.
- 4) Students demonstrating English-language proficiency using methods accepted by the Office of Admissions.
- 5) Students enrolling in certain programs where English language proficiency is not required.

The university reserves the right to require any prospective international student to meet the TOEFL requirement.

For complete information concerning the TOEFL examination, applicants should review the following web site: [www.toefl.org](http://www.toefl.org)

NMSU conducts an Intensive English Language Program for undergraduates and graduate students pursuing degree programs at NMSU. International students are not admitted to the university for the sole purpose of studying English.

Prior to enrollment, each international undergraduate student is administered an Academic English Proficiency Test. Based on the results, the student is either assigned to one of the special English classes for international students or is excused from special English instruction. International students excused from SPCD 111G will be required to take ENGL 111G, including students whose native language is English. The student may then be required to complete one or more regular English classes as required for a particular degree. Completion of basic English courses at other U.S. institutions does not automatically satisfy this requirement.

**Admission Restrictions**

Although NMSU does not set a quota for the total number of international students, there may be several factors that would prohibit admission even though the student meets all general requirements.

1. The dean of a chosen college and the department head of a chosen major or the provost/campus director of a Community College campus may refuse to grant admission.
2. There may be a disproportionate number of international students or a disproportionate number of a particular nationality in one department or college.

3. Academic advisors, especially in the Graduate School, may not be available.
4. International students may be nondegree if admitted as exchange students, or as part of a special program, or as holders of visas that allow incidental studies related to their current non-immigrant status.
5. Non-native speakers of English normally are not admitted for summer sessions. There are some exceptions such as students admitted to NMSU’s Intensive English Programs.
6. University Community College campuses reserve the right to refuse admission to international students if the appropriate immigration and English-language support services are not available.
7. Preference for admission to the Community College campuses is shown to students who graduate from high school in the United States.
8. University Community College campuses reserve the right to set limits on the number of international students admitted to their respective campuses based on the percentage of international students within an academic program.

All application material, including the application for admission, letters of recommendation, transcripts or national examination scores and/or transcripts from colleges or universities (with an English translation), test scores including the TOEFL or IELTS, and proof of adequate financial support should be on file in the International Student Services by the following suggested dates:

- March 1\* .....for fall semester
- October 1\* ..... for spring semester

\*Contact the academic department for specific deadlines. Contact the Office of Study Abroad for exchange program admission deadlines.

**Miscellaneous Regulations**

1. All international students are required to have coverage at the Student Health Center except when the Las Cruces campus Student Health Center is not available to them.
2. All international students are required to purchase the NMSU health insurance. Exceptions for alternate health insurance plans must be pre-approved by the ISS Office. Students without insurance will not be allowed to register.
3. Upon arrival on campus new international students are not permitted to register until all ISS requirements are met, including attending orientation and taking the English screening examination. All international students, therefore, are required to report to the appropriate office on their campus.
  - Las Cruces campus: International Student Services, Educational Services, Room 8 (exchange students need to report to the Office of Study Abroad)
  - Doña Ana Community College: International Student Services, Educational Services, Room 8 (exchange students need to report to the Office of Study Abroad)
  - Alamogordo Community College: Office of Student Services, Student Services Building, Second Floor
  - Carlsbad Community College: Office of Student Services, 150 University Drive, Room 111
  - Grants Community College: Office of Student Services, Walter Martinez Building, Main Office Complex
4. Undergraduate students are required to carry at least 12 credits per semester. Students in non-degree exchange J-1 visa status must be engaged full-time in a prescribed course of study as determined by the NMSU Responsible or Alternate Responsible Officer (RO/ARO).

**TUITION, FEES AND OTHER EXPENSES**

All costs are given for one term. The university reserves the right to change any of the charges without notice.

**UNDERGRADUATE TUITION AND REQUIRED FEES**

	Undergraduate New Mexico Residents	Undergraduate Non-Residents
<b>Fall or Spring Term</b>		
12-18 credits (full-time) .....	\$3,020.40	\$9,534.00
7-11 credits, per credit or over 18 credits .....	251.70	794.50
1-6 credits, per credit.....	251.70	251.70

**Summer Term**

9 to 12 credits (full-time).....	\$2,265.30
1-8 credits, per credit.....	251.70

Tuition and fees for auditing classes are the same as above. Short courses, workshops, and institutes are treated as completely separate sessions with varied credit rates.

**ADDITIONAL FEES**

Undergraduate admission application fee .....	\$15.00
New student orientation fee.....	40.00
International student admission application fee.....	50.00
International students orientation fee.....	50.00
Distance education course fee (per credit) .....	25.00
ASNMSU Fee (Fall/ Spring 1-11 credit enrollment).....	33.50
ASNMSU Fee (Summer 1-8 credit enrollment) .....	12.40
Course examination fee (per credit).....	251.70
Certificate degree fee.....	10.00
Bachelor or Associate degree fee.....	25.00
Master or Doctorate degree fee .....	35.00
Degree application late filing fee .....	25.00
Late Registration Fee Base Cost.....	25.00

**COURSE FEES (fees assessed per course)**

See each term's Registration Guide for lists of courses with additional fees.  
Applied Music courses - see Music section of catalog

**MANDATORY INTERNATIONAL STUDENT FEES**

All international students are required to have Student Health Center coverage and to purchase the student accident and health insurance unless otherwise covered by comparable health and accident insurance approved by the International Student Services. International students will be required to purchase health insurance for spring and summer during spring registration unless they have applied for spring graduation. All International graduate assistants are required to have supplemental health insurance. (see optional fees below for costs)

**OPTIONAL FEES**

**Wellness/Fitness Fee-RATES MAY INCREASE FOR 2012-2013**

The Wellness/Fitness fee is included in full-time tuition for Las Cruces Campus students. Options for part-time students enrolled at Las Cruces Campus include:

	Wellness	Fitness
Term pass for student enrolled in 6-11 credits .....	\$79.00	\$40.00
Term pass for student enrolled in 1-5 credits .....	105.00	53.00
Single visit for student enrolled in 1-11 credits.....	35.00	5.00

The Wellness fee grants access to the Student Health Center with charges accruing for medications, lab work, testing or procedures. The Fitness fee grants access to the Student Activity Center.

**Supplemental Health Insurance**

Students who have access to the Student Health Center may choose to purchase a commercial insurance policy endorsed by NMSU. This insurance is intended to supplement the Student Health Center service. Dependent coverage is not available through NMSU but may be purchased directly from the insurance company; however, dependents of students are not eligible to use the Student Health Center. Insurance information is available at <http://www.uhcsr.com>.

**Housing Services**

See "Resources for Students" section for room descriptions, accommodations, application process, deposit requirement, regulations, and eligibility.

	Fall/Spring	Summer
Double Occupancy (Monagle).....	\$1,794.00	n/a
Double Occupancy (Garcia Hall).....	1,973.00	n/a
Double Occupancy (Pinon Hall).....	2,196.00	n/a
Double Occupancy, Suite Bath(RGH).....	1,879.00	n/a
Double Occupancy, Community Bath(RGH).....	1,678.00	n/a
Single Occupancy (Garcia) .....	3,157.00	n/a
Single Occupancy (Monagle).....	2,870.00	n/a
Single Occupancy, Suite Bath (RGH).....	3,006.00	n/a
Single Occupancy, Community Bath (RGH).....	2,685.00	n/a
Four Bedroom Apartment (Cervantes Village).....	2,036.00	closed
Four Bedroom (Chamisa Village).....	2,493.00	2,070.00

Two-Bedroom Apartment (Cervantes Village) .....	2,155.00	closed
Two-Bedroom Private Apartment (Cervantes Village).....	3,233.00	closed
Two-Bedroom Apartment (Vista del Monte).....	2,304.00	1,913.00
Two-Bedroom Private Apartment (Vista del Monte) .....	3,457.00	2,871.00
Two-Bedroom (Chamisa Village).....	2,849.00	2,366.00
Efficiency Apartment (Cervantes Village) .....	2,225.00	1,848.00
Graduate Community per month (Vista del Monte).....	832.00	832.00
Student Family Housing (per month) .....	630.00	630.00
Family Housing Four-Bedroom (Cervantes Village, per month).....	856.00	856.00

**Dining Services**

See "Housing and Residential Life" section for meal plan descriptions, application process, deposit requirement, regulations, and eligibility. Freshmen living on campus must choose between Aggie Unlimited and Aggie Choice Plans.

**Fall/Spring Summer**

Aggie Unlimited (unlimited entrances + 100 Aggie Dining \$) .....	\$1,618.00	n/a
Aggie Choice (230 entrances + 325 Aggie Dining \$) .....	1,575.00	n/a
Aggie 64 (64 entrances + 325 Aggie Dining \$).....	763.00	n/a
Pistol 400 (0 entrances + 400 Aggie Dining \$) .....	350.00	n/a
Family Resident Optimum 350 (350 entrances) .....	1,260.00	n/a
Family Resident Optimum 250 (250 entrances) .....	900.00	n/a

**Late Registration Penalties**

A late registration penalty of \$25 will be assessed for course registrations processed during a term's late registration time period. Failure to make scheduled payment with the University Accounts Receivable on due dates may result in additional liability.

**PAYMENT OF CHARGES**

By enrolling in classes at NMSU, a student makes a financial commitment to pay the tuition and fee charges associated with that enrollment. The enrollment action constitutes a financial obligation between the student and NMSU and all proceeds of this agreement will be used for education purposes and constitutes an education loan pursuant to 11 U.S.C 523(a) (8). Terms and Conditions of Course Registration are posted on the NMSU website and available in each term's registration guide. Payments can be made by mail, web, telephone, or in person at the University Accounts Receivable. Cash, checks, money orders and limited types of credit cards are accepted. Term charges can be paid in full or paid by using a payment plan. Students utilizing the payment plan for Fall and Spring terms will have the balance due in four equal monthly installments within the term. Summer terms have two installments within the term. A payment plan fee of \$20.00 is assessed to students using the plan for each campus enrolled. All financial aid received must be paid towards balances owed. Additional penalty charges may be assessed for failure to make payments when due. The University reserves the right to deny a payment plan to any student who has a poor credit rating or who has been negligent in making payments to the University for previous debts. Course reservations may be cancelled if payment arrangements for past due dates are not completed by the deadlines as outlined in a term's registration guide. Academic credits, transcripts, and diplomas will be withheld until all financial obligations are paid. Students are prohibited from registering for a term until all previous debts due to the University are paid in full.

**Tuition Adjustments, Refund, and Forfeitures**

Any student officially dropping or withdrawing from a course or courses during a term may receive tuition and fee adjustments as outlined in the current class schedule. No tuition adjustments will be made on classes of less than five weeks' duration. **Non-attendance does not constitute official course drop or withdrawal. All charges due to the University must be paid before refunds will be permitted.**

In cases of academic or disciplinary suspension, eligibility for tuition adjustments will depend on the conditions of the suspension and will be entirely at the option of the university. Should unforeseen circumstances beyond the reasonable control of the University result in curtailing classes, closing residence facilities, or otherwise withdrawing services that are a normal function of NMSU, refunds of any nature will be at the discretion of the university administration.

Residence hall rentals and dining hall charges may be refunded in accordance with schedules adopted by these departments.

**Dishonored Financial Transactions- Checks, Credit Cards, ACH Transactions**

The university charges a penalty on all dishonored cash instruments. Personal checks will not be accepted from students who have had previously dishonored checks.

**ESTIMATING OTHER EXPENSES**

In addition to the direct costs stated above, other expenses per semester may include such items as textbooks and supplies (estimated at \$300) and personal expenses (estimated at \$460).

**COOPERATIVE EDUCATION**

Students participating in the Cooperative Education Program who receive academic credit pay the same tuition and fees as regularly enrolled students. Work phase students who are assigned to campus or nearby off-campus work-station may purchase the student wellness/fitness optional fees the same as a part-time student enrolled in 1-5 credits.

**RESIDENT, NONRESIDENT STATUS**

Resident or nonresident status is determined in accordance to a uniform definition established for all New Mexico institutions by the Higher Education Department, State of New Mexico. The NMSU Registrar's Office administers residency.

Information on the following programs may be obtained from the Office of Admissions:

- Residents of Texas who reside in Texas within 135 miles of the NMSU-Las Cruces campus may be eligible for a special tuition rate for the Las Cruces campus only.
- American Indian nations, tribes and pueblos. All out of state members of an American Indian nation, tribe, and pueblo, located wholly or partially in New Mexico, regardless of the residence of the member prior to acceptance at a post-secondary educational institution shall be eligible to pay the in-state tuition rate. These include members of the following tribes or pueblos: Jicarilla Apache, Mescalero Apache, Taos pueblo, Picuris pueblo, Ohkay Owingeh, Santa Clara pueblo, Nambe pueblo, Navajo tribe, San Ildefonso pueblo, Pojoaque pueblo, Tesuque pueblo, Cochiti pueblo, Jemez pueblo, Santo Domingo pueblo, San Felipe pueblo, Zia pueblo, Santa Ana pueblo, Sandia pueblo, Isleta pueblo, Laguna pueblo, Acoma pueblo, Zuni pueblo, and the Ute Mountain tribe.
- The Western Interstate Commission for Higher Education (WICHE) allows students in western states to enroll in college programs at a special tuition rate. Students interested in dentistry, veterinary medicine, occupational therapy, optometry, osteopathy, podiatry, forestry, graduate library studies, graduate nursing education, and public health should see the paragraph on Western Interstate Commission for Higher Education in the "Resources for Students" section.
- Special provisions consistent with the NMSU Servicemembers Opportunity College and other agreements apply for active military and veterans-see section Military/Veterans and Family Members.

**STUDENT ACCIDENT AND SICKNESS INSURANCE**

All full-time students may purchase an additional accident and sickness policy to supplement the Student Health Center service. Part-time students enrolled for 6 or more credits may purchase the additional accident and sickness policy provided they have paid the wellness fee.

## FINANCIAL AID

The mission of the Office of Student Financial Aid and Scholarship Services is to improve access to higher education by providing comprehensive financial assistance and information to all students and the NMSU community. NMSU, the federal government, and the state of New Mexico all contribute to assist students and their families in pursuing higher education.

The financial aid office administers a broad spectrum of loans, grants, jobs, and scholarships in an attempt to meet the financial needs of the university's students.

The Office of Student Financial Aid and Scholarship Services awards financial aid to students according to their individual needs. Parents of students are expected to contribute to their child's education according to their ability, taking into account their income, assets, number of dependents, and other relevant information. Students themselves are expected to contribute from their own

assets and earnings, including appropriate borrowing against future income. All information provided to the Office of Student Financial Aid is regarded as confidential.

Students applying for financial aid complete a Free Application of Federal Student Aid (FAFSA) designed to determine, in accordance with state and federal guidelines, the difference between what the student or family is expected to contribute and the cost of attending NMSU. Among the factors that determine the family's expected contribution are

- (1) annual adjusted gross income as reported to the Internal Revenue Service;
- (2) savings, stocks, and/or bonds;
- (3) other assets in the form of a business, farm, or real estate;
- (4) nontaxable income and benefits; and
- (5) student's prior year income and assets.

Students applying for financial aid should complete a FAFSA by visiting <http://fa.nmsu.edu> or [www.fafsa.ed.gov/](http://www.fafsa.ed.gov/).

Please refer to the NMSU Financial Aid web site for more information on financial aid available in the financial aid office. A listing of programs and policies is available at <http://fa.nmsu.edu>.

**GENERAL ELIGIBILITY REQUIREMENTS**

To receive financial aid you must demonstrate the following:

- Have financial need, except for some loan and work-study programs.
- Have a high school diploma or a General Education Development (GED) Certificate, pass a test approved by the U.S. Department of Education, meet other standards your state establishes that are approved by the U.S. Department of Education, or complete a high school education in a home school setting that is treated as a home school or private school under state law. See your financial aid administrator for more information.
- Be enrolled or accepted for enrollment as a regular student working toward a degree or certificate in an eligible program. (You may not receive aid for correspondence or telecommunications courses unless they are part of an associate's, bachelor's, or graduate degree program.)
- Be a U.S. citizen or eligible noncitizen (state funded scholarships are available to undocumented students).
- Have a valid Social Security number. If you don't have a Social Security number, you can find out more about applying for one at [www.ssa.gov](http://www.ssa.gov).
- Make satisfactory academic progress (SAP).
- Sign a statement on the FAFSA certifying that you will use federal student aid only for educational purposes.
- Sign a statement on the FAFSA certifying that you are not in default on a federal student loan and that you do not owe money back on a federal student grant.
- Register with the Selective Service, if required.

**SOURCES OF FINANCIAL AID**

**Grants**—The foundation for financial aid is the Federal Pell Grant, a federal grant available to undergraduate students with documented financial need. Pell Grants range from \$400 to \$5,350, though these figures are subject to change each year. If a Pell Grant is insufficient to pay educational expenses, the student may be eligible to receive other types of aid, including a Federal Supplemental Educational Opportunity Grant (SEOG) or Leveraging Education Assistance Partnership Program Grant (LEAP), and/or other miscellaneous grants. These grants are awarded to undergraduate students who show exceptional financial need. For more information, contact the Office of Student Financial Aid and Scholarship Services or visit the university's scholarship website at <http://fa.nmsu.edu/sch.html>. Typically, all three types of grants do not have to be repaid.

**Loans**—Available to undergraduate and graduate students with financial need, Federal Perkins Loans are long-term, low-interest loans that must be repaid to the university according to federal guidelines. Repayment begins nine months after graduation or after enrollment drops below 6 credits for undergraduate students.

Subsidized and unsubsidized Federal Stafford Loans are need-based, long-term loans available to undergraduate and graduate students. Students receiving a subsidized or unsubsidized Federal Stafford loan or a Perkins, must complete a debt-management session before NMSU will issue the funds. In addition, students must complete an exit interview upon graduation or withdrawal from the university. Repayment of a Stafford loan begins six months after



graduation or six months after enrollment drops below 6 credits for undergraduate students. The interest rate is variable but will not exceed 8.25%. More information will be available at the time the loan is made.

**Work-Study Programs**—The Federal Work-Study Program provides employment opportunities for selected undergraduate and graduate students with demonstrated financial need. The New Mexico Work-Study Program also provides employment opportunities for students; however, only New Mexico residents are eligible to participate in the program.

For more information on the U.S. Department of Education student aid programs, go to <http://studentaid.ed.gov/guide> (for financial aid) or see the NMSU Financial Aid web site at <http://fa.nmsu.edu>.

## AWARDS

All financial aid awards are based on information provided by the student and parents, availability of funds, and eligibility requirements. Any award may be revised based on changes in enrollment, cost of attendance, family contribution, or failure to meet satisfactory academic progress. Withdrawals or reductions in enrollment may affect an award or any future awards. Financial Aid will not pay for audited courses or some repeats.

### Scholarships and Other Aid

State, institutional, and federal scholarships may also be available. Amounts, deadlines and eligibility requirements vary. For more information, contact the Office of Student Financial Aid and Scholarship Services or visit the university's scholarship web site at <http://fa.nmsu.edu/sch.html>.

Many students finance part of their education with scholarships, which may be awarded for academic achievement, special skills, talent, and/or because of the recipient's financial need.

### Major Scholarships for Entering Freshmen

For consideration, students must be admitted (tentative or final) to NMSU (Las Cruces campus) by March 1, and meet eligibility criteria at that time. Students must be NM residents and graduate from a New Mexico High School and attend at least one year at a New Mexico High School or be a New Mexico GED recipient (except for the Out of State Competitive Scholarship). Students must enroll in the first regular semester directly following high school graduation. Recipients must be enrolled in bachelor's degree-seeking courses at the Las Cruces campus of NMSU. Some scholarships may be funded in part by the New Mexico Legislative Lottery Scholarship beginning the second semester. A FAFSA application is or may be required for most scholarships. Scholarships are competitive and number of awards granted is limited. A student may receive only one of the major scholarships listed for entering freshmen. Students must register in all Las Cruces main campus courses. Entering freshman students must accept scholarships offered by June 1st.

**Home School Students**—for financial aid eligibility contact the Office of Student Financial Aid and Scholarship Services.

**President's Associates Honors Scholarship: Standard Tuition and Fees plus \$1,625/Semester**—NMSU scholarship application required. Application available online at <http://scholarships.nmsu.edu/>. Deadline mid-January. Students applying for this scholarship must apply, meet scholarship criteria, and be admitted to NMSU by mid-January. High School Requirements: 3.75 High School GPA and an ACT composite of 28 (SAT 1260) or 3.5 HS GPA and an ACT composite of 30 (SAT 1340). Renewable 1st semester: 3.25 GPA and successful completion of 15 graded credits. Thereafter, renewable based on 3.5 cumulative GPA and successful completion of 15 new graded credits per semester. A FAFSA application must be submitted by March 1st.

**Higher Achiever Leadership Scholarship: Standard Tuition and Fees plus \$1,000/Semester**—High School Requirements: 3.75 GPA and 28 ACT or 3.5 and 30 ACT. Renewable 3.25 GPA and successful completion of 15 graded credits at the end of the first semester. Thereafter, renewable based on 3.5 cumulative GPA and successful completion of 15 new graded credits per semester. A FAFSA application must be submitted by March 1st.

**Honors Excel Scholarship: Standard Tuition and Fees plus \$500/semester**—High School Requirements: 24 ACT (1110 SAT) and 3.75 GPA or 26 ACT (1190 SAT). Renewable 3.25 GPA and successful completion of 15 graded credits at the end of the first semester. Thereafter, renewable based on a 3.5 cumulative GPA and successful completion of 15 new graded credits per semester. A FAFSA application must be submitted by March 1st.

**New Mexico Scholars Scholarship: Tuition and Fees and Book Stipend**—Qualifying family income, if one student in college, \$30,000 AGI or less. If two

students in college, \$40,000 AGI or less. High School Requirements: 25 ACT (1150 SAT) or top 5% of high school class. Renewable: 3.0 GPA and successful completion of 12 new graded credits each semester.

**Regents Scholarship: Standard Tuition and Fees**—High School Requirements: 23 ACT (1070 SAT) and 3.5 GPA or 3.75 GPA. Renewable: 3.0 cumulative GPA and 15 new graded credits each semester. A FAFSA application must be submitted by March 1st.

**Opportunity Scholarship: One Semester (non-renewable) \$1,000 Award**—High School Requirements: 21 ACT (990 SAT) or 3.0 GPA. A FAFSA application must be submitted by March 1st.

**Legislative Lottery: Standard Tuition only**—Awarded in the second semester of the freshman year for qualified students completing 12 credits with a semester GPA of 2.5. Renewable: 2.5 cumulative GPA and 12 new graded credits each semester.

**Out-of-State Competitive Scholarship: Reduction to In-State Tuition and Fees Plus \$100/Semester**—Non-NM Residents. High School Requirements: 23 ACT (1070 SAT) and 3.5 GPA or 26 ACT (1190 SAT) and 3.0 GPA. Renewable: 3.25 GPA and completion of 15 new graded credits each semester. Scholarship is competitive and number of awards granted is limited. NMSU scholarship application required by March 1st. Application available online at [scholarships.nmsu.edu](http://scholarships.nmsu.edu)

## FINANCIAL AID SATISFACTORY ACADEMIC PROGRESS

Federal regulations require that financial aid recipients meet certain academic standards to be eligible for federal financial aid. To ensure that financial aid recipients are making satisfactory academic progress, academic transcripts are reviewed at the end of each term to determine eligibility for the next term. All terms of attendance are reviewed, including periods in which the student did not receive financial aid. All transfer credit hours are taken into account when satisfactory progress is reviewed.

- **Qualitative Progress:** Undergraduate students must maintain a cumulative GPA of at least 2.0 (a C average). Graduate students must maintain a cumulative GPA of at least 3.0 (a B average). Grade point values are: A = 4.0, B = 3.0, C = 2.0, D = 1.0, F = 0. Grades of I, CR, RR, PR, NC, W, AU are not calculated in the GPA.
- **Completion Rate:** Students must complete a minimum of 67 percent of all coursework (registered credit hours) attempted at NMSU. Any course with a grade of withdraw (W), incomplete (I), repeats (RR), failure (F), audit (AU), or no credit (NC) is not considered completed coursework. Repeated courses are included in the calculation.
- **Maximum Time Frame:** Undergraduate students must complete their program within 150 percent of the credit hours required by the program. Students who have reached the maximum allowable time will be suspended from receiving financial aid. Developmental/remedial hours are excluded from this calculation. Total attempted hours including repeated courses and transfer coursework are included in the student's maximum time frame calculation.
- **Recipients of financial aid grants and loans who drop credits or withdraw** may be required to return all or a portion of awarded Title IV funds. Further information regarding the return of Title IV funds is available on the NMSU web site at [http://fa.nmsu.edu/title\\_IV.html](http://fa.nmsu.edu/title_IV.html).

## FINANCIAL AID SUSPENSION

Students are suspended from receiving financial aid if they do not meet satisfactory academic progress standards. Students on financial aid suspension will not receive any form of federal or state financial aid (grants, loans, work study). Financial aid eligibility is reinstated when all standards of satisfactory progress are met.

## THE APPEALS PROCESS

Students suspended from financial aid may appeal the suspension if there are mitigating circumstances affecting their progress. Students who would like to appeal the suspension must submit an appeal form, available at <http://fa.nmsu.edu>, and all required documentation to the Office of Student Financial Aid. A committee will review the appeal and may grant reinstatement of financial aid based on mitigating circumstances that directly contributed to deficient academic performance. Appeals are usually evaluated on a term-by-term basis.

## RESOURCES FOR STUDENTS

### ACADEMIC

#### DISTANCE EDUCATION

The College of Extended Learning's (CEL) Technology Assisted and Off-Site Education (TAOS) extends New Mexico State University's reach beyond traditional programs to provide opportunities for students to meet their academic, professional, and personal learning goals. TAOS courses from NMSU are delivered using the most innovative technology and methods available, including web-based technologies, ITV (Interactive Television), faculty exchanges, and off-site classes.

The CEL/TAOS is located in Milton Hall, room 185. Contact by calling (575) 646-8231 or (800) 821-1574, or <http://extended.nmsu.edu/contact>. For current information visit <http://extended.nmsu.edu/>.

#### Technology-Assisted and Off-Site Education (TAOS)

TAOS programs are designed to serve students who live a significant distance away from the main campus or have scheduling conflicts due to family or work obligations and often find distance education as the best solution to educational advancement. Distance Education (DE) at NMSU is defined as the formal education process of delivering instruction so that students physically remote from the campus of program origin and/or instructor may participate. Distance education undergraduate degree programs at NMSU are delivered using both technology and face-to-face instruction at off-site locations such as NMSU community college campuses. Visit <http://distance.nmsu.edu/degrees/index.cfm> for a complete listing of programs.

#### Bachelor's Degree Completion Programs

All undergraduate degree programs offered through NMSU are bachelor degree completion programs. These programs require that students have all lower-division (100 and 200 level) credits completed before admittance into the program. Bachelor degree completion programs normally require two years of 300 and 400 level upper-division coursework to finish.

#### Technology-Based Programs

Distance Education TAOS programs listed under this category are delivered primarily using distance learning technologies. In some cases, programs may require brief residencies on the main campus for orientation, assessment, or other activities. Technologies used to deliver distance education at NMSU include:

- Instructure Canvas - enables instructors to utilize the Internet in the delivery of a course
- Adobe Connect - offers a synchronous Web delivery solution for conducting virtual or "live" classroom events through the Web
- Instructional Media Services - provides course delivery through, a variety of synchronous and asynchronous technologies. Courses may use a 'blended approach' to instruction by integrating two or more types of technologies shown above to promote engaging and effective learning.

#### Off-Site/Extension Programs

Distance education programs listed under this category are delivered primarily face-to-face at off-site/extension locations. Often, these courses will enhance instruction and learning with technology. Programs are located at NMSU two-year and Albuquerque Center campuses, as well as other locations throughout the state. The degree completion programs below are available at one or more off-site/extension locations.

#### EDGAR R. GARRETT SPEECH AND HEARING CENTER

Combining instruction, practical experience, and service, the center provides training for students in communication disorders and provides service to the community. Students have opportunities to participate in diagnostic evaluations and to provide therapy in the areas of speech, language, and hearing for clients across the lifespan.

Referrals are accepted from all sources (self, medical, school, nonprofessionals). The Edgar R. Garrett Speech and Hearing Center is a fee-for-service clinic where university students and their immediate family receive a reduced rate. All services are supervised by professional personnel licensed in New Mexico and holding the Certificate of Clinical Competence in Speech-Language Pathology or Audiology of the American Speech-Language-Hearing Association. Services are provided in English and/or Spanish. For further information, contact

the Edgar R. Garrett Speech and Hearing Center, MSC 3SPE, New Mexico State University, P. O. Box 30001, Las Cruces, New Mexico 88003-8001, (575) 646-3906; (TTY)-(575) 646-6191).

#### NEW MEXICO STATE UNIVERSITY LIBRARY

The New Mexico State University Library is proud to assist NMSU students with its dedicated staff, print and electronic research collections, user-friendly online catalog, library instruction program, helpful services, computer clusters, and interesting programs and workshops. In addition, the Library offers unique archival resources, the notable Zuhl geological collection, artworks on display, and an award-winning faculty. Students enjoy working in groups in the colorful new spaces in Branson and Zuhl libraries, and they consider the Library their "home away from home." They also like the Library's quiet study spaces. Keep in touch with all the Library has to offer at <http://lib.nmsu.edu>.

#### OFFICE OF INTERNATIONAL AND BORDER PROGRAMS (IP)

The Office of International and Border Programs represents the university with U.S. government agencies, foreign governments, international education professional associations, and the private sector concerning international activities. The Office also advocates for effective practices, policies, and procedures to internationalize the university. The major program areas of the Office are:

**International Development and Cooperation Management** - IP facilitates the interests of faculty who wish to participate in international interdisciplinary projects requiring technical assistance, training or public outreach. This includes project identification, proposal development, project management, and development of international cooperative agreements with international entities or institutions.

**US-Mexico Border Programs** - IP has major responsibility for coordinating the university's involvement in US-Mexico cooperative projects including research, economic development and educational outreach.

**Study Abroad Programs and Exchange Visitor Services** - IP is the university's representative for the U.S. State Department's Exchange Visitor Program and develops and coordinates study abroad programs and services for outbound students and inbound exchange students and scholars.

**Community Outreach and Public Service** - IP adheres to the land-grant philosophy by providing programs and services to increase international understanding and awareness in the local and campus community, including southern New Mexico and the state of Chihuahua, Mexico.

#### ORAU STUDENT OPPORTUNITY

Since 1991, students and faculty of New Mexico State University benefited from its membership in Oak Ridge Associated Universities (ORAU). ORAU is a consortium of 98 colleges and universities and a contractor for the U.S. Department of Energy (DOE) located in Oak Ridge, Tennessee. ORAU works with its member institutions to help their students and faculty gain access to federal research facilities throughout the country; to keep its members informed about opportunities for fellowship, scholarship, and research appointments; and to organize research alliances among its members.

Through the Oak Ridge Institute for Science and Education (ORISE), the DOE facility that ORAU operates, undergraduates, graduates, postgraduates, as well as faculty enjoy access to a multitude of opportunities for study and research. Students can participate in programs covering a wide variety of disciplines including business, earth sciences, epidemiology, engineering, physics, geological sciences, pharmacology, ocean sciences, biomedical sciences, nuclear chemistry, and mathematics. Appointment and program length range from one month to four years. Many of these programs are especially designed to increase the numbers of underrepresented minority students pursuing degrees in science- and engineering-related disciplines. A comprehensive listing of these programs and other opportunities, their disciplines, and details on locations and benefits can be found in the ORISE Catalog of Education and Training Programs, which is available at <http://see.oraui.org>.

ORAU's Office of Partnership Development seeks opportunities for partnerships and alliances among ORAU's members, private industry, and major federal facilities. Activities include faculty development programs, such as the Ralph E. Powe Junior Faculty Enhancement Awards, the Visiting Industrial Scholars Program, consortium research funding initiatives, faculty research and support programs as well as services to chief research officers.

#### STUDENTS ACCESSIBILITY SERVICES

The Student Accessibility Services Office assists individuals with documented disabilities to obtain appropriate academic accommodations. Students with physical and/or mental impairments are encouraged to apply for accom-

modations and/or services through this office such as, note taking, extended testing time accommodations, interpreters, and others. Students are encouraged to request services and provide documentation well in advance of the start of school to allow adequate time to make the needed arrangements. The university is committed to ensuring that the campus is accessible to all individuals. For more information, please come by our offices in Corbett Center 244 or call (575) 646-6840 (voice) or contact us at [sas@nmsu.edu](mailto:sas@nmsu.edu).

#### **STUDY ABROAD PROGRAMS AND EXCHANGE VISITOR SERVICES**

This division of International and Border Programs is the international education program development and coordination unit that assists colleges and departments to integrate study abroad into the undergraduate and graduate curriculum. It manages support services for outbound study abroad students and inbound international exchange students and scholars and coordinates all international partner exchange agreements, such as the International Student Exchange Program (ISEP). The division also sponsors the Study Abroad Ambassadors Club, the NMSU Rotaract Service Club and the Global Village Living and Learning Community.

Students on the main campus and at all the branch community colleges in the NMSU system may apply to study or travel abroad while maintaining NMSU student status to receive regular course credit (graded A-F), international distance education language and teacher education credit (graded A-F), and/or transfer credit (graded CR). For exchanges with international partner institutions, students must have completed two full semesters of university study, maintained a 2.75+ grade-point average, and obtained permission of their college to receive transfer credit. For other programs student must be in good standing academically at NMSU, and receive permission to enroll from the course instructor or program coordinator. International Business majors must receive permission from their department for study abroad to count as required in their degree plan. At least four weeks of a study abroad program may count for 3 credits of Viewing a Wider World (<http://studyabroad.nmsu.edu>).

The Unit is also responsible for implementing the Exchange Visitor Program sponsored by NMSU under authority of the U.S. Department of State in support of the Mutual Educational and Cultural Exchange Act (Fulbright-Hayes Act) of 1961. The objective of the Exchange Visitor (J visa) Program is "to increase mutual understanding between the people of the United States and the people of other countries by means of educational and cultural exchanges." J Visa immigration services and other support services are coordinated for incoming exchange students, professors, research scholars, short-term scholars, and specialists invited to NMSU (<http://jexchangeservices.nmsu.edu>).

#### **TESTING SERVICES**

Testing Services (575) 528-7294, [www.nmsu.edu/~testserv](http://www.nmsu.edu/~testserv) offers information and administers a variety of State and National exams. As our client, you will have a test environment free of distractions and intimidation. Our goal is to administer exams in a pleasant, quiet and comfortable atmosphere to help reduce test anxiety. Testing Services provides test information and registration materials for the following tests: American College Testing Assessment (ACT), College Level Examination Program (CLEP), Graduate Management Admission Test (GMAT), Graduate Record Exam (GRE), Law School Admission Test (LSAT), Miller Analogies Test (MAT), New Mexico Teacher Assessments (NMTA), Praxis, and General Education Development (GED).

#### **WESTERN INTERSTATE COMMISSION FOR HIGHER EDUCATION**

NMSU collaborates with the Western Interstate Commission for Higher Education (WICHE) in recommending graduates of the university for programs in dentistry, graduate library studies, occupational therapy, optometry, osteopathy, podiatry, public health, and veterinary medicine in universities of other western states. The State of New Mexico subsidizes the education of New Mexico residents when approved for training in these fields in other states. This subsidy is a loan-for-service program which permits New Mexico residents to attend state-supported institutions at in-state tuition rates and private institutions at approximately one-third the standard tuition cost if they practice in New Mexico for an equal number of years after graduation. This program is contingent upon funding by the state legislature. For further information write the Certifying Officer for New Mexico, WICHE's Student Exchange Program, New Mexico Higher Education Department, 2048 Galisteo St., Santa Fe, NM 87505-2100.

## **INVOLVEMENT**

#### **CAMPUS ACTIVITIES**

The Department of Campus Activities offers outside the classroom involvement, an essential complement to the student's academics. Leadership and personal growth opportunities are offered through student organizations, Greek Life, and National Student Exchange. Students are expected to take advantage of the Student Involvement Log (co-curricular transcript) and/or the Leader Certificate Program to optimize their undergraduate experience.

This office also coordinates activities and events through the Activity Registration process, administers the University Sales and Solicitation Policy and serves as liaison to the InterFaith Council.

#### **NATIONAL STUDENT EXCHANGE PROGRAM**

Under the National Student Exchange Program (NSE), students may pay NMSU tuition and attend any of 180 colleges or universities across the nation. NSE allows students to broaden their academic, social, and cultural awareness through study in different geographical settings. To qualify for the program, an applicant must be a full-time student with a 2.5 grade-point average and must be a sophomore, junior, or senior at the time of exchange. Applications for the program are accepted from October through February for the following academic year. Late applications may be accepted if space permits.

Grades and credit hours earned at the host institution become part of the official NMSU transcript upon approval of the academic advisor and records officer. Grades are recorded according to the NMSU grading system.

## **ON-CAMPUS SERVICES**

#### **CAMPUS DINING**

It is mandatory for freshmen who live in campus housing to participate in one of the available meal plans that the university offers. Continuing and commuter students will find different meal plans that suit their lifestyle. A dining contract runs for the whole academic year and charges are applied to a student's university account every semester. For more information visit the Web site <http://www.nmsu.edu/~idsvs>. You can obtain a Dining Application from the ID Card Services office on the first floor of Corbett Center Student Union or at the Housing and Residential Life Department.

#### **Other Food Service Options**

In addition to the meal membership program, food service is available at various locations throughout the campus by using cash, NMSU Aggie Ca\$h, the NMSU Enhanced Aggie Access Card, or in some areas, the Flex Points included with the meal plan package. Food service location hours are available at <http://www.nmsu.edu/~dining> under "Food Guide." Additional information can be obtained by contacting the ID Card Office at 575-646-4835 or <http://www.nmsu.edu/~idsvs>.

#### **CORBETT CENTER STUDENT UNION**

Corbett Center Student Union (CCSU) serves as the center for campus life, providing programs and services for students and other members of the university community. A place to study, relax, meet with student groups, work or play, CCSU offers students, faculty and staff a variety of services and activities. The union is the home to several administrative offices, Campus Activities, ASNMSU, the student radio station and student newspaper. Services offered by CCSU include meeting rooms, an auditorium, multiple dining facilities (both retail and residential), ATM's, and computer lab, study areas, post office and a convenience store. For more information call (575) 646-4530 or visit the Web site at <http://ccsu.nmsu.edu/>.

#### **HOUSING AND RESIDENTIAL LIFE**

Living on campus can help ease the transition to college and help students meet new and diverse individuals. As campus residents, students are part of the campus community and have more opportunities to join clubs, attend campus events, be closer to classes, the Activity Center, the library, and many other campus resources. While campus living is not required, the university strongly encourages students to take advantage of the many opportunities available through campus residency. For more information about housing options and application procedures, visit our Web site at [www.nmsu.edu/~housing](http://www.nmsu.edu/~housing).

#### **Residence Halls**

NMSU offers four different residence halls to choose from, available to all students ranging from freshman to seniors, but required for all first-year on-campus students. Options include Garcia Hall, Piñon Hall, Monagle Hall or



Rhodes-Garrett-Hamiel. The semester housing cost includes all utilities, cable TV, and high-speed data connectivity.

#### **Campus Apartments**

Campus apartments offer students more than just affordable housing; campus apartments offer a unique college atmosphere where neighbors share similar goals (such as graduating) and together form an academic community unlike any found off campus. Available for second-year to graduate students, on-campus apartments have the benefits of on-site staff, prompt maintenance and amenities such as a computer lab and laundromat. Two and four bedroom options are available and include living rooms and kitchens. Apartments are fully furnished and the semester's charge includes all utilities, cable TV and high-speed data connectivity.

#### **Student Family Housing**

Student family housing is available for students who are married and/or have dependents living with them. Two-story townhouse apartments and single-story houses include two bedrooms, a bath, kitchen and living room. Four-bedroom apartments include four bedrooms, two bathrooms, a kitchen and living room. All units are unfurnished except for the stove and refrigerator. Washing machine hook-ups are provided in the single-story houses and townhouses only. The monthly rent includes all utilities, local phone service, cable TV, and high-speed data connectivity. Some pets are allowed in parts of Student Family Housing.

#### **Availability of Units for Students with Disabilities**

There are a limited number of specially equipped residence hall rooms, single student apartments and family housing units available to students with disabilities (including students who use wheelchairs) who wish to reside in campus housing. These are assigned on a first-come, first-served basis. Specific needs or requirements (i.e., roll-in showers, special door openers, etc.) should be discussed with the Office of Student Accessibility Services on an individual basis prior to submitting an application.

#### **Application Procedures and Acceptance Policy**

The university reserves the right to refuse to give a housing assignment to any student. Examples of reasons for refusal include, but are not limited to, individuals who have criminal histories, individuals who have behavioral problems which may, in the opinion of the university, negatively impact the group-living environment, individuals who have been previously evicted from campus housing, or individuals who have poor rental histories. The university will assign accommodations subject to the space available. The university will not guarantee assignments to a particular building, nor will it guarantee types of accommodations, specific rooms or apartments, roommates or single rooms. The university reserves the right to change or cancel assignments in the interest of order, health, safety or discipline with appropriate written notice. Completed applications for housing and dining services\* should be submitted as early as possible, preferably one regular semester in advance. Single student housing and meal plan applications require a prepayment at the time of application. Submission of housing and dining applications indicate acceptance of the terms and conditions of the applicable agreement. The Director of Housing and Residential Life is responsible for administration of the housing agreement. The manager of ID Card Services is responsible for the administration of the Dining Agreement.

All housing areas require at least part-time enrollment during the regular academic year. Continuing housing residents are not required to enroll during summer sessions.

Completed applications for Student Family Housing\*\* should be submitted at least six to eight months in advance. Family Housing occupants are assigned based on the date of application. Family Housing occupancy is month-to-month, with thirty (30) days notice required to vacate.

*\*Application procedures for current campus residents differ from those stated above.*

*\*\*Certain qualifications apply for summer housing, single student apartment and family housing occupancy. Consult the main Housing Office for details.*

#### **ID CARD SERVICES**

The NMSU Aggie Access card is the primary source of student identification for the campus. The I.D. card serves as a membership card for meals, Aggie Ca\$h, as a key in some residential buildings, carries proof of eligibility for access to athletic events and allows for other student services. This information is added

to your card after registration for classes and financial arrangements have been completed. Please visit <http://www.nmsu.edu/~idsvs> for more information.

Aggie Ca\$h is a pre-paid account that allows you to use your Aggie Access card to make purchases at locations all over campus. The NMSU Enhanced Aggie Access Card allows your student card to also be your Wells Fargo debit card. The ID Card Services Office in Corbett Center has the information and applications you will need.

#### **PARKING OFFICE**

A NMSU parking permit is required to park on campus in parking lots or curbside on streets. Parking meters require payment. Free parking is available near the Pan American Center. The campus parking map is available at [www.nmsuparking.com](http://www.nmsuparking.com). Parking regulations are enforced between the hours of 7:30 a.m. and 4:30 p.m. Disabled parking spaces, emergency/fire zones, service zones and yellow curbs are enforced 24 hours a day. Parking Regulations are available at [www.nmsuparking.com](http://www.nmsuparking.com).

Information on purchasing a NMSU parking permit is available at [www.nmsuparking.com](http://www.nmsuparking.com) or at the Parking Department located at 1400 E. University Ave. (southwest corner of the Auxillary Services building adjacent to the Barnes & Noble at NMSU Bookstore & Café). Monday through Friday from 8:00am to 4:30pm. When visiting, you may park for free in designated spots just south of the building. Aggie Transit is a free campus shuttle service available to all students. Bus route maps area available at [www.nmsuparking.com](http://www.nmsuparking.com).

Transportation and Parking Services is responsible for issuing parking permits, enforcing parking regulations, developing parking lots, operating the campus motor pool and fleet fueling station as well as maintaining information related to the university fleet.

#### **CAMPUS HEALTH CENTER (CHC)**

The university maintains a well- equipped health center on campus, with a comprehensive laboratory, pharmacy, and x-ray services. Hospitalization is available in the community. Graduate students enrolled for 9 or more credits (4 in a summer session) may use the Campus Health Center. Graduate students enrolled for 6-8 credits (3 in summer session) may choose to pay the wellness fee at registration to become eligible for medical care. For a description of the graduate assistant health insurance benefit see the section earlier in this catalog.

Information on Supplemental Health Insurance can be picked up at the Campus Health Center or by calling (575) 646-5706. For more information regarding the CHC or the health insurance policy call the number listed above or e-mail to [debramon@nmsu.edu](mailto:debramon@nmsu.edu) or visit our web page at <http://www.wellness.nmsu.edu>.

#### **SUPPORT FOR SUCCESS**

##### **CAREER SERVICES**

The mission of Career Services is to offer programs, services, and resources that will contribute to students' life-long career-planning efforts. Staff members work closely with deans, department heads, faculty, and employers to assist students and alumni in developing suitable career opportunities based on their education, experiences, and interests. Additionally, Career Services arranges interviews between prospective employers and graduating students and alumni. The staff advises students on the career-planning process and successful job-search strategies. Current information on employment trends and a comprehensive library of career literature help students make informed decisions. Also, informative career fairs are held throughout the academic year.

Excellent experiential opportunities, through the following programs, contribute to forming students' career goals, to developing a positive work ethic, and to providing financial support:

**Off-Campus Employment**—Part- and full-time jobs in Las Cruces and the NASA Johnson Space Center, requiring general or very specific qualifications, are listed and referrals are made for students and their spouses.

**Internships and Cooperative Education**—Information is available on internship/Cooperative Education opportunities offered by government, nonprofit organizations, and business/industry. During the summer months and throughout the academic year, interns may arrange for academic credit for internships.

Candidates can launch their career plans through registration in Aggie CAREER Manager. For comprehensive information on all programs and services offered by Career Services, please visit [careerservices.nmsu.edu](http://careerservices.nmsu.edu), send email to [hirenmsu@nmsu.edu](mailto:hirenmsu@nmsu.edu) or call (575) 646-1631.



### COOPERATIVE EDUCATION PROGRAM AND INTERNSHIPS

Today's competitive employment market necessitates that students gain practical experience related to their major before they finish their college degree. This experience is called Experiential Learning.

NMSU enjoys a national reputation for its Cooperative Education Program, which contributes to students' total educational experience and realization of career goals by integrating academic theory and practical application on the job. Co-op assignments provide varied work experiences with employers from business, industry, government, and nonprofit organizations. All co-op work assignments are for continuing students, and must be completed prior to graduation. Each semester that a student participates in an approved co-op a notation is placed on his/her permanent academic transcript.

Students may register for the *alternating plan*, usually working a minimum of two work phases throughout the U.S.; each work phase will last the duration of an academic semester. Work phases are separated by at least one semester of full-time on-campus classroom instruction. **Note:** While on an alternating work phase, students are afforded full-time status with the university, which protects enrollment status, financial aid and other student eligibilities, whether or not they are registered for any credit.

Continuous academic enrollment can be maintained through the *parallel plan*, wherein a student works 20-30 hours per week concurrent with full time enrollment. Employers are generally located within commuting distance of the university.

In addition to gaining academically related work experience, co-op students establish positive work ethics, receive remuneration for their educational experiences, and also may arrange for course credit through an academic department.

Experiential learning also includes internships. Internships are usually one-time work assignments that may or may not be curriculum-related, of a short duration and are paid or unpaid. Internships may qualify for NMSU Cooperative Education if they meet the program requirements. Internships may earn academic credit through an academic department.

All students interested in Cooperative Education or Internships must first register with the Cooperative Education office located in Career Services, Garcia Annex. For more information contact the Cooperative Education Program at (575) 646-4115 or [coop@nmsu.edu](mailto:coop@nmsu.edu). Program details may also be viewed at <http://careerservices.nmsu.edu>.

### COUNSELING AND STUDENT DEVELOPMENT

The Counseling Center provides students and the campus with a variety of services including individual, couples and group counseling, crisis intervention, career exploration, outreach programs, and consultation. We assist students with issues such as relationship conflicts, depression, anxiety, stress management, and self-esteem concerns. All services are strictly confidential and are free. The Counseling Center is located in Garcia Annex Room 100, and is open Monday through Friday, 8:00 a.m. - 5:00 p.m. The Counseling Center is staffed by professional counselors and psychologists and is accredited by the International Association of Counseling Services, Inc.

The Career Exploration Center (575-646-2241), located on the first floor northeast corner of Garcia Annex adjacent to the Counseling Center, provides students with assistance in career choice and selecting an appropriate area of study. An excellent library is available for reference use. Monday- Friday, 8-5 by walk-in or appointment. For more information check our web site at [www.nmsu.edu/~counsel/career](http://www.nmsu.edu/~counsel/career).

WAVE: Wellness, Alcohol, and Violence Education Program is comprised of the Choices program that provides campus organizations, classes and other groups with information concerning the decisions that surround drinking alcohol and provides presentations on sexual assault and violence prevention. The Crisis Assistance Crisis Line (CALL) is a 24-hour crisis line that is available to students and residents in southern New Mexico. To contact the CALL, dial 575-646-CALL.

Social Work Services (accessed through the Counseling Center at 646-2731) provides assistance in locating community resources such as food, shelter, health care, child care, or locating financial assistance when a student's educational goals are impeded by a lack of such resources.

### NEW STUDENT PROGRAMS

New Student Registration programs are offered throughout the year. During NSR events, students will attend information sessions, meet with an academic advisor and register for classes. Students will also learn more about college life and campus resources. For information, please contact the Office of University Admissions at (575) 646-3121 or [newstudentprograms.nmsu.edu](http://newstudentprograms.nmsu.edu).

### TRIO STUDENT SUPPORT SERVICES PROGRAM

TRIO Student Support Services program offers academic support to ensure that program participants succeed at NMSU. Services that are provided to participants include the following:

- **Mentoring** – participants meet with a mentor each week for assistance in adjusting to college, learning and using campus resources, developing effective study skills, accessing financial aid, using academic peer advising, staying motivated, and dealing with personal issues associated with college.
- **Tutoring** – individual tutoring is available by appointment in science, math, engineering, agriculture, social sciences, humanities, business, and foreign languages. Tutors are certified by the College Reading and Learning Association.
- **Tutoring/Computer Lab** – complete assignments, check email, drop in for tutoring.
- **Cultural Activities** – participants receive tickets to cultural/educational activities such as plays, dance productions and symphonies.
- **Equipment Loans** - laptops, tape recorders, and programmable calculators are available to participants.

To qualify for the program, students must be a first generation college student (neither parent received a four-year baccalaureate degree), meet income guidelines set by the US Department of Education, demonstrate an academic need or have a learning or physical disability. Admission to the TRIO Student Support Services is highly competitive with only 350 slots available for eligible students. Students should apply early in Hardman Hall, Room 210. Visit our web site at <http://trio.nmsu.edu/sss/index.html> or call (575) 646-1336.

### STUDENT SUCCESS CENTERS-HARDMAN/ZUHL

New Mexico State University offers a variety of learning assistance, advising, and tutorial services via two Student Success Centers: Student Success Center-Hardman and Student Success Center-Zuhl. Both Student Success Centers are centrally located on the main campus, Hardman Hall Room 210 and Zuhl Library Second Floor, and provide no-fee services to assist NMSU students reach their academic potential. Services provided at the Student Success Centers are specific to location and are described below:

The Student Success Center-Hardman (SSC-Hardman) provides study skills assistance in such areas as time management, memory, concentration, note taking, reading, test preparation, test taking, math/science study skills, speed reading, critical thinking, financial literacy, and graduate school and professional skills test preparation. The services are available to students in the following formats:

- 1) Individualized assistance is provided to any student who walks in at the SSC-Hardman.
- 2) Degree credit is offered under UNIV 110, Personal Learning Skills; UNIV 112, Academic and Personal Effectiveness; UNIV 113, Speed Reading; UNIV 150, The Freshman Year Experience; UNIV 300, Preparing for the GRE; UNIV 350, Peer Education; and UNIV 395, Independent Study.
- 3) Learning strategies and study-skills workshops provide quick assistance in one-hour presentations offered throughout the semester.
- 4) The "Red to Green Money Management Program" is a financial literacy service offering outreach workshops and one on one meetings to students.
- 5) Professional and graduate school workshops provide development in such areas as speed reading, getting into graduate school, preparing for the GRE, GMAT, LSAT, MCAT, or NMTA.
- 6) SSC-Hardman staff provide outreach presentations on learning and study-skills topics to classes, programs, and organizations on campus.

The Center also houses a 16 station student computer lab.

The SSC-Zuhl hosts the Campus Tutoring Service (CTS) program. CTS provides walk-in tutoring at no charge.

### TECHNOLOGY

#### INFORMATION AND COMMUNICATION TECHNOLOGIES

Information and Communication Technologies (ICT) supports the educational, research, and public service missions of the university through access to international computing systems. ICT projects and daily activities also provide the resources and services to support academic success at NMSU.

ICT maintains computer labs throughout the Las Cruces campus that provide PC's and Mac's loaded with computer software to meet the academic

needs of NMSU students. Access to other campus resources include wireless zones, account management, equipment checkout, and an online learning environment. Student admissions, registration, financial aid, and grades are easily accessible through the myNMSU portal.

For further information, contact ICT:

MSC 3AT, NMSU

P. O. Box 30001, Las Cruces, NM 88003-8001

(575) 646-1840 or help@nmsu.edu.

Visit ICT on the web at <http://ict.nmsu.edu>.

## ASSOCIATE DEGREE PROGRAMS

NMSU awards both designated and undesignated associate degrees following completion of 66 semester credits (excluding "N" suffix courses). The last 15 to 30 credits, depending on the requirements of the college in which the degree is pursued, must be completed at NMSU or one of its Community Colleges. (Service personnel enrolled under the two-year Servicemembers Opportunity College Program may be exempt from this requirement.)

The designation Meritorious Graduate is awarded to the top 15 percent of the students receiving associate degrees within each college in any one academic year; the students must have completed 45 or more credits with computable grades at NMSU.

### Las Cruces Campus

Detailed information on admission requirements, curricula, and associate degree or certificate requirements will be found in the section of this catalog devoted to the administering department/college.

### Associate of Arts

Administered by the Community Colleges

### Associate of Fine Arts

Administered by the Community Colleges

### Associate of Science

Administered by the Community Colleges

### Associate of Science in Engineering Technology

Administered by the College of Engineering

### Designated Associate Degrees

The following designated associate degrees are granted to students completing the specified requirements of the degree.

**Associate in Art and Graphic Design**, administered by the Community Colleges

**Associate in Criminal Justice**, administered by the Community Colleges

**Associate in Education**, administered by the Community Colleges

**Associate in Pre-business**, administered by the College of Business

**Associate of Arts in Heritage Interpretation**, administered by the Community Colleges

### Community Colleges

Many of the associate degrees offered on Las Cruces campus, as well as other programs, are available at NMSU's four community college campuses. For more information on community college campus offerings, refer to the "Community Colleges" chapter in this catalog and to their respective catalogs or admissions offices.

## GRADUATE PROGRAMS

For information on graduate programs, contact the Graduate School, MSC 3G, NMSU, P. O. Box 30001, Las Cruces, NM 88003-8001 or send email to gradinfo@nmsu.edu. Also, see <http://gradschool.nmsu.edu/gradcat.html>.

### DEGREES, SPECIALIZATIONS/CONCENTRATIONS

Graduate degrees, specializations/concentrations, and the programs in which they are awarded are:

### Interdisciplinary Master of Art

### Interdisciplinary Master of Science

### Master of Accountancy

### Master of Agriculture

*Specialization/Concentration in:*

Agribusiness

Domestic Animal Biology

### Master of Applied Geography

### Master of Arts

Agricultural Extension Education

Anthropology

Art

Communication Disorders

Communication Studies

Counseling and Guidance

*Specialization/Concentration in:*

Counseling

Guidance and Human Relations

Economics

*Specialization/Concentration in:*

Public Utility Policy and Regulation

Education

*Specialization/Concentration in:*

Autism Spectrum Disorders

Bilingual Education

Bilingual/Multicultural Special Education

Bilingual Speech-Language Pathology

Early Childhood Education

Early Childhood Special Education

Educational Diagnostics

Educational Learning Technologies

Language, Literacy & Culture

Special Education

Special Education Administration

Special Education/Deaf-Hard of Hearing

Speech-Language Pathology

Teaching English to Speakers of Other Languages

Educational Administration

English

Government

History

*Specialization/Concentration in:*

Public History

Psychology

Sociology

Spanish

### Master of Arts in Teaching

*Specialization/Concentration in:*

Math

Science

Spanish

### Master of Business Administration

*Specialization/Concentration in:*

Agribusiness

Finance

Information Systems

International Business

**Master of Criminal Justice****Master of Fine Arts****Master of Fine Arts in Creative Writing****Master of Music****Master of Public Administration****Master of Public Health****Master of Science**

Aerospace Engineering  
 Agricultural Biology  
 Agricultural Economics  
 Animal Science  
 Applied Statistics  
 Astronomy  
 Bioinformatics & Computational Biology  
 Biology  
 Chemistry  
 Computer Science  
 Family and Consumer Sciences  
 Geology  
 Horticulture  
 Mathematics  
 Molecular Biology  
 Physics  
 Range Science  
 Wildlife Science

**Master of Science in**

Chemical Engineering  
 Civil Engineering  
 Electrical Engineering  
 Environmental Engineering  
 Industrial Engineering  
 Mechanical Engineering

**Master of Science in Nursing***Specialization/Concentration in:*

Adult Health Nursing  
 Advanced Practice in Medical-Surgical Nursing  
 Advanced Practice in Psychiatric-Mental Health Nursing  
 Nursing Administration  
 Public/Community Health Nursing

**Master of Social Work****Professional Master of Financial Mathematics****Specialist in Education**

Curriculum and Instruction

*Specialization/Concentration in:*

Educational Diagnostics  
 Special Education Administration  
 Special Education/Deaf-Hard of Hearing  
 Special Education

Education Administration

Reading

School Psychology

**Doctor of Economic Development****Doctor of Nursing Practice****Doctor of Education**

Curriculum and Instruction  
 Educational Administration  
 Special Education

*Specialization/Concentration in:*

Bilingual/Multicultural Special Education

**Doctor of Philosophy**

Aerospace Engineering

Animal Science

Astronomy

Biology

Business Administration

*Specialization/Concentration in:*

Management

Marketing

Chemistry

Computer Science

Counseling Psychology

Curriculum and Instruction

Educational Administration

Engineering

*Specialization/Concentration in:*

Chemical Engineering

Civil Engineering

Electrical Engineering

Industrial Engineering

Mechanical Engineering

Interdisciplinary Doctorate

Mathematics

Molecular Biology

Nursing

Physics

Psychology

Range Science

Rhetoric and Professional Communication

Special Education

*Specialization/Concentration in:*

Bilingual/Multicultural Special Education

**DUAL AND JOINT DEGREES PROGRAMS****Master of Art in History and Master of Public Administration****Master of Criminal Justice and Master of Public Administration****Master of Public Health and Master of Social Work****Bachelor of Science in Engineering and Master of Business Administration**

(5 year combined program)

**Bachelor of Accountancy and Master of Accountancy**

(5 year combined program)

**Bachelor of Science and Master of Chemical Engineering**

(5 year combined program)

**Bachelor of Science and Master of Civil Engineering**

(5 year combined program)

**Bachelor of Science and Master's of Science in Electrical Engineering**

(5 year combined program)

**Bachelor of Science and Master's of Science in Industrial Engineering**

(5 year combined program)

**Bachelor of Science and Master's of Science in Mechanical Engineering**

(5 year combined program)

**Bachelor of Science and Master's of Science in Physics**

**GRADUATE CERTIFICATE PROGRAMS**

**Digital Communications**

**Digital Signal Processing**

**Electric Energy Systems**

**Finance**

**Online Teaching and Learning Certificate**

**Public Utility Policy and Regulation**

**Systems Engineering**

**Telemetry**

**APPROVED MINORS AND THE PROGRAMS IN WHICH THEY ARE OFFERED FOLLOW:**

**Accounting**

Accounting  
Information Systems

**Agricultural Economics and Agricultural Business**

Agriculture  
Agricultural Economics

**Animal and Range Sciences**

Animal Science  
Range Science

**Anthropology**

Native American Studies

**Applied Statistics**

Applied Statistics

**Astronomy**

Astronomy

**Agricultural Extension Education**

Agricultural Extension Education  
International Agriculture Development and Extension

**Center for Latin American and Border Studies**

Latin American Studies

**Chemical Engineering**

Chemical Engineering

**Chemistry and Biochemistry**

Biochemistry  
Chemistry

**Communication Studies**

Communication Studies  
Telecommunications

**Computer Science**

Computer Science

**Curriculum and Instruction**

Bilingual Education  
Curriculum and Instruction  
Early Childhood Special Education  
Education  
Educational Learning Technologies  
Reading

**Educational Management and Development**

Educational Administration

**Electrical Engineering**

Computer Engineering  
Electrical Engineering

**Entomology, Plant Pathology, and Weed Science**

Agricultural Biology

**Family and Consumer Sciences**

Family and Consumer Sciences

**Finance**

Finance

**Geography**

Geography  
Geographic Information Systems

**Government**

Government  
Public Administration  
Security and Intelligence Studies

**History**

History

**Health Science**

Alcohol and Drug Counseling (interdisciplinary)  
Environmental and Occupational Health  
Gerontology  
Public Health  
US/Mexico Border Health Issues

**Hotel, Restaurant and Tourism Management**

Hotel, Restaurant, and Tourism Management

**Human Performance, Dance and Recreation**

Adapted Physical Education  
Dance

**Languages and Linguistics**

Spanish

**Management**

Management

**Marketing**

Marketing

**Mathematics**

Mathematics

**Mechanical Engineering**

Aerospace Engineering  
Manufacturing Engineering  
Mechanical Engineering

**Molecular Biology**

Bioinformatics (with Computer Science)

**Physics**

Physics

**Plant and Environmental Sciences**

Agronomy  
Horticulture

**Psychology**

Psychology

**Social Work**

Alcohol and Drug Counseling (interdisciplinary)  
Special Education

**Sociology and Anthropology**

Anthropology

Archaeology  
 Food Science  
 Forensic Anthropology  
 Sociology

#### Special Education and Communication Disorders

Communication Disorders  
 Deaf Education

#### Women Studies

Women Studies

#### Multiple Department Minors

The following approved minors are examples of those offered by more than one department.

Animal Nutrition  
 Artificial Intelligence  
 Aviation Psychology  
 Cognitive Science  
 Educational Administration  
 Ecology  
 Economics  
 Energy Policy  
 Entomology  
 Environmental Engineering  
 Environmental Management  
 Fluid Mechanics  
 Geological Engineering  
 Health Management  
 Interdisciplinary Alcohol and Drug Counseling  
 Immunology  
 Language Arts  
 Meat Science  
 Natural Resource Science  
 Organic Chemistry  
 Photography  
 Public Relations  
 Remote Sensing  
 Solid Mechanics  
 Technical Writing  
 Technical and Professional Communication  
 Toxicology  
 Waste Management

## RECOGNITION of ACADEMIC ACHIEVEMENT

NMSU has a number of university-wide programs that recognize academic achievement. These include the Honors College, the Crimson Scholars Program, the dean's report of academic achievement and graduation with honors. In addition, many colleges and departments have their own programs and awards that recognize their students academic achievement.

#### THE HONORS COLLEGE

The Honors College provides motivated undergraduate students with opportunities to broaden and enrich their academic programs. In small classes taught by master teachers, honors students engage in lively discussion and collaborative investigation of interdisciplinary topics. By taking honors courses, students may also work toward completing general education requirements and disciplinary requirements in the major. There are two program options available to students: University Honors and the Honors Certificate. Each option has separate eligibility requirements, benefits, and forms of recognition for the student. For details concerning eligibility and requirements, see the Honors College section of the catalog.

#### Crimson Scholars Program

Crimson Scholars is a recognition program for academically superior students. Crimson Scholars receive a number of benefits, including:

- Automatic eligibility for all Honors courses
- Early registration
- Special advising
- Notation on college transcript
- Recognition in the commencement program
- A lapel pin

For eligibility criteria, see the Honors College section of the catalog.

#### GRADUATION WITH HONORS

To be eligible for four-year degrees with honors, a student must have earned at least 60 semester credits in computable grades while in residence at New Mexico State. Courses taken in the Honors College and graded S will be counted as a part of the minimum of 60 credits. The number of students at graduation, by college, receiving degrees with honors in any one year shall not exceed 15 percent. To receive high honors, a student must have earned a 4.0 GPA or be in the top 1.5 percent of the graduating class by college. One person from each college will receive highest honors. In case of a tie, the student with the greatest numbers of credits earned at NMSU with computable grades will be awarded highest honors for each college. Of the students receiving highest honors from the fall and spring commencements, the student with the highest grade-point average and the greatest number of credits earned at NMSU with computable grades will be awarded the Class of 1919 Scholarship Plaque.

#### Dean's Report of Academic Achievement

Following the close of the semester, each college dean publishes a list of students who have achieved honor standing in grades for the previous semester. To be eligible, a student must have been enrolled in 12 or more semester credits with a computable grade in each. The top 15 percent of eligible students by college for that semester will be named to the Dean's Honor List.

## SPECIAL PROGRAMS

#### PREPROFESSIONAL PROGRAMS

NMSU offers a number of programs designed for transfer to professional schools through its undergraduate colleges. The programs follow.

**Preveterinary Medicine** is administered by the College of Agricultural, Consumer And Environmental Sciences

**Prehealth** is administered by the College of Arts and Sciences (with the exception of pre-nursing which is administered by the College of Health and Social Services.)

**Prelaw** is administered by the College of Business and by the College of Arts and Sciences. Law schools will accept undergraduates who have earned bachelor's degrees in any major. Many prelaw students take some law courses in their undergraduate program. The College of Arts and Sciences supervises a Supplementary Major in Law and Society, which includes courses from a number of departments and several colleges. It is described under "Government" in the Arts and Sciences chapter. The College of Business offers a number of Business Law courses which can be found under the prefix BLAW in the course description chapter later in this catalog.

Further information will be found in the sections of this catalog devoted to the colleges. (See also the paragraph on Western Interstate Commission for Higher Education under "Academic Services.")

## REQUIRED COURSES

#### THE NEW MEXICO GENERAL EDUCATION COMMON CORE

General Education at NMSU provides all students with a broad foundation and common framework upon which to develop knowledge and skills, social consciousness and respect for self and others; thus enabling them to function



responsibly and effectively now and in the future. General education courses at NMSU can be identified by the G suffix.

The New Mexico General Education Common Core are designated general education courses guaranteed to transfer to any New Mexico public college or university. A complete list of approved courses can be found on the New Mexico Higher Education Department web site at [www.hed.state.nm.us](http://www.hed.state.nm.us). The current approved NMSU courses are listed below under each of the five general education areas:

**AREA I: COMMUNICATIONS (Select 9-10 credits one from each sub group)**

**English Composition – Level 1**

ENGL 111G, Rhetoric and Composition .....	4
ENGL 111GH, Rhetoric and Composition, Honors .....	4
SPCD 111G, Advanced ESL Composition .....	4

**English Composition – Level 2**

ENGL 203G, Business and Professional Communication .....	3
ENGL 211G, Writing in the Humanities and Social Sciences .....	3
ENGL 218G, Technical and Scientific Communication .....	3
ENGL 311G, Advanced Composition .....	3
ENGL 318G, Advanced Technical and Professional Communication .....	3

**Oral Communication**

AXED 201G, Effective Leadership and Communication in Agricultural Organizations.....	3
COMM 253G, Public Speaking .....	3
COMM 265G, Principles of Human Communication .....	3
HON 265G, Principles of Human Communication- Honors.....	3

**AREA II: MATHEMATICS/ALGEBRA (Select 3 credits)**

A ST/STAT 251G, Statistics for Business and Behavioral Sciences.....	3
HON 210G, The Accidental Mathematician.....	3
MATH 112G, Fundamentals of Elementary Mathematics II.....	3
MATH 121G, College Algebra .....	3
MATH 142G, Calculus for the Biological and Management Sciences.....	3
MATH 190G, Trigonometry and Precalculus.....	3
MATH 191G/MATH 191GL, Calculus and Analytic Geometry I.....	3
MATH 192/MATH 192GL, Calculus and Analytic Geometry II.....	3
MATH 210G, Math Appreciation .....	3
MATH 291G, Calculus and Analytic Geometry III .....	3
MATH/HON 275G, Spirit and Evolution of Mathematics.....	3
STAT 271G, Statistics for Psychological Sciences.....	3

**AREA III: LABORATORY SCIENCE (Select 8 credits)**

AGRO/HORT 100G, Introductory Plant Science.....	4
ANTH 130G/ANTH130GL, Human's Place in Nature: Introduction to Biological Anthropology.....	4
ASTR 105G, The Planets .....	4
ASTR 110G, Introduction to Astronomy .....	4
BIOL 101G/101GL, Human Biology.....	4
BIOL 110G, Contemporary Problems in Biology .....	4
BIOL 111G/111GL, Natural History of Life .....	4
BIOL 211G/211GL, Cellular and Organismal Biology .....	4
C S 171G, Introduction to Computer Sciences.....	4
CHEM 110G, Principles and Applications of Chemistry .....	4
CHEM 111G, General Chemistry I.....	4
CHEM 112G, General Chemistry II.....	4
E S 110G, Introductory Environmental Science.....	4
FSTE 164G, Introduction to Food Science Technology .....	4
GEOG 111G, Geography of the Natural Environment.....	4
GEOL 111G, Survey of Geology.....	4
GEOL 212G, The Dynamic Earth.....	4
HNDS 263G, Food Science I.....	4
HON 205G, Life, Energy, and Evolution.....	4
HON 219G, Earth, Time, and Life.....	4
PHYS 110G, Great Ideas of Physics .....	4
PHYS 120G, Introduction to Acoustics.....	4
PHYS 211G/211GL, General Physics I.....	4
PHYS 212G/212GL, General Physics II.....	4
PHYS 215G/215GL, Engineering Physics I.....	4
PHYS 216G/216GL, Engineering Physics II.....	4
PHYS 221G, General Physics for Life Sciences.....	3

PHYS 222G, General Physics for Life Sciences II.....	3
--	---

**AREA IV: SOCIAL/BEHAVIORAL SCIENCES (Select 6-9 credits)**

AG E 210G/FSTE 210G, Survey of Food and Agriculture Issues.....	3
ANTH 120G, Human Ancestors .....	3
ANTH 125G, Introductions to World Cultures .....	3
ANTH 201G, Introduction to Anthropology .....	3
ANTH 202G, Introduction to Archaeology and Physical Anthropology.....	3
ANTH 203G, Introduction to Language and Cultural Anthropology.....	3
C EP 110G, Human Growth and Behavior .....	3
C J 101G, Introduction to Criminal Justice.....	3
ECON 201G, Introduction to Economics .....	3
ECON 251G, Principles of Macroeconomics.....	3
ECON 252G, Principles of Microeconomics .....	3
GEOG 112G, World Regional Geography.....	3
GEOG 120G, Culture and Environment .....	3
GOVT 100G, American National Government .....	3
GOVT 110G, Introduction to Political Sciences.....	3
GOVT 150G, American Political Issues .....	3
GOVT 160G, International Political Issues.....	3
HL S 150G, Personal Health and Wellness .....	3
HON 203G, Understanding the Science of Human Behavior .....	3
HON 232G, The Human Mind.....	3
HON 235G, The World of Anthropology.....	3
HON 237G, Archaeology: Search for the Past.....	3
HON 248G, The Citizen and the State: Great Political Issues .....	3
HON 249G, American Politics in a Changing World.....	3
JOUR 105G, Media and Society.....	3
LING 200G Introduction to Language .....	3
PSY 201G, Introduction to Psychology.....	3
SOC 101G, Introduction to Sociology.....	3
SOC 201G, Contemporary Social Problems .....	3
S WK 221G Introduction to Social Welfare .....	3
W S 201G, Introduction to Women's Studies .....	3
W S 202G, Representing Women Across Cultures .....	3

**AREA V: HUMANITIES AND FINE ARTS (Select 6-9 credits)**

ART 101G, Orientation in Art.....	3
ART 110G, Visual Concepts.....	3
ART 295G, Introduction to Art History I.....	3
ART 296G, Introduction to Art History II.....	3
DANC 101G, Dance Appreciation.....	3
ENGL 115G, Perspectives on Literature.....	3
ENGL 116G, Perspectives on Film.....	3
ENGL 220G, Introduction to Creative Writing .....	3
ENGL 244G, Literature and Culture.....	3
HIST 101G, Roots of Modern Europe.....	3
HIST 102G, Modern Europe.....	3
HIST 110G, Making History.....	3
HIST 111G, Global History to 1500 .....	3
HIST 112G, Global History Since 1500 .....	3
HIST 201G, Introduction to Early American History.....	3
HIST 202G, Introduction to Recent American History .....	3
HIST 211G, East Asia to 1600 .....	3
HIST 212G, East Asia Since 1600 .....	3
HIST 221G, Islamic Civilizations to 1800 .....	3
HIST 222G, Islamic Civilizations Since 1800.....	3
HON 208G, Music in Time and Space.....	3
HON 216G, Encounters with Art.....	3
HON 220G, The World of the Renaissance: Discovering the Modern .....	3
HON 221G, Seeking the Way: Spirit and Intellect in Premodern China .....	3
HON 222G, Foundations of Western Culture .....	3
HON 225G, History of Ethics.....	3
HON 226G, Puzzles, Paradoxes, and Truth .....	3
HON 227G, Plato and the Discovery of Philosophy .....	3
HON 228G, Religion and the State.....	3
HON 229G, The New Testament as Literature.....	3
HON 230G, Bamboo and Silk: The Fabric of Chinese Literature .....	3
HON 234G, The Worlds of Arthur .....	3
HON 239G, Medieval Understandings: Literature and Culture in the Middle Ages.....	3

HON 241G, Telling American Stories: Society and Culture in Early America.....	3
HON 242G, Claiming an American Past.....	3
HON 244G, Masterpieces of World Literature.....	3
HON 270G, Theatre: Beginnings to Broadway.....	3
MUS 101G, Introduction to Music.....	3
MUS 201G, History of Jazz in Popular Music: A Blending of Cultures.....	3
PHIL 100G, Philosophy, Law and Ethics.....	3
PHIL 101G, The Art of Wondering.....	3
PHIL 124G, Philosophy of Music.....	3
PHIL 136G, The Quest for God.....	3
PHIL 201G, Introduction to Philosophy.....	3
PHIL 211G, Informal Logic.....	3
PHIL 223G, Ethics.....	3
THTR 101G, Introduction to Theater.....	3

#### Alternatives for Meeting General Education Requirements

Students taking nine or more credits in a specific subject area, even though the courses are not designated as General Education courses, will have met the general education requirements for that subject area. For example, a student may complete ART 150, 155 and 156 (9 hours) and thereby satisfy one course from the Area V: Humanities and Fine Arts category, even though none of those courses carries a G suffix. Please check with the office of the college associate dean or with college advisors.

#### NMSU VIEWING A WIDER WORLD COURSES

Viewing a Wider World fosters intelligent inquiry, abstract logical thinking, critical analysis and the integration and synthesis of knowledge; it strives for literacy in writing, reading, speaking, and listening; it teaches mathematical structures, acquainting students with precise abstract thought about numbers and space; it encourages an understanding of science and scientific inquiry; it provides a historical consciousness, including an understanding of one's own heritage as well as respect for other peoples and cultures; it includes an examination of values and stresses the importance of a carefully considered values system; it fosters an appreciation of the arts; and general education provides the breadth necessary to have a familiarity with the various branches of human understanding. All WWW courses can be identified by the V suffix.

Prior to graduating, NMSU students are required to take two courses from separate colleges from the Viewing a Wider World list in the Undergraduate Catalog. These courses are upper-division (300-400 level) General Education courses and should be taken in a student's junior and/or senior year. One of the two courses must be in a college other than their own. The other course may be taken within their home college, but this course (1) must be in a different department from their major department; (2) must not be cross-listed with a course in their home department; and (3) cannot be counted as one of the requirements for the student's major.

These courses strongly emphasize the international character and multicultural influences in the fields of study and strengthen information retrieval skills. One of the courses (3 credits) can be replaced by study abroad experience, consisting of at least four weeks of a Study Abroad program or university coursework in a foreign country earning 3 credits.

*NOTE: This list is under continuous revision. Please check with the office of the college associate dean or with college advisors for additional eligible courses. Honors courses have a specific college designation based on course content these are listed near the end of this section.*

#### COLLEGE OF AGRICULTURAL, CONSUMER AND ENVIRONMENTAL SCIENCES

AG E/GEOG 315V, World Agriculture and Food Problems.....	3
AG E/HORT 330V/HON 430V, Organic Fall Vegetable Production.....	3
AG E/HORT 331V/HON 430V, Organic Spring Vegetable Production (s).....	3
AG E/ECON 337V, Natural Resource Economics.....	3
AG E/ECON 384V, Water Resource Economics.....	3
AG E 445V, Agricultural Policy.....	3
AGRO 303V, Genetics and Society.....	3
ANSC 312V.....	3
ANSC 351V, Agricultural Animals of the World.....	3
AXED 466V, John Muir: Lessons in Sustainability.....	3
EPWS 325V, Humans, Insects, and the Environment.....	3
EPWS 380V, Ecosystem Earth: The Impact of Human Activities.....	3
FCS 449V, Family Ethnicities and Subcultures.....	3

HORT/RGSC 302V, Forestry and Society.....	3
RGSC/HORT 302V, Forestry and Society.....	3

#### COLLEGE OF ARTS AND SCIENCES

ANTH 305V, Contemporary Native Americans.....	3
ANTH 306V, Peoples of Latin America.....	3
ANTH/HIST/SOC 330V, Introduction to Religious Studies.....	3
ANTH 357V, Medical Anthropology.....	3
ANTH 360V, Food and Culture Around the World.....	3
ANTH/SOC 361V, Social Issues in Rural America.....	3
ASTR 301V, Revolutionary Ideas in Science.....	3
ASTR 305V, The Search for Life in the Universe.....	3
ASTR/HON 308V, Into the Final Frontier.....	3
ASTR/HON 330V, Planetary Exploration.....	3
CHEM 310V, Chemistry and Society.....	3
C J 440V, Comparative Criminal Justice Systems.....	3
ENGL/THTR 321V, Modern European Drama.....	3
ENGL 325V, Contemporary International Literature.....	3
ENGL 327V, Shakespeare around the Globe.....	3
ENGL 328V, Literature of Science Fiction and Fantasy.....	3
ENGL 335V, Studies in the Novel.....	3
ENGL 339V, Chicano Literature.....	3
ENGL 341V, American Indian Literature.....	3
ENGL/W S 380V, Women Writers.....	3
ENGL 390V, The Arthurian Tradition.....	3
ENGL 392V, Mythology.....	3
ENGL 394V, Southwestern Literature.....	3
FREN 365V, Perspectives in French Culture.....	3
GEOG/AG E 315V, World Agriculture and Food Problems.....	3
GEOG 325V, New Mexico and the American West.....	3
GEOG 328V, Geography of Latin America.....	3
GEOG 331V, Europe.....	3
GEOG 361V, Economic Geography.....	3
GEOG 363V, Cultural Geography.....	3
GEOG 365V, Urban Geography.....	3
GEOL 305V, Fossils and the Evolution of Life.....	3
GEOL 315V, The Geology of National Parks.....	3
GEOL 335V, Earthquakes, Volcanoes, Hurricanes, and Floods: The Role of Natural Hazards in Civilizations Past and Present.....	3
GER 333V, German Culture through Cinema.....	3
GOVT 380V, Contemporary World Political Ideologies.....	3
GPHY 340V, Planet Earth.....	3
HIST 301V, Origins of Modern Science.....	3
HIST 302V, Science in Modern Society.....	3
HIST 303V, History of Technology.....	3
HIST 311V, Colonial Latin America.....	3
HIST 312V, Modern Latin America.....	3
HIST 355V, The American West in Popular Culture.....	3
HIST 359V, Latin America and the United States: Uneasy Neighbors.....	3
HIST 366V, British Imperialism.....	3
HIST/GOVT/GEOG 374V, Urban Geography.....	3
HIST 381V, Early Russia.....	3
HIST 382V, Modern Russia.....	3
HIST 390V, The Holocaust.....	3
JOUR 377V, Mass Media Ethics.....	3
LING 302V, Language and Society.....	3
MATH/HON 411V, Great Theorems: The Art of Mathematics.....	3
PHIL 323V, Engineering Ethics.....	3
PHYS 301V, Photonics.....	3
PHYS 303V, Energy and Society in the New Millennium.....	3
PHYS 305V, The Search for Water in the Solar System.....	3
PSY 417V, Intercultural Relations.....	3
SOC/ANTH/HIST 330V, Introduction to Religious Studies.....	3
SOC 336V, Sociology of Popular Culture.....	3
SOC 360V, Introduction to Population Studies.....	3
SOC/ANTH 361V, Social Issues in Rural America.....	3
SOC/WS 374V, Comparative Family Systems.....	3
SOC 376V, Social Change.....	3
SOC 394V, Sports and Society: A Global Perspective.....	3
SOC 458V, Comparative Global Family Systems.....	3



SOC 465V, Environmental Sociology.....	3
SPAN 364V, Culture and Civilization of Mexico .....	3
SPAN 365V, Culture and Civilization of Spanish America.....	3
THTR 307, Costume History.....	3
THTR/ENGL 321V, Modern European Drama .....	3
WS/SOC 374V, Comparative Family Systems.....	3
W S/ENGL 380V, Women Writers.....	3
W S 381V/HL S 380V, Women's Health Issues.....	3

**COLLEGE OF BUSINESS**

BLAW 313V, Sports and the Law .....	3
BLAW 385V, Consumers and the Law.....	3
ECON 324V, Developing Nations.....	3
ECON 325V, Economic Development of Latin America .....	3
ECON/MGT 335V, Business and Government.....	3
ECON/AG E 337V, Natural Resource Economics .....	3
ECON/AG E 384V, Water Resource Economics.....	3
ECON 432V, Economics of Health Care .....	3
FIN 303V, Personal Financial Planning and Investing in a Global Economy.....	3
MGT 310V, The Faces of Entrepreneurs.....	3
MGT 315V, Human Relations in Organizations .....	3
MGT/ECON 335V, Business and Government.....	3
MGT 345V, Quality and Competitiveness: An International Perspective.....	3
MGT 360V, Negotiation and Business Conflict Resolution.....	3
MGT 375V, Global Environmental Assessment and Management .....	3
MGT 388V, Leadership and Society.....	3
MKTG 311V, Consumer Behavior .....	3

**COLLEGE OF EDUCATION**

C EP 451V, Introduction to Counseling.....	3
DANC 451V/HON 347V, World Dance.....	3
EDUC 317V, Multicultural Issues in Society .....	3
EMD 350V, Introduction to Educational Leadership in a Global Society.....	3

**COLLEGE OF ENGINEERING**

C E 355V, Technology and the Global Environment.....	3
CH E 395V, Brewing Science and Society.....	3
E T 309V, Manufacturing: History and Technology .....	3
E T 360V, Technology in Business and Society.....	3
I E 310V, Continuous Quality Improvement.....	3

**COLLEGE OF HEALTH AND SOCIAL SERVICES**

HL S 301V, Human Sexuality .....	3
HL S 305V, Global Environmental Health Issues.....	3
HL S 380V/WS 381V, Women's Health Issues.....	3
HL S 464V, Cross-Cultural Aspects of Health .....	3
S WK 331V, Introduction to Social Policy: History .....	3

**UNIVERSITY LIBRARY**

LIB 311V, Information Literacy.....	3
-------------------------------------	---

**HONORS - VIEWING A WIDER WORLD****COLLEGE OF AGRICULTURAL, CONSUMER AND ENVIRONMENTAL SCIENCES**

HON 319V, The Natural World of Thomas Jefferson.....	3
HON 320V, Food and Humanity: World in Crisis.....	3
HON 321V, Agriculture in an Urban World .....	3
HON 323V, Cultural Perspectives on Dress.....	3
HON 430V/AG E 330V/HORT 331V, OASIS: Managing a Community Supported Farm.....	3

**COLLEGE OF ARTS AND SCIENCES**

HON 301V, Mass Media and Society.....	3
HON 304V, Dilemmas of War and Peace .....	3
HON 305V, Global Environment.....	3
HON 306V, Science and Ethics .....	3
HON 307V, The Political World of Women.....	3
HON/ASTR 308V, Into the Final Frontier.....	3
HON 311V, Intercultural Communication .....	3
HON 317V, Cultural Lessons of Nazism.....	3
HON 318V, The World of Cinema.....	3
HON 322V, Science and Public Policy.....	3

HON 324V, Science and the Arts: Theatre and Story.....	3
HON 325V, Contemporary International Literature .....	3
HON 326V, Art and Mythology.....	3
HON 327V, The Novel.....	3
HON/ASTR 330V, Planetary Exploration.....	3
HON 331V, Using a Telescope: Observation, Technology, and Analysis in Astronomical Research.....	3
HON 346V, Perspectives on Violence.....	3
HON 348V, Comparative Mythology: Myth, Ritual and the Life Cycle.....	3
HON 349V, Islam and the West.....	3
HON 350V, Law, Culture, and Conflict.....	3
HON 351V, Interpersonal Relations and the Self.....	3
HON 352V, Crime, Justice, and Society .....	3
HON 353V, Justice without Prejudice.....	3
HON 355V, Sexuality in Christianity and Islam .....	3
HON 364V, Jewish Literature and Culture.....	3
HON 365V, Contemporary African and Caribbean Fiction.....	3
HON 366V, The Gothic Imagination.....	3
HON 370V, Design: The Creative Act.....	3
HON 374V, The European City .....	3
HON 376V, Latin American Women Writers.....	3
HON 377V, Freedom of Speech and the Law .....	3
HON 378V, Technology and Policy.....	3
HON 379V, Literature as Film.....	3
HON 382V, Contemporary Multicultural Women's Literature.....	3
HON 383V, The Sixties: Society, Culture, and Change.....	3
HON 387V, Comparative Perspectives on Women.....	3
HON 388V, Leadership and Society .....	3
HON 392V, Vietnam: America's Longest War .....	3
HON 394V, Southwestern and Border Literature .....	3
HON/MATH 411V, Great Theorems: The Art of Mathematics.....	3

**COLLEGE OF BUSINESS**

HON 335V, Legal Issues in Modern Society .....	3
HON 360V, Working in Teams.....	3
HON 380V, Comparative Economic Systems.....	3
HON 384V, Ethical Decisions in Organizations.....	3
HON 385V, Consumers and the Law.....	3
HON 386V, Women in the Economy.....	3

**COLLEGE OF EDUCATION**

HON 347V/DANC 451V, World Dance.....	3
--------------------------------------	---

**COLLEGE OF HEALTH AND SOCIAL SERVICES**

HON 393V/NURS 383V, Community and Public Service.....	3
---	---

**Alternatives for Meeting Viewing a Wider World Requirements**

Students taking nine or more credits in a specific subject area, even though the courses are not designated as Viewing a Wider World courses, will have met the VWW requirements for that subject area.

The 9 credit hours must be in 300- to 400-level courses in one prefix area. For example, 9 upper-division ECON credits would fulfill one VWW area for students majoring in programs other than Economics.

## MILITARY, VETERANS & FAMILY MEMBERS

**MILITARY AND VETERANS PROGRAMS (MVP)**

NMSU is a military-friendly university and an institutional member of the Servicemembers Opportunity Consortium (SOC). NMSU Military and Veterans Programs promotes lifelong learning and professional development for veterans, active-duty military and their families; assisting them in their higher educational goals by offering:

- Affordable, in-state tuition rates for active-duty military personnel and dependents living at regional military installations
- Affordable, in-state tuition rates for veterans receiving Veterans Affairs education benefits
- Easily transferable credits that count toward degrees at NMSU

- GoArmyEd participation
- Courses taught online and at locations on and near regional military installations
- Innovative technology and course delivery methods
- A tradition of quality education

NMSU degree programs are approved by the State Approving Agency Directory at the New Mexico Higher Education Department. Eligible students may receive education benefits from the U.S. Department of Veterans' Affairs.

#### Responsibility of Veteran Students

Students must be pursuing a degree in a specific program to be eligible for benefits. Admission procedures for veterans and other eligible persons are the same as for all students. Academic advisors must submit degree plans to Military and Veterans Programs prior to certification. For continued verification students must submit the "Semester Certification Request" form and a "Concise Student Schedule" to the MVP office every semester.

Veterans must notify the MVP office when any of the following occurs:

- Dropping or adding course(s)
- Withdrawing from course(s)
- Discontinuing regular class attendance
- Change in programs (academic majors)

VA education benefits are payable for regular attendance in courses that are part of the veteran's program (major) curriculum. VA educational benefits are not payable for:

- Classes not attended regularly
- Repeating a course for which a passing grade was received
- Classes for which credit is received through successful completion of a proficiency test or grade by examination
- Classes taken on an audit basis
- Classes that are dropped
- Classes taken that are not part of the veteran's program (major) curriculum

For further information, contact Military and Veterans Programs at MSC 4740, NMSU, P.O. Box 30001, Las Cruces, NM 88003-8001 or (575) 646-4524. Overview may be viewed at <http://military.nmsu.edu> or <http://nmsu.edu/va>.

#### COSTS

##### Active-Duty

Active-duty military personnel (Armed Forces,) stationed in New Mexico or at Fort Bliss, Texas may complete a "Resident Tuition Application for Active Duty Military" waiver to qualify for in-state tuition. Spouses and minor children of active-duty personnel who are stationed in New Mexico and Fort Bliss, Texas who are not otherwise entitled to claim in-state residency, may apply for in-state tuition by submitting a "Resident Tuition Application for Active-Duty Military" waiver to the NMSU Registrar's Office. Applications are available at the NMSU Registrar's Office or by contacting Military and Veterans Programs at MSC 4740, NMSU, P.O. Box 30001, Las Cruces, NM 88003-8001 or (575) 646-4524.

##### Veterans

Veterans receiving U.S. Department of Veterans Affairs education benefits are eligible for in-state tuition through the Veterans In-State Tuition Act by submitting a "Resident Tuition Application for Veterans of the U.S. Armed Forces" waiver. For further information concerning approved programs and application process, eligible persons should contact Military and Veterans Programs at Garcia Annex, room 141, by phone (575) 646-4524, by email at [va@nmsu.edu](mailto:va@nmsu.edu) or online at <http://nmsu.edu/va>.

Veteran students enrolled under the following programs are responsible for their tuition and fees in the same manner as a nonveteran student:

- Montgomery GI Bill-Active Duty (CH30)
- Dependents (CH35)
- Montgomery GI Bill - Selected Reserve (CH1606)
- Reserve Educational Assistance Program (REAP)
- Post 9/11 (CH33)

Tuition and fees of students enrolled under the Vocational Rehabilitation Program (CH31) will be paid by the U.S. Department of Veterans Affairs under contract with the university.

#### RESOURCES FOR STUDENTS

##### Servicemembers Opportunity Consortium (SOC)

The NMSU system has been designated a Servicemembers Opportunity Consortium university. As a member of SOC, NMSU has committed itself to fully support and comply with SOC principles and criteria, ensuring that servicemembers and their families share in the postsecondary educational opportunities available to other citizens. Those eligible are provided with appropriately accredited educational programs, courses, and services. Flexibility of programs and procedures particularly in admissions, counseling, credit transfer, course articulation, recognition of other applicable learning experiences, including those gained in the military, scheduling, course format and residency requirements are provided to enhance access of servicemembers and their families to undergraduate education programs. All SOC rules and regulations apply, including:

- Credit for military training and experience – NMSU recognizes and uses ACE Guide in evaluating military training experiences
- Reduced academic residency requirements – 25% maximum for most programs; 30% for 100% online programs
- No final year or semester requirement
- Credit for nationally-recognized testing programs such as CLEP (General and Subject exams), DSST (DANTES Standardized Subject Tests)

For further assistance contact the SOC coordinator through Military and Veterans Programs at MSC 4740, NMSU, P.O. Box 30001, Las Cruces, NM 88003-8001 or (575) 646-4524.

#### REGULATIONS

Note: These regulations apply to all campuses of NMSU and are effective with the publication of this catalog. Tuition amounts, fees, and similar items subject to annual review and change are all effective with the current catalog.

##### GoArmyEd

Soldiers must first be admitted to NMSU before they may enroll in any classes at NMSU. Only enrollments verified through the GoArmyEd portal will be eligible for Tuition Assistance (TA). It is the soldier's responsibility to process all class withdrawals through both GoArmyEd and NMSU systems in accordance with institutional policies and procedures. For further information, contact Military and Veterans Programs at MSC 4740, NMSU, P.O. Box 30001, Las Cruces, NM 88003-8001 or (575) 646-4524.

##### Credit For Military Service

New Mexico State University will award academic credit to United States military personnel for courses and Military Occupational Specialties (MOS), based on the American Council of Education Guide (ACE) as well as through national standardized tests, such as CLEP, AP, PEP, and DANTES. Credit for military-training is in accordance with NMSU Faculty Senate Legislation Proposition 24-07/08, which was passed in May 2008. Military Training and Military Occupational Specialties (MOS) must have a recommendation evaluation by ACE (in the ACE Guide) for credit to be awarded. Courses accepted for transfer credit are given an NMSU equivalent and become part of the student's official NMSU transcript and academic record. If a student wishes to appeal a decision regarding the acceptance of military training/education and/or MOS for academic credit, the student must submit a written statement of appeal to the Dean of the College to which the student has applied. The Dean will review the merits of the appeal and render a decision. The decision of the Dean is final.

Only Primary MOS (s) are eligible for academic credit in the initial review and evaluation. Credit for Duty and/or Secondary MOS may be eligible for academic credit if the student petitions the college's Associate Dean. Primary MOS is the primary specialty of a soldier and reflects the broadest and most in-depth scope of military experience. Veterans, active-duty personnel, National Guard and Reservists who are a current student or a student applying for admission to New Mexico State University may be granted academic credit on a case-by-case basis upon evaluation of military transcripts - Sailor/Marine ACE Registry Transcript System (SMARTS), Army/ACE Registry Transcript System (AARTS), Community College of the Air Force (CCAF) and United States Coast Guard transcripts. Course equivalencies and credit hours awarded for a particular NMSU degree are determined by colleges and/or academic departments. Credit hours may be awarded for specific courses toward degree requirement, or as elective credit. The number of credit hours awarded will be determined by the college and/or academic department.

**NOTE:** Students submitting military transcripts for credit evaluation must keep in mind the Maximum Time Frame policy. See FINANCIAL AID section; paragraph FINANCIAL

#### Veterans' Attendance And Satisfactory Progress

The U.S Department of Veterans Affairs requires all veterans receiving VA education benefits to make satisfactory progress and systematic advancement toward an educational objective or be liable for over-payments. Satisfactory progress and regular class attendance are expected of such students.

If a veteran receiving benefits is suspended for academic reasons, benefits are terminated and will be restored only after readmission to NMSU.

If the university has liability claims filed against it as a result of a veteran failing to meet compliance requirements of the U.S Department of Veterans Affairs, the university will not release any academic records on the veteran until such time as the veteran has reimbursed the federal government for funds drawn in violation of those requirements.

A student receiving VA education benefits who is pursuing a degree program offered by New Mexico State University should adhere to the curriculum of that program. Failure to do so will result in the student being certified for less than full-time status or becoming liable for an overpayment.

#### Military Withdrawal

The following steps must be taken by all New Mexico State University students called up for active duty who wish to withdraw from all their classes:

a) Military and Veterans Programs. VA students ordered to Active Duty must provide a copy of orders to the MVP office, Garcia Annex, room 141. To assist in reporting accurate information to the VA Regional Office, student should also provide, in writing, last day of class attendance.

b) NMSU Registrar. All students presenting their orders to the NMSU Registrar's Office, (575) 646-3411, will receive a military withdrawal from classes and a full tuition and fees refund for that semester.

c) Bookstore. Students who still have their receipts for textbooks purchased the semester in which they are called to active duty will be given a full refund for these textbook purchases when they present their orders. (575) 646-4431.

## SPECIAL PROGRAMS

#### Reserve Officer Training Corps (ROTC)

The Reserve Officer Training Corps is a commissioning program designed to attract, motivate, and train qualified students for military service as officers. The ROTC program is represented on the NMSU campus by the Department of Military Science (U.S. Army) and the Department of Aerospace Studies (U.S. Air Force).

Curricula in the Departments of Military Science and Aerospace Studies are divided into basic and advanced courses of two years each. Enrollment in the basic course is voluntary and involves no obligation. Participation in the advanced courses is on a contractual basis and leads to military service as a commissioned officer. Elective academic credit is granted by the university for ROTC classes.

Students with prior military service or Junior ROTC experience may receive credit, although not academic credit, for all or portions of the basic courses.

All qualified cadets enrolled in ROTC receive a stipend that varies dependent upon the year the cadet is in the program. Scholarships, which pay full college tuition as well as various laboratory, textbook, and incidental fees, are available on a competitive basis.

For more detailed information about the ROTC programs, see the College of Arts and Sciences departments of Aerospace Studies and Military Science in this catalog. Additional information may be obtained by contacting the departments directly at (575) 646-4030 (Army) and (575) 646-2136 (Air Force).

## REGULATIONS

*These regulations apply to all campuses of NMSU and are effective with the publication of this catalog. Tuition amounts, fees, and similar items subject to annual review and change are all effective with the current catalog.*

#### University Credits

The unit of university credit is the semester hour, which is the equivalent of one hour of recitation/lecture or a minimum of two hours of practice per week for one semester.

#### Class Rank (Classification)

A student's classification depends upon the number of credits completed toward graduation. Sophomore rank is achieved with successful completion of 28 credits; junior rank, 62 credits; senior rank, 94 credits.

#### Class Load

The normal load in a regular semester is 16 – 18 credits in all colleges of the university. An overload is more than 18 credits. A normal load during the summer term is the same number of credits as there are weeks in the session. Written permission for the student to register for an overload must be obtained from the dean of the student's college. To be eligible to take an overload, the student must have a cumulative grade-point average for the two preceding semesters of 2.5, with no grade less than C. A one-credit course in physical activity may be taken without being included in the calculation for determining an overload. No freshman will be permitted to assume an overload. Students may enroll for non-NMSU courses only upon approval of the dean of their college. Such courses must be counted as part of a student's class load. No more than 30 credits in non-NMSU courses will be accepted toward graduation.

#### Basic Academic Skills

NMSU requires all students to demonstrate basic academic skills in both English and mathematics to ensure that they have the abilities to succeed in upper-division courses numbered 300 or higher. First-time students must meet both of these requirements before enrolling in any upper-division courses. Transfer students with 45 or more credits will be allowed to enroll in upper-division courses for one semester. After that point, they must meet both of these requirements before enrolling in upper-division courses. The options for satisfying basic skills in English and mathematics are listed below.

Completion of basic skills requirements will not necessarily satisfy university general education requirements in English and mathematics. Students should consult the "General Education Courses and Requirements" section in this chapter for these requirements.

#### English Basic Skill Requirement Options

- **30 ACT English Score.** Students may satisfy basic skills requirements in English by scoring 30 or higher on ACT English exams. However, students must still earn credit for ENGL 111G by one of these options:
- **ENGL 111G or ENGL 111GH.** Students may satisfy English basic skills by passing ENGL 111G or ENGL 111GH with a grade of C or higher.
- **CLEP Credit.** Students may earn credit for ENGL 111G or ENGL 111GH by taking the College Level Examination Program subject exam in freshman college composition with a score of 57 (top quartile) or higher. See "Credit by College Level Placement Examination" later in this chapter for details.
- **Advanced Placement Credit.** Students may receive advanced placement credit for ENGL 111G or ENGL 111GH by scoring 3, 4, or 5 on the English Advanced Placement Exam. See "Advanced Placement" later in this chapter for details.
- **Transfer Credits.** Students may receive credit for ENGL 111G by transferring 3 or more credits of college-level English composition, with a grade of C or above from accredited institutions. International students may be required to satisfy the requirements under "SPCD 111G" below.
- **Transfer Credits from Nonaccredited Institutions.** Students may receive credit for ENGL 111G by transferring 3 or more credits of college-level English composition with a grade of C or higher from a nonaccredited institution, and by writing a theme which is judged adequate by the Department of English.
- **SPCD 111G.** International students who took the TOEFL examination must complete SPCD 111G with a satisfactory grade.
- **Developmental Courses.** Students who score 12 or below on the ACT English exam must pass two developmental English courses (CCDE 105N, CCDE 110N) before enrolling in ENGL 111G. Students who score 13 to 15 on the ACT English exam must pass one developmental English course (CCDE 110N) before enrolling in ENGL 111G. Developmental courses are included on the transcript and will be included in the calculation of the GPA; however, credits in developmental courses will not count toward a degree.



### Mathematics Basic Skills Requirement Options

- **23 ACT Mathematics Score.** Students may satisfy basic skills requirements in mathematics by scoring 23 or higher on ACT mathematics exams. However, students must still fulfill the general education math requirement.
- **Coursework.** Students scoring below 23 on ACT mathematics exams may satisfy basic skills in mathematics by earning a grade of C or higher in one of the following courses or course combinations: (a) CCDM 112N and CCDM 113N; (b) CCDM 114N; (c) MATH 111 and MATH 112G; (d) any mathematics course numbered 120 or above. New students are placed in these courses according to their high school GPAs and their ACT scores in mathematics. However, new engineering students must take the mathematics placement exam (MPE), and any new student may choose to take the MPE to test towards a higher placement. Placement does not earn academic credit, and placement in a mathematics course numbered 120 or higher does not satisfy the basic skills requirement.
- **Basic Skills Exam.** Students may take the Basic Skills Exam, which is offered twice a semester by the Department of Mathematical Sciences. A passing score will meet the basic skills requirement, although it will not appear as credit on the student's transcript.
- **Advanced Placement Credit.** Students may receive credit for courses which may satisfy basic skills in mathematics by taking the math Advanced Placement Exam. See "Advanced Placement" later in this chapter for details.
- **Developmental Courses.** Students who score below 23 on the ACT mathematics exam and whose score on the math placement exam, if taken, does not qualify them for placement into university-level mathematics courses will be placed into the appropriate development mathematics course or courses (CCDM). Placement into CCDM course(s) is dependent upon the student's ACT score and high school GPA. Students must pass the CCDM course or courses before enrolling in university-level mathematics courses. Developmental courses are included on the transcript and will be included in the calculation of the GPA; however, credits in developmental courses will not count toward a degree.

### Satisfactory Progress

A full-time student is making satisfactory progress when the cumulative number of credits earned at NMSU, divided by the number of semesters attended at NMSU, equals at least 12. Part-time students must earn a proportional number of credits in the same time period for purposes of financial aid. In the case of new freshmen, this definition will not be applied until the beginning of the third semester of enrollment; however, for all other students, it will apply after one semester of enrollment. All students at the end of their second academic year must have a cumulative 2.0 GPA.

### University Grading System

Grade reports are not automatically mailed to students. Students can access grades and credits by the web using [my.nmsu.edu](http://my.nmsu.edu). It is the responsibility of the student to provide updated grade addresses to the Office of the Registrar. At the request of the student, the instructor will provide information on progress in the course prior to the last day to drop a course.

The NMSU system of grading is expressed in letters, which carry grade points used in calculating the cumulative grade-point average:

	Grade points
Letter grade .....	per unit of credit
A — For excellent work .....	4
B — For better than average work .....	3
C — For average work .....	2
D — For below average work .....	1
F — For failing work .....	0
W — Withdrawal .....	0
N — Grade not submitted .....	0
CR — Credit authorized, but not letter grade .....	0
IP — In progress .....	0
RR — Progress in undergraduate course .....	0
PR — Progress on graduate thesis .....	0
S* — Satisfactory work .....	0
U — Unsatisfactory work .....	0
I — Incomplete .....	0
AU — Audit .....	0

\*An *S* grade is a grade satisfactory to the professor and is normally equivalent to the letter grade of C or higher.

In computing the overall grade-point average, the total credits in which grades of A, B, C, D, or F have been assigned is divided into the total number of grade points earned.

A course for which only CR, but no letter grade, is given and a course in which an S or PR grade is earned will be included in earned hours but is not computed in the grade-point average.

### Prerequisite

A prerequisite is an enforceable entry requirement for a particular course. Students must have successfully completed the prerequisite before enrolling in the subsequent course.

### Repeating Courses

A student may repeat a course in which a D or F grade has been earned at this university. A computable grade (excluding I, W, RR, AU, CR, S, or U) in a repeated course may be substituted in the calculation of the grade-point average, though the original grade also remains on the transcript. The first occurrence with a C or better grade will count in earned hours. Future attempts will not count in earned hours. If a student repeats a course eligible for grade substitution in which they have earned a D and then fails the course, the second grade of F will not be substituted for the original grade.

Neither credits nor grade points may be earned by repeating a course for which a grade of C or higher has already been received.

### Incomplete Grade

The grade of I (incomplete) is given for passable work that could not be completed due to circumstances beyond the student's control. The following regulations apply to removing or changing an I grade.

- 1) Instructors may assign I grades only if the student is unable to complete the course due to circumstances beyond the student's control that develop after the last day to withdraw from the course. Examples of appropriate circumstances include documented illness, documented death or crisis in the student's immediate family, and similar circumstances. Job related circumstances are generally not appropriate grounds for assigning an I grade. In no case is an I grade to be used to avoid the assigning of D, F, U, or RR grades for marginal or failing work.
- 2) To assign an I grade, the instructor must complete the I Grade Information Form and have the form delivered to the course dean, together with the instructor's grade sheets for the semester. The instructor will state in writing on the I Grade Information Form the steps necessary to complete the remaining coursework or the instructor may indicate that the student will be required to re-enroll in the course to receive credit (in which case the I grade will not be removed). The student will sign this document or the course dean will send a copy of the document to the student's official permanent address as recorded in the Registrar's Office.
- 3) The student is entitled to have the I grade removed from their transcript only if they complete the remaining coursework as specified on the I Grade Information Form, in a manner satisfactory to the instructor. The work must be completed within 12 months after the I grade is assigned and prior to the student's graduation, or within a shorter period of time if specified by the instructor on the I Grade Information Form. If the student fails to complete the coursework, the instructor may change the I grade to any appropriate grade (including D, F, or U) provided that the instructor stated that this would occur on the I Grade Information Form.
- 4) I grades can be removed from the student's transcript by the instructor only during the 12-month period following assignment of the I grade or prior to the student's graduation, whichever comes first. To remove an I grade, the instructor must complete a Change of Grade Form and file the form with the Registrar. The instructor may assign whatever grade is appropriate for the entire course. This may include grades of D, F, or U. An I grade not changed by the assigning instructor within 12 months and prior to graduation shall remain an I grade thereafter.
- 5) A student may re-enroll and receive credit for any course for which an I grade was previously received, but retaking the course will not result in a removal of the I grade from the student's transcript.

The effect of removing an I grade on a student's academic standing (scholastic warning, probation, or suspension) depends on the date the transaction is officially recorded on the student's academic record. If the transaction is recorded before the student begins another semester, the grade replacing the I

is included in the grade-point average calculation that establishes the student's academic standing. If the transaction is recorded after the student begins another semester, the new grade's effect on academic standing is based upon its inclusion with grades for the semester in which the student is enrolled.

#### **RR Grade**

The *RR* grade applies only to designated skill development undergraduate courses approved by the University Curriculum Committee and indicates the student has made substantial progress toward completing the requirements of the course. It carries neither penalty nor credit. The student must re-enroll and successfully complete the course in order to earn credit. The grade of *RR* may be received only once in any given course, and it remains on the student's transcript.

#### **S/U Option**

Students with 28 credits at NMSU under traditional grading, with an overall average of 2.5 or better, may exercise the *S/U* option. The following limitations apply:

- 1) No more than 7 credits per semester or 4 credits per summer session.
- 2) Not to exceed a total of 21 semester credits.

These limitations do not apply to honors and courses officially designated *S/U*.

Each course under this option must be requested during registration. Eligibility must be determined by the student's academic dean and certified by the student. The course must be taken outside the major. If the student changes majors, the new major department may require a traditional grade for a course previously passed with an *S* grade. The traditional grade change is made by the instructor or by a course challenge if the original instructor is no longer with the university.

Eligibility for *S/U* grading must be re-established after adjusted credit has been approved.

Nondegree students who do not meet the above requirements may take courses under the *S/U* option. However, these courses may not be applied toward an undergraduate degree at NMSU.

Graduate students in regular standing may take courses for the *S/U* option, outside the major department, under regulations stated in the Graduate Catalog.

Each academic college of the university may designate courses in which the grading will be on a basis of *S* or *U* for all students enrolled in the courses. Credits in such courses are not included in the 21-credit limitation or the 7-credit-per-semester limit.

#### **Grade Point Average**

A student's NMSU semester and cumulative GPAs will be based solely on courses taken at NMSU or under an approved National Student Exchange.

#### **Independent Studies**

Independent study courses (including directed reading and special topics courses which do not carry a subtitle) are for students capable of self-direction who meet the requirements for the *S/U* option, i.e., if the students are not eligible for the *S/U* option, they are not eligible for independent study. Each college determines the maximum number of credits that may be earned in independent study courses.

#### **Adjusted Credit Option**

The adjusted credit option allows students who obtain a low grade-point average (less than 2.0 cumulative) during their first few semesters to get a fresh start. This option may be used only once and is not reversible. All courses carrying a grade of *S*, *CR*, *C*, or better earned prior to the grading period in which the student requests the adjusted credit option (including transfer courses) are included as adjusted credit. All allowable credits are designated on the permanent academic record as "adjusted credit" and are omitted from the calculations of the cumulative grade-point average.

A fee of \$10 is required for the submission of an adjusted credit option application. Application forms are available in the offices of the academic deans. Students applying for this option must

- 1) not hold a baccalaureate degree;
- 2) be currently enrolled as a regular/nondegree undergraduate student;
- 3) have a cumulative grade-point average of less than 2.0 at NMSU;
- 4) have successfully accumulated fewer than 60 transfer plus NMSU credits;
- 5) exercise the option only during the fall or spring semester before the last day to withdraw from the university; and

- 6) pass an additional 30 graded credits before they may be awarded an associate's degree.

Other courses taken during the period of credit adjustment are not calculated in the cumulative grade-point average. The repeat rule for courses starts anew for students who have taken the adjusted credit option.

Credits covered by this option are shown on the transcript with an appropriate notation, and all coursework attempted is shown. In no circumstances will a transcript of this record be issued that does not include all courses attempted at this university.

Probationary status and eligibility for on-campus employment is not affected by the exercise of the adjusted credit option.

Students are eligible for university honors if the criteria for university honors are met for all courses taken at NMSU after the period of adjusted credit.

#### **Transfer Credits**

For the policy on transfer credits see "Transfer of Credits at NMSU" earlier in this chapter.

#### **National Student Exchange (NSE)**

For the policy on transfer credit for courses taken in the National Student Exchange program, see this heading earlier in this chapter.

#### **Credit by College Level Examination Program (CLEP)**

Prior to or during a student's enrollment at NMSU, credits may be earned through the College Level Examination Program (CLEP) of the College Entrance Examination Board. CLEP is a national program of credit by examination that offers the opportunity to earn credits for college level achievement wherever or however the student learned.

Earned CLEP credit will be treated as transfer credit without a grade, will count toward graduation, and may be used in fulfilling specific curriculum requirements.

A current NMSU CLEP policy as well as test schedule information is available through Testing Services DACC East Mesa, room 210. Testing Services may be reached at (575) 528-7294.

#### **Advanced Placement**

Students who have completed college-level courses in secondary schools and have taken the Advanced Placement Examinations of the College Examination Board with resulting composite scores of 3, 4, or 5 may receive college level credit. The amount of credit and the equivalent university courses for which credit will be granted will be determined by the head of the department in which the course is offered. Such credit will be treated as transfer credit without a grade, will count toward graduation, and may be used in fulfilling specific curriculum requirements.

#### **Credit for Military Service**

Special provisions consistent with NMSU Senate and Faculty legislation 24-07/08 and the American Council on Education (ACE) - see section Military/Veterans and Family Members.

#### **Credit by Examination**

Any enrolled student with a cumulative GPA of at least 2.0 currently attending classes may, with permission of the appropriate department, challenge by examination any undergraduate course in which credit has not been previously earned except an independent study, research or reading course, or any foreign language course that precedes the final course in the lower-division sequence. The manner of administering the examination and granting permission shall be determined by the department in which the course is being challenged.

Students may not enroll in a single course, challenge it by examination, and drop it during the drop/add period, unless they enroll in an additional course.

In exceptional cases in which a student demonstrates outstanding ability in a course in which he is already registered, he may be permitted to challenge the course.

A student desiring to apply for special examination may obtain the necessary forms from the Office of the Registrar. The fee for challenging a course is the same as the approved tuition rate.

Courses may not be challenged under the *S/U* option.

The special examination privilege is based on the principle that the student, exclusively, has the responsibility for preparing for a special examination.

#### **Audits**

A regularly enrolled student may register for any course prior to the last day of registration as an auditor without credit with the consent of instructor,

provided the facilities are not required for regular students. The tuition and fees are the same as for credit courses. Audit courses are not considered in determining the maximum load except for students on probation and graduate students. A student may not change from credit to audit after the last day to register but may withdraw and continue to attend with the permission of the instructor.

#### Changes in Registration

Registration changes may be processed only in accordance with university regulations and with appropriate signatures. It is the responsibility of the student to initiate official withdrawal from a course.

Forms are available from the academic advisor or in the deans' offices. Courses may not be added or dropped after the cutoff date indicated in the university calendar. For refund policy, see the "Costs" section of the catalog.

When a student officially drops a course, the *W* grade is assigned as follows:

- 1) No grade is assigned during the registration period.
- 2) A *W* grade is assigned to any student who officially drops a course during the first half of its duration. A student may not officially withdraw from a course after this time.
- 3) A grade of *W* is assigned in all courses to any student officially withdrawing from the university prior to the last three weeks of classes.

A student found insufficiently prepared to carry a regular course may be transferred to a more elementary course in the same field any day before the last day to officially withdraw from an individual course.

Any person attending under Veterans Educational Assistance must notify the Office of Veterans' Programs if dropping or adding courses changes enrollment status for benefits.

#### Withdrawal from NMSU

Withdrawal from any NMSU campus is an official procedure that must be approved as indicated on the withdrawal form. All such withdrawals will be registered on the student's transcript. It is the student's responsibility to initiate withdrawal from the university and to obtain necessary signatures. Students who leave without following the official procedure are graded appropriately by the instructor. On the Las Cruces campus, withdrawal begins at the Registrar's Office. At all other campuses, withdrawal begins at the Student Services Office. Applicable dates are published in the university calendar for all regular sessions.

#### Medical Withdrawal

A medical withdrawal applies to a student who becomes seriously ill, injured, or hospitalized and is therefore unable to complete an academic term for which they are enrolled. Based on the physician's information, a determination will be made if the student is eligible for consideration of tuition or other refunds. On the Las Cruces campus, medical withdrawal begins at the Registrar's Office. At all other campuses, medical withdrawal begins at the Student Services Office.

#### Attendance and Student Performance

Students are expected to attend regularly all classes for which they are registered. Students making satisfactory progress in their classes will be excused from classes when they are representing NMSU on a university sponsored event (e.g. ASNMSU president representing NMSU at legislative session, student athletes competing in NMSU scheduled athletic events, or students attending educational field trips and conferences). Authorized absences do not relieve the student of their class responsibilities. Prior written notice of the authorized absence will be provided to the instructor by the sponsoring department. Specific class attendance requirements are determined by the instructor of the course.

When the number of absences hinders a student's progress in a course, the instructor may initiate a statement of the student's excessive absences including a recommendation of retention or expulsion from the class. Based on the recommendation of the instructor and with the concurrence of the course department head and the student's academic dean, a student will be dropped for persistent absences or for persistent failure to complete assignments. Similarly, a student may also be dropped from a class for engaging in behavior that interferes with the educational environment of the class. Any student who has been dropped from a class shall have the right to appeal that decision through the Student Academic Grievance Policy.

Only enrolled students, for credit or for audit, are permitted to attend classes. A student who has officially withdrawn from a course may continue to attend the course with the permission of the instructor for the remainder of the semester.

Students not enrolled may visit classes only with the permission of the instructor.

#### Administrative Withdrawals

When an administrative withdrawal from a course is initiated for a student who is representing the university at an official out-of-town event, the withdrawal will become effective upon the return of the student to the university from that event or five class days after the signed drop slip arrives in the dean's office, whichever is sooner.

#### Nondegree Status

See "Nondegree Admission," earlier in this chapter.

#### Military Withdrawal

For special provisions consistent for military personnel, see the section Military, Veterans and Family Members.

#### Privacy Rights

The following information has been designated as directory information and is subject to release to the public under the Buckley Amendment (PL 98-380), "The Family Educational Rights and Privacy Act of 1974": Student's name, address, email address, telephone listing, date and place of birth, major field of study, classification, participation in officially recognized activities and sports, weight and height of members of athletic teams, dates of attendance, degrees and awards received, and the most recent, previous educational agency or institution attended by the student.

Other information regarding disclosure of student data is posted at the Office of the Registrar in compliance with the Act.

Requests for withholding directory information must be filed in writing with the Office of the Registrar.

#### Social Security Numbers in Student Records

As required by law, social security numbers are collected from prospective and current students who 1) plan to seek employment on campus or 2) wish to receive financial aid. In addition, the university is mandated by federal tax regulations to provide tuition and fee payment information to the student and the Internal Revenue Service, so that applicable educational tax credits may be computed. The social security number will be necessary to submit this tax reporting. The social security number is a confidential record and is maintained as such by the university in accordance with the Family Educational Rights and Privacy Act.

#### OUTCOMES ASSESSMENT - Evaluating Your Academic Experience

New Mexico State University is committed to providing its students with a quality education and a supportive learning environment. Assessment is a process of rigorous review followed by implementation of changes to enhance and improve the quality of education students receive at NMSU. For assessment to be effective, students must be actively aware of, and engaged in, assessment activities. Faculty and staff at NMSU will communicate to students the value and implications of assessment. For their part, students will provide feedback on personal, professional and academic development. Students are expected to participate in all types of assessment when asked to do so. Types of assessment activities include class assignments, course projects, exams, exit interviews, standardized tests, surveys, focus groups, etc. Data gathered through these assessments will be published only in aggregate form. Efforts will be made to inform students of assessment results and the program improvements implemented as a result of assessment.

#### Academic Appeals

Procedure for Initiating Grievance Complaints: This procedure has been established to provide a method to resolve undergraduate student grievances at the lowest administrative level in a fair and expeditious manner. For the purpose of this procedure, grievances are limited to alleged violations of university policy or procedures by the university or its employees, disputes with faculty and/or alleged unfair treatment. Usually this method is used to appeal a grade the student feels was not justified. Under no condition should these policies be used when the student has allegedly violated the University Code of Conduct or a contractual agreement, and at no hearing should either party have a lawyer. Any student who believes that he/she has been unjustly treated within the academic process may proceed as far as necessary in the steps detailed below. Should the alleged grievance not involve a faculty member or course, the student is to appeal directly to the department head or associate dean for academics in whose area or college the alleged grievance occurred.

- 1) Appeal to the faculty member: The student is to submit a written appeal to the faculty member within 30 days after the start of the semester following the semester in which the alleged grievance occurred. Semester in this case refers to fall and spring only. If the alleged grievance occurs

during the summer session, the student is to submit an appeal no later than 30 days into the fall semester following the summer session in which the alleged grievance occurred. The faculty member and the student are to discuss the problem. The faculty member will submit a written report outlining his or her decision to the student and department head or appropriate unit designee within ten working days of receipt of the student's written appeal.

- 2) Appeal to the department head or appropriate unit designee: If a decision satisfactory to the student cannot be reached, the student may submit a written appeal to the department head or appropriate unit designee in which the course in question is taught. This is to be done within ten days of the receipt of the faculty member's written decision. The faculty member, the department head or appropriate unit designee, and the student are to meet to discuss the problem. The department head or appropriate unit designee will send a written response outlining his or her decision to the student and faculty member within ten days of this meeting.
- 3) Appeals to the associate dean for academics or associate dean of the library: If a satisfactory decision cannot be reached among the department head or appropriate unit designee, the faculty member, and the student, the student or the faculty member may submit a written state of appeal to the associate dean for academics of the college in which the course was taught. This is to be done within ten working days after the receipt of the written decision by the department head. The associate dean may request a written recommendation from an Academic Appeals Board. Should this be the case, the Academic Appeals Board will conduct a hearing with the student and faculty member (not necessarily at the same time) to review the merits of the appeal. They may also ask for supporting evidence for or against the appeal. The Academic Appeals Board will submit the written recommendation to the associate dean within five working days following the conclusion of their process. The associate dean may meet with the student, faculty member, and department head to discuss the appeal (not necessarily at the same time). The associate dean will submit a written response outlining his or her decision to the student, faculty member, department head, and dean within ten days of the last meeting.
- 4) Appeals to the dean: The dean of the college or library in which the course is taught or in whose college the alleged grievance occurred may, at his or her discretion, review the appeal upon the written request of the student or faculty member and render a final decision. An appeal to the dean is the last step in the appeals process and the dean's decision cannot be appealed further. Should the dean not choose to review the appeal, the decision of the associate dean for academics or associate dean of the library is final.
- 5) Exceptions to the time involved: The associate dean for academics or associate dean of the library may waive the normal time frame for appeals for compelling reasons. Regardless of circumstances, academic appeals must be initiated with the course instructor within two years of the conclusion of the semester or summer session in which the course was taken.
- 6) Enrollment: A student need not be enrolled at the university to initiate an appeal.

#### **Academic Appeals Board:**

Within each college of the university or the library an academic appeals board will be appointed by the associate dean for academics to hear student appeals. The appeals board will consist of three faculty members and two students.

#### **Maintenance of Records:**

Instructors and/or departments shall keep records used to compute individual grades for two years after the completion of a course. If a grade has been appealed, these records shall be kept for at least two years after completion of the appeal. Departments, colleges, or library may require that records be kept for longer periods.

#### **Academic Misconduct**

Students at NMSU are expected to observe and maintain the highest academic, ethical, and professional standards of conduct. Any student found guilty of academic misconduct shall be subject to disciplinary action. Academic misconduct includes, but is not limited to, the following actions:

- 1) Cheating or knowingly assisting another student in committing an act of cheating or other forms of academic dishonesty;
- 2) Plagiarism, which includes, but is not necessarily limited to, submitting examinations, themes, reports, drawings, laboratory notes, undocumented quotations, computer-processed materials, or other material as one's own work when such work has been prepared by another person or copied from another person;
- 3) Unauthorized possession of examinations, reserve library materials, or laboratory materials;
- 4) Unauthorized changing of grades on an examination, in an instructor's grade book, or on a grade report; or unauthorized access to academic computer records;
- 5) Nondisclosure or misrepresentation in filling out applications or other university records in, or for, academic departments or colleges.

#### **ACADEMIC STANDING**

Please see section on incomplete, I, grades to determine the effect of removal of I grades on academic standing.

**Academic Warning, Probation and Suspension:** When students do not maintain adequate academic standing, they begin a progress of Academic Warning to Academic Probation I and II, and finally to Academic Suspension. Each stage imposes more structure and limitations on the student in order to help them return to normal academic standing. The intent is not to punish, but to help the student return to normal academic standing and success. Since some of these limitations involve limitations on the number of credit hours, students on Probation or Suspension may be subject to loss of financial aid. It is the responsibility of the student to determine the impact of their changed academic standing on their financial aid. Notification to students of academic warning, probation, or suspension appears on the student's grade report at the end of each grading period.

**Academic Warning:** Issued only once, the first time a student's cumulative GPA falls below a 2.0 while in good academic standing. The relevant associate dean for academics or campus academic officer will send the student a letter detailing the consequences should the cumulative grade point remain below a 2.0 at the conclusion of the semester. A student on Academic Warning remains eligible for all extracurricular activities as governed by the rules of the specific activity.

#### **While under Academic Warning the following restrictions apply:**

1. The student may be required to enroll in a 3-hour special study skills/time management course specifically designed for students on Academic Warning for the first time, or an equivalent approved by the appropriate associate dean or CAO of their campus.
2. Students will be required to enter into a contract with their advisor, approved by their department head that place further stipulations on Academic Warning. The contract may include, but is not limited to the following:
  - The student may be required to take at least one repeat course to try to greatly improve the GPA.
  - Except for the special study skills/time management course, the student's coursework may be restricted to the major.
  - The student may be required to get tutoring help.
  - The student may be required to see an academic counselor on a specified time schedule.
  - The number of hours a student may register for may be restricted (due to extenuating circumstances such as the student's workload commitments).

The associate dean or CAO may place the student on Academic Probation I should the student not adhere to the stipulations of the contract.

If the student's semester GPA is less than a 2.0, and the cumulative GPA remains below a 2.0 at the end of the semester on Academic Warning, the student is placed on Academic Probation I. If the semester GPA is greater than 2.0 but the cumulative GPA is still less than 2.0, the student will remain on Academic Warning. If the cumulative GPA is greater than a 2.0 at the end of the semester then the student is returned to good academic standing.

#### **Summer Courses:**

A student may use summer classes to try to get warning or probationary status removed. Under no circumstances may a student on Academic Warning or Academic Probation be allowed to register for an overload.



Academic warning status is continued if the student withdraws from the university.

Probation or suspension status applies to all subsequent enrollments.

#### **Academic Probation.**

There are two stages in Academic Probation.

**Academic Probation I:** This occurs when a student under Academic Warning has a semester GPA less than 2.0, and the cumulative GPA remains below 2.0 at the conclusion of the semester or if the student maintains a semester GPA greater than 2.0 while on Academic Probation I but the cumulative GPA is still less than 2.0.

Under Academic Probation I the following conditions apply:

1. The student cannot enroll in more than 13 hours of coursework during the semester. Note: Students falling below 12 credits in any one semester will jeopardize their financial aid. Should this occur, students should see the associate dean in their college as soon as possible to try to implement corrective measures.
2. The student will enter into a contract or individualized education plan with their advisor and approved by the associate dean or CAO that place further stipulations on Academic Probation I. The associate dean or CAO may place the student on Academic Probation II or Academic Suspension should the student not adhere to the stipulations of the contract.
3. Students on Academic Probation receiving educational benefits from the Veterans' Administration must obtain counseling from the Office of Veterans' Programs.

The student must maintain a semester GPA equal to or greater than 2.0 until such time that the cumulative GPA is greater than 2.0 at which time the student goes back to good academic standing. Until the latter happens the student remains on Academic Probation I. The student will be placed on Academic Probation II if unable to maintain a 2.0 semester GPA, and the cumulative remains below a 2.0 GPA, while under Academic Probation I. A student on Academic Probation I remains eligible for all extracurricular activities as governed by the rules of the specific activity.

**Academic Probation II:** Issued when a student falls below a semester 2.0 GPA, and the cumulative remains below a 2.0 GPA, while on Academic Probation I. Or, if the student maintains a semester GPA greater than 2.0 while on Academic Probation II but the cumulative GPA is still less than 2.0.

1. The student cannot enroll in more than 7 hours of coursework during the semester.
2. As with rule 2 under Academic Warning and Academic Probation I and at the discretion of the associate dean or CAO, the student will be required to enter into a contract with their advisor, and approved by the associate dean or CAO, to place further stipulations on Academic Probation II.

The associate dean or CAO may place the student on Academic Suspension should the student not adhere to the stipulations of the contract.

The student must maintain a semester 2.0 GPA or higher until the cumulative GPA reaches a 2.0 or higher at which time they are placed on good academic standing. A student unable to maintain a semester GPA of 2.0 or higher, and the cumulative remains below 2.0 GPA, while under Probation II will be placed on Suspension. A student on Academic Probation II remains eligible for all extracurricular activities as governed by the rules of the specific activity.

#### **Transfer students.**

Students admitted under special provisions whose transcripts indicate less than a 2.0 GPA are admitted on Academic Probation I.

#### **Continuing in probationary status.**

Students may continue to enroll while on Academic Probation I or II provided they maintain a semester GPA of 2.0 or higher. They are continued on that same level of Academic Probation if they withdraw from the university while on Academic Probation.

#### **Removal of Academic Probation.**

Such academic standing is removed when the cumulative GPA is raised to 2.0 or higher, with the following exceptions: (1) a transfer student may not remove probation by summer work alone; (2) if an F grade is removed after the student has enrolled, the new grade's effect on academic standing is based on its inclusion with grades for the term for which the student is enrolled; (3) exercise of the Adjusted Credit Option does not change academic status until subsequent grades are earned.

#### **Academic Suspension.**

When a student does not achieve a semester 2.0 GPA or higher, and the cumulative remains below a 2.0 while under Academic Probation II, they are placed on Academic Suspension. Students under Academic Suspension are not allowed to take NMSU courses while under suspension. Students on Academic Suspension must sit out a minimum of 1 semester and then petition the Provost or designee to be removed from Academic Suspension. At this time the suspension status will be evaluated for possible removal. Should the suspension be lifted, the student is placed on Academic Probation II until such time that the cumulative GPA equals or exceeds a 2.0. At the discretion of the Provost or designee, the student will enter into a contract approved by the Provost or designee and the student's Dean or CAO setting stipulations to have the suspension removed. Failure to adhere to the contract will return the student to Academic Suspension.

Under certain conditions, a student may be re-admitted at NMSU under regular status while under Academic Suspension when satisfactory progress has been demonstrated at another college or university (see pg. 2, Undergraduate Catalog). Credits earned at another university or college while under Academic Suspension from NMSU or another university or college, will be accepted at NMSU only after the student demonstrates satisfactory progress over a period of two semesters after being re-admitted or admitted to NMSU. Acceptance of transfer credits that count toward degree requirements is still governed by the rules established by the student's respective college or campus.

#### **Effect of summer attendance**

Students suspended at the close of the spring semester may have their Academic Suspension rescinded if they attend summer session at NMSU or one of its Community College colleges. Such attendance must raise the combined spring semester and summer GPA to 2.0 or better.

A certification of eligibility to attend summer session at NMSU after a spring semester Academic Suspension is available to the suspended student who wishes to attend summer sessions at other institutions.

#### **Disciplinary Probation and Suspension**

NMSU expects all students to regard themselves as responsible citizens on campus and in the community.

Repeated misconduct and major violations will cause the student to be subject to immediate suspension or expulsion from the university.

The general rules and regulations applicable to students are in the "Student Code of Conduct" of the Student Handbook or can be obtained from the Scheduling and Information Desk in Corbett Center.

#### **Undergraduate Enrollment in Graduate Courses**

Undergraduates who wish to enroll in a graduate-level course numbered 500 or higher for undergraduate credit must secure prior written permission from the instructor and course dean. Enrollment is by petition only and is limited to outstanding juniors and seniors.

#### **Graduate Study by University Seniors**

A student who is in the final semester of a bachelor's degree program and who is completing all requirements for graduation may take up to 6 credits of graduate-level courses numbered from 450 through 598 for credit toward an advanced degree.

The student must also:

- (1) File an Application for Admission to Graduate Student Services and be admitted by a department into a graduate program
- (2) Have a grade-point average of 3.0 or better over the most recent semesters in which the last 45 semester hours were completed
- (3) File a petition for each course by the deadline to add courses for the semester in which the course was taken
- (4) Obtain approval by the instructor, department head, and undergraduate dean

The combined total of graduate and undergraduate courses for the semester may not exceed 17 credits. Students should consult an admission representative at the Graduate Student Services.

If the student is not admitted into a graduate program, the course(s) will remain separate from the undergraduate record. If the student is admitted into a graduate program, the course(s) will become part of the graduate record and will not be used in the calculation of the student's undergraduate grade-point average or credit hours.

**Program/Degree Requirements**

NMSU offers a number of degrees and certificates. Those awarded and requirements are given in the college sections. For graduation with a bachelor's degree, a student must meet all of the criteria for the major elected. The requirements listed are the minimum for the degree; students are encouraged to undertake more extensive and broadening courses of study.

**Student Responsibility**

The ultimate responsibility for planning an academic program in compliance with university, college, and departmental requirements rests with the student. In addition, the student bears ultimate responsibility for understanding all matters of the Undergraduate Catalog.

**ACADEMIC MAJORS AND MINORS****Academic Majors**

A major is required for all baccalaureate degrees, except the Bachelor of Applied Studies and the Bachelor of Individualized Studies, and consists of at least 24 credits in the major field of which at least 18 credits must be upper-division courses.

**Academic Minors**

Students seeking a baccalaureate degree may elect to complete one or more minors from those available, and the minor will be designated on their transcripts. Minors cannot be earned after the degree has been conferred.

A minor consists of a minimum of 18 credits, at least 9 of which must be upper-division. The minor may be in a single department or may be interdepartmental. Specific requirements for these minors are available in printed form in departmental and deans' offices. Specific available minors follow.

**College Of Agricultural, Consumer And Environmental Sciences**

Agricultural Business Management  
Agricultural and Extension Education  
Agricultural and Natural Resource Leadership  
Agronomy  
Conservation Ecology  
Clothing, Textiles, and Fashion Merchandising  
Culinary Science  
Entomology  
Environmental Science  
Family and Child Science  
Family and Consumer Science Education  
Food Science  
Horse Management  
Horticulture  
Hotel, Restaurant, and Tourism Management  
Livestock Production  
Nutrition  
Pest Management  
Plant Pathology  
Range Science  
Soil Science  
Turfgrass Management  
Weed Science

**College of Arts and Sciences**

American Government and Politics  
Aerospace Studies  
Algorithm Theory  
American Indian Studies  
Animation and Visual Effects  
Anthropology  
Art  
Art History  
Astronomy  
Biochemistry  
Bioinformatics  
Biology  
Chemistry  
City and Regional Planning  
Communication and National Security  
Communication Studies  
Comparative Government  
Comparative Politics  
Computational Physics  
Computer Systems  
Conservation Ecology  
Contemporary Social Studies  
Creative Writing  
Digital Film Making  
Economics  
English

Environmental Chemistry  
Ethics  
Forensic Science  
French  
General Physics  
Geography  
Geology  
German  
GIS (Geographic Information Systems)  
Global Political Economy  
Geophysics  
Government  
History  
Human Biology  
International Relations  
Journalism and Mass Communications  
Linguistics  
Literature  
Mathematics  
Medieval and Early Modern Studies  
Microbiology  
Military Science  
Museum Conservation  
Music  
Native American Studies  
Natural Resource Economics  
Philosophy  
Physics/Materials  
Physics/Optics  
Political Theory  
Psychology  
Public Administration  
Public Law  
Religious Studies  
Rhetoric and Professional Communication  
Security Technology and Intelligence Studies  
Sociology  
Software Development  
Spanish  
Theatre Arts  
United States/Border Studies  
Women's Studies

**College of Business**

Accounting  
Advertising  
Banking  
Business Administration  
Economics  
Finance  
Global Political Economy  
Information Systems  
Intelligence Studies  
International Business  
Management  
Marketing  
Risk Management and Insurance  
Sports Marketing

**College of Education**

Counseling and Educational Psychology  
Dance  
Early Childhood Education  
Exercise Science

**College of Engineering**

Aerospace Engineering  
Agricultural Engineering  
Computer Engineering  
Digital Electronic Applications  
Electrical Engineering  
Environmental Management  
Information Technologies  
Manufacturing  
Mechanical Engineering  
Nuclear Energy  
Renewable Energy Technologies  
Security Technology  
Surveying Engineering

**College of Health and Social Services**

Community Health  
Gerontology  
U.S.-Mexico Border Health Issues

## GRADUATION REQUIREMENTS

For the baccalaureate degree each student must complete a minimum of 128 credits including at least 48 credits numbered 300 or above. Program waivers require the approval of the Academic Deans' Council.

Each college has its own requirements for graduation listed under its curricula. However, there are certain graduation requirements common to all undergraduate colleges:

- A student must have a cumulative GPA of 2.0 in all courses taken at NMSU.
- The student will be required to show proficiency in written English in all class work of the university. Any instructor may remand a student to the English remedial laboratory for further training in written English. In each case, the student must complete the remedial laboratory work prior to submitting the application to graduate.
- Each student must complete at NMSU at least 30 of the last 36 credits necessary for the baccalaureate degree. Of these 36 credits, 21 credits must be upper division and at least 12 of these upper division credits must be in the major. Colleges or Departments may require that more than 12 of the upper division credits be from the major, and they may direct that certain of these credits be course specific.
- Curricular requirements for a specific degree may be met by completing all of the course requirements for that degree as set forth in the catalog of matriculation provided that the selected catalog is not more than six years old when the requirements for graduation are met. This rule applies only to the course requirements and number of credits as specified for the degree. In all other cases, the current catalog is effective.

The catalog is effective Summer Session I through Spring Semester.

Special provisions consistent with the NMSU Servicemembers Opportunity College (SOC) and other agreements apply for active military and veterans-see section Military/Veterans and Family Members.

Upon completion of all requirements, multiple majors for a single degree (e.g., B.A.) will be noted on the academic record. Multiple bachelor's degrees (e.g., B.A. and B.S.) may be granted if all requirements for the degrees have been completed. Multiple degrees may be granted at one commencement if all requirements have been met. Graduation fees must be paid for each degree.

Both designated and undesignated associate degree residency requirements vary with the college awarding the degree. Requirements for the two-year associate degrees and for the certificates are found in the section(s) concerning these degrees.

- Arts and Sciences, Business Administration, Education, and Health and Social Services require that the last 15 credits be completed at NMSU or one of its Community College campuses.
- College Of Agricultural, Consumer And Environmental Sciences requires that the last 30 credits be completed at NMSU or one of its Community College campuses.

### Filing Notice of Degree Candidacy

Degree candidates are required to file an Application for Degree and pay graduation fees for each degree sought. This fee (\$10 for one-year certificates, \$25 for associate or bachelor's, and \$35 for graduate degrees) will be included in the total cost for the semester or session in which the candidate anticipates completing degree requirements. If degree requirements are not completed during the semester or session, the student must reapply and pay the appropriate fees. The Application for Degree form is available online at <http://www.nmsu.edu/~registra/>, and the student's advising center/Dean's Office. It must be completed and submitted to the Office of the Registrar by the deadline for the

semester/session. A \$25 late fee applies to applications received after the first day of class, and no applications will be accepted after midterm.

A student must specify choice of catalog as indicated under "Graduation Requirements."

Latest date for substitution or waiver of required courses for candidates for degrees is two weeks after the last date of registration for regular or summer terms.

All fees and bills owed the university must be paid before a student may receive a diploma or transcript of credits.

### Graduation with Honors

The requirements for four-year degrees with honors are listed in the "Recognition of Academic Achievement" section.

### Crimson Scholar Graduates

The requirements for designation as a Crimson Scholar graduate are listed in the "Recognition of Academic Achievement" section.

### Attendance at Commencement

The registrar confirms eligibility to participate in commencement exercises held at the close of the fall and spring semesters. Eligible candidates (registered for final degree requirements, as certified by the college deans) and degree recipients from the previous summer session participate in the fall ceremony. Students who complete degree requirements in the spring attend the spring ceremony. Bachelor degree candidates wishing to participate in a spring commencement ceremony prior to completing degree requirements in summer school must meet these conditions:

- 1) Receive permission from appropriate dean
- 2) Show a minimum cumulative grade-point average of 2.0
- 3) Lack 12 or fewer credit hours to complete degree requirements
- 4) Remaining credit hours must be offered in the upcoming summer schedule of classes
- 5) Submit degree application and approved petition form (available in the dean's office) by the last day to apply for a degree in the Spring Semester.

Participation in commencement does not, in itself, mean that a student is considered an NMSU graduate. In order to receive a degree, a student must fulfill university requirements. The degree will reflect the graduation date when all requirements are met.

### Recognition of Degrees and Certificates

Degrees and certificates earned are recorded on the academic record, as are majors where applicable. Minors are also recorded for students completing all requirements for the bachelor's or graduate degree as of May 10, 1980.

### Transcripts

An official transcript, the University's certified statement of your complete NMSU academic record, includes coursework, grades, and degrees earned. Credit hours earned through transfer work are not listed in detail, but do appear as cumulative totals. Transcripts are available as digitally signed PDFs or printed copies. Transcripts can be ordered online at <http://mytranscript.nmsu.edu>. A fee is charged.

The name on the transcript will be the same as on the official NMSU records. Name changes are processed only for current students. No transcript will be released if the student is in debt to the university

# COLLEGE of AGRICULTURAL, CONSUMER AND ENVIRONMENTAL SCIENCES

Dean and Chief Administrative Officer and Regents Professor • *Lowell B. Catlett*

Associate Dean and Director of Academic Programs • *James D. Libbin*

Associate Dean and Director of the Cooperative Extension Service • *Jon C. Boren*

Associate Dean and Director of the Agricultural Experiment Station • *David Thompson*

Scholarship Coordinator • *Will Waller*

Assistant Director of Student Services • *Kristy Mason*

**Bachelor of Science in Agriculture**—Majors in Agricultural Biology, Agricultural Economics and Agricultural Business, Agricultural and Extension Education, Agriculture and Community Development, Agronomy, Animal Science, General Agriculture, Horticulture, Natural Resource Economics and Policy, Rangeland Resources, Soil Science, Turfgrass Science and Management, and Wildlife Science. Programs in Preveterinary Medicine and Preforestry  
**Bachelor of Science in Family and Consumer Sciences**—Majors in Clothing, Textiles, and Fashion Merchandising; Family and Consumer Science Education; Family and Child Science; and Human Nutrition and Dietetic Science, Food Science and Technology.  
**Bachelor of Science in Hotel, Restaurant and Tourism Management**  
**Bachelor of Science in Environmental Science**  
**Bachelor of Science in Genetics**  
**Bachelor of Science in Conservation Ecology**

**Requirements for Bachelors of Science in Agriculture; Family and Consumer Sciences; Hotel, Restaurant and Tourism Management; Genetics; and Conservation Ecology**

1. Constants or courses required of all qualifying for this degree.
2. General education requirements.
3. Courses to be taken in the particular field of your major interest.
4. Free electives sufficient to bring the total number of credits to a minimum of 128 semester credits. Of this total at least 48 semester credits must be in upper-division courses (numbered 300 or above).
5. A grade-point average of not less than 2.0.
6. All students will have an official degree check on file in the Academic Dean's Office prior to start of senior year.

**Typical Curricula in Agriculture**

The following suggested curricula are presented for your guidance. With the consent of the head of the department in which you are majoring, you may select electives and changes in a curriculum except in the case of constants.

**DEGREE: Bachelor of Science in Agriculture**  
**MAJOR: General Agriculture**

The general agriculture major is designed for students searching for a well-rounded education that builds on the diversity of the other degree programs in the College of Agricultural, Consumer, and Environmental Sciences (ACES). The flexibility of the general agriculture degree allows students to tailor a program to fit their individual interests and career goals. Students completing the program earn a Bachelor of Science in General Agriculture. Students choose general agriculture for a variety of reasons. Some may enter the program with a specific career goal in mind. Others may choose general agriculture to obtain a broader education that will give them more flexibility. The curriculum in General Agriculture is administered by the Department of Entomology, Plant Pathology, and Weed Science.

**New Mexico and University Requirements**

**Area I. Communications (10 credits)**

AXED 201G or COMM 253G or COMM 265G .....	3
ENGL 111G.....	4

ENGL 203G, 211G, 218G, 311G or 318G .....	3
<b>Area II. Mathematics (select 3 credits)</b>	
MATH 121G, 142G, 190G, 191G, or 210G.....	3
<b>Area III. Science, with Laboratory (8 credits)</b>	
See Catalog .....	8
<b>Area IV. Social/ Behavioral Sciences (6-9 credits)</b>	
See Catalog .....	6-9
<b>Area V. Humanities and Fine Arts (6-9 credits)</b>	
See Catalog .....	6
<b>Viewing a Wider World (6 cr. 300 or 400 Level)</b>	
Two general education courses: one must be from a college outside of the College of Agricultural, Consumer and Environmental Sciences .....	6

**College Requirements in addition to the courses listed above (note that some ACES classes will meet general education requirements)**

Students must select three areas of concentration from ACES departments. At least 18 credits must be taken from the primary department and at least 12 credits must be taken from two secondary departments. A minimum of 52 credits (20 of which need to be 300+) of the 128 required for the degree, must be completed in courses offered by the College of Agricultural, Consumer, and Environmental Sciences.

**Concentration Areas (departments)**

- Agricultural Economics and Agricultural Business
- Agricultural and Extension Education
- Animal and Range Science
- Entomology, Plant Pathology and Weed Science
- Family and Consumer Sciences
- Fish, Wildlife and Conservation Ecology
- Plant and Environmental Sciences
- Hotel, Restaurant and Tourism Management

**Veterinary Medicine**

**(Preprofessional Training Only, Nondegree)**

The Doctor of Veterinary Medicine (D.V.M.) degree is a professional degree that is not offered by any college or university in New Mexico; however, you may complete at New Mexico State University the preparatory program required for admittance to the professional colleges of veterinary medicine.

The D.V.M. degree normally requires four years of training in a professional college subsequent to completion of a preveterinary program that requires at least three years of college-level instruction. In most instances a baccalaureate degree is a distinct advantage to the applicant.

Curriculum requirements are determined by the particular school or college of veterinary medicine. The Department of Animal and Range Sciences maintains current requirements for Colorado State University, Washington State, Oregon State and Texas A&M. You should check with an advisor for specific course requirements. As a student from New Mexico, you may be eligible for financial assistance under the program of the Western Interstate Commission for Higher Education (WICHE). See the section on WICHE in the "General Information" chapter under "Student Services" for more information.



# AGRICULTURAL ECONOMICS and AGRICULTURAL BUSINESS

## Professor Terry L. Crawford, interim department head

**Professors** Catlett, Clary, Crawford, Diemer, Falk, Fowler, Gorman, Libbin, Skaggs, Torell, Ward; **Associate Professors** Hawkes, Hurd, Lillywhite, Patrick; **College Professor** Bullock, Hansen; **Adjunct Associate Professor** Dewitt (575) 646-3215

<http://www.aeab.nmsu.edu>

**DEGREE:** Bachelor of Science in Agriculture

**MAJOR:** Agricultural Economics and Agricultural Business

### AREAS OF CONCENTRATION:

**Farm Business Management**  
**Ranch Business Management**  
**Marketing and Sales**  
**Business Management**  
**Finance**  
**Computer Applications and Data Management**  
**Agricultural Communications**  
**Natural Resources Management**  
**Agricultural Chemical Sales**  
**Agricultural Records and Financial Controls**  
**International Agricultural Business**  
**International Development**  
**Environmental Economics**  
**Pre-Law**  
**Quantitative Skills/Theory (MS-Prep)**

**MAJOR:** Natural Resource Economics and Policy

**MINORS:** Agricultural Business Management  
 Natural Resource Economics

Specific courses meeting these and the university general education requirements are included for each major. A total of 128 credits are required for graduation. At least 48 credits must be at the 300+ level. You will develop schedules for specific semesters with the help of your academic advisor.

**DEGREE:** Bachelor of Science in Agriculture

**MAJOR:** Agricultural Economics and Business

### GENERAL AND DEPARTMENTAL REQUIREMENTS

COMM 253G or 265G or AXED 201G or HON 265.....3  
 ENGL 111G, Rhetoric and Composition.....4  
 ENGL 203G, 211G, 218G, 311G, or 318G .....3  
 MATH 142G, Calculus for the Biological and Management Sciences I .....3

### Quantitative

A ST 311, Statistical Applications.....3  
 AG E 250, Life with Microcomputers .....3  
 AG E 450, Advanced Microcomputer Applications in Agriculture .....3  
 MATH 120, Intermediate Algebra .....3  
 MATH 121G, College Algebra .....3  
 General education science with lab .....8  
 Social/Behavior Sciences .....6-9  
 Humanities and Fine Arts .....6-9  
 Viewing a Wider World .....6

### General Business

ACCT 251, Management Accounting.....3  
 ACCT 252, Financial Accounting .....3  
 BLAW 316, Legal Environment of Business .....3  
 FIN 341, Financial Analysis and Markets .....3  
 MKTG 300+ course .....3  
 MGT 300+ (Select from MGT 309, 315V, 332, or 361) .....3

### Economic Theory

AG E 340, Agricultural Prices .....3

ECON 251G, Principles of Macroeconomics .....3  
 ECON 252G, Principles of Microeconomics.....3  
 ECON 300+ course .....3

### Applied Economics/Business

AG E 100, Introductory Agricultural Economics and Business .....3  
 AG E 111, Freshman Orientation .....1  
 AG E 236, Agribusiness Management Principles .....3  
 AG E 305/MKTG 305, Marketing Agricultural Products .....3  
 AG E 337V/ECON 337V, Natural Resource Economics or AG E 384V/ECON 384V, Water Resource Economics .....3  
 AG E 400, Seminar .....1  
 AG E 425, Agribusiness Financial Management .....3  
 AG E 445V, Agricultural Policy .....3  
 AG E 385, Applied Production Economics .....3  
 AG E 499, Senior Thesis or AG E 456, Agribusiness Management .....3

In addition to the department and general requirements listed above, you may also select from one of the fifteen available areas of concentration. The specific class requirements for each option are on file in the department and are available either through general advising and/or by request.

**MAJOR:** Natural Resource Economics and Policy

### GENERAL AND DEPARTMENTAL REQUIREMENTS

A ST 311, Statistical Applications.....3  
 AG E 250, Life with Microcomputers .....3  
 COMM 253G or 265G or AXED 201G .....3  
 ENGL 111G, Rhetoric and Composition.....4  
 ENGL 203G, 211G, 218G, 311G, or 318G .....3  
 MATH 120, Intermediate Algebra .....3  
 MATH 121G, College Algebra .....3  
 MATH 142G, Calculus for the Biological and Management Sciences I .....3  
 General education science with lab .....8  
 Social/Behavior Sciences .....6-9  
 Humanities and Fine Arts .....6-9  
 Viewing a Wider World .....6

### Applied Economics Core

AGHE 111, Freshman Orientation.....1  
 AGHE 121, Financial Fitness .....1  
 AG E 385, Applied Production Economics .....3  
 AG E 337V/ECON 337V, Natural Resource Economics .....3  
 AG E 384V/ECON 384V, Water Resource Economics .....3  
 AG E 400, Senior Seminar.....1  
 AG E 475, Water Resource Management & Policy .....3  
 AG E 450, Advanced Microcomputer Applications.....3  
 ECON 251G, Principles of Macroeconomics .....3  
 ECON 252G, Principles of Microeconomics.....3  
 ECON 371, Intermediate Microeconomic Theory .....3  
 ECON 372, Intermediate Macroeconomic Theory .....3

### Science, Policy and Ethics

AG E 445V, Agricultural Policy .....3  
 BIOL 301, Principles of Ecology .....3  
 FWCE 110, Intro to Natural Resources Management.....3  
 FWCE 255, Principles of Fish and Wildlife Management.....3  
 GEOG 381, Cartography and Geographic Information Systems.....3  
 GOVT 324, Environmental Policy .....3  
 PHIL 322, Environmental Ethics .....3  
 PLAN 275, Environmental/ Water Management.....3  
 RGSC 294, Rangeland Resource Management.....3

## AGRICULTURAL and EXTENSION EDUCATION

**Cynda R. Clary, interim department head**

*Professors* Dormody, Hodnett, Seevers, VanLeeuwen; *Associate Professor* Rosencrans; *Assistant Professor* Stair  
(575) 646-4511  
<http://aces.nmsu.edu/academics/axed>

**DEGREE: Bachelor of Science in Agriculture**

**MAJOR: Agricultural and Extension Education**

**OPTIONS: Agricultural Education Teaching  
Agricultural Communications  
Advanced Technology Education**

**MINOR: Agricultural and Extension Education**

**MAJOR: Agriculture and Community Development**

**OPTIONS: Extension**

**Government/ Industry  
International**

**See your academic advisor for more information**

**MINOR: Agricultural and Natural Resource Leadership**

The department offers a broad-based curriculum with majors, options, and minors that prepare students for many careers as professional educators, communicators and leaders in agricultural, natural resource, technology and related disciplines. Example occupations the department prepares its students to enter are agriculture teacher, media specialist, technology teacher, Extension agent, NMDA or USDA professional, industry educational specialist, and development specialist. Graduates work in domestic and/or international settings.

The department offers minors in agricultural and extension education and agricultural and natural resource leadership.

### GENERAL REQUIREMENTS

You must meet the general education and departmental requirements for the degree and the major, option, or minor chosen. You must establish a cumulative grade-point average of not less than 2.5 before you are admitted into the student teaching or other internship program. You need a minimum of 48 hours in technical agriculture for the secondary teaching certificate program in agriculture.

You may select technical courses required for completion of the majors and options from the following areas: agricultural economics; agricultural mechanics; animal and range sciences; entomology, plant pathology and weed science; fish, wildlife and conservation ecology; engineering; and plant and environmental sciences. Selected courses for the majors are:

**MAJOR: Agricultural and Extension Education**

**OPTION: Agricultural Education Teaching (28-33 credits from the following required courses)**

AXED 100, Introduction to Agricultural, Extension, and Technology Education.....	3
AXED 201G, Effective Leadership and Communication in Agricultural Organizations .....	3
AXED 230, Early Field-Based Experience .....	1
AXED 380, Philosophy and Method of Contests.....	3
AXED 445, Developing Excellent Programs in Career and Technical Education .....	3
AXED 446, Methods of Teaching Agricultural and Technology Education .....	3
AXED 447, Directed Teaching in Agricultural and Technology Education.....	12
AXED 460, Methods in Career and Technical Laboratory Instruction.....	2
EDUC 381, Field Experience III.....	2
RDG 414, Content Area Literacy .....	3
SPED 350, Introduction to Special Education in a Diverse Society.....	3
Agricultural Economics (at least 9 credits)	
Agricultural Mechanics (at least 12 credits)	
Plant, Pest and Soil Sciences (at least 12 credits)	
Animal Science, Horticulture, or Natural Resources (at least 12 credits from one of these three areas)	

**OPTION: Agricultural Communications**

This degree option includes a certificate in Creative Media Technology and a minor in either Journalism and Mass Communication or Communication Studies. See your academic advisor for more information.

**OPTION: Advanced Technology Education**

AXED 100, Introduction to Agricultural, Extension, and Technology Education .....	3
AXED 201G, Effective Leadership and Communication in Agricultural Organizations .....	3
AXED 230, Early Field-Based Experience .....	1
AXED 445, Developing Excellent Programs in Career and Technical Education	3
AXED 446, Methods of Teaching Agricultural and Technology Education.....	3
AXED 447, Directed Teaching in Agricultural or Technology Education.....	12
AXED 460, Methods in Career and Technical Laboratory Instruction.....	2
EDUC 381, Field Experience III.....	2
At least 18 credits of upper division technical education, which may include AXED 331, AXED 348, AXED 485, and E T courses such as E T 300, E T 317, E T 320, E T 340, E T 342, E T 365, E T 479, E T 480.	
RDG 414, Content Area Literacy .....	3
SPED 350, Introduction to Special Education in a Diverse Society.....	3

**MINOR: Agricultural and Extension Education**

The department offers a minor in agricultural and extension education, which may be earned by completion of 18 credits in the department. The minor must include 9 credits of upper-division courses.

**MAJOR: Agriculture and Community Development**

AXED 100, Introduction to Agricultural, Extension and Technology Education.....	3
AXED 201G, Effective Leadership and Communication in Agricultural Organizations .....	3
AXED 360, Agricultural Communications.....	3
AXED 400, The Diffusion and Adoption of Agricultural Innovations <b>OR</b>	
AXED 436, Keys for Agricultural and Rural Development.....	3
AXED 415, Youth Program Development and Management <b>OR</b>	
AXED 430, Teaching Adults in Nonformal Settings .....	3
AXED 444, Planning and Methods in Nonformal Education.....	3
AXED 475, Leadership on Agricultural and Natural Resource Issues.....	3
Agricultural Economics (at least 12 credits)	
Agricultural Mechanics and Technology (6 credits)	
Plant and Pest Sciences (at least 13 credits)	
Animal Science (at least 9 credits)	
Natural Resources (at least 9 credits)	
Internship/Emphasis Area (at least 12 credits)	

**MINOR: Agricultural and Natural Resource Leadership**

The department offers a minor in agricultural and natural resource leadership, which may be earned by completing 12 credits of leadership related courses in the department, a three-credit agricultural or natural resource policy course, and a three-credit leadership related course from outside of the Department of Agricultural and Extension Education. The minor must include 9 credits of upper division courses.

### Accreditation

The two teacher education options (Agricultural Education Teaching and Advanced Technology Education) in the Department of Agricultural and Extension Education are accredited by the National Council for the Accreditation of Teacher Education. It is critical that students consult their academic advisor prior to selection of courses for the agriculture, secondary science and teaching endorsements.

## ANIMAL and RANGE SCIENCES

### Professor Tim T. Ross, interim department head

**Professors** Bailey, Fernald, Hallford, Holechek, Ross, J. Thomas, Wise; **Associate**

**Professors** Abbott, Burcham, Cibils, Ivey, Löest, Soto; **Assistant Professors**

Ashley, Fasenko, Scholljegerdes, White; **Instructors** Campbell, Priest, Veeder;

**Co-operators (USDA)** Anderson, Estell, Havstad, Herrick, Peters; **Cooperative**

**Extension Service** Turner(CES)

(575) 646-2514; [ascience@nmsu.edu](mailto:ascience@nmsu.edu)

<http://aces.nmsu.edu/academics/anrs/>

**DEGREE: Bachelor of Science in Agriculture**

**MAJOR: Animal Science**

**OPTIONS: Animal Industry  
Science**

**MAJOR: Rangeland Resources**

**MINORS: Range Science**

**Livestock Production  
Horse Management**

The Department of Animal and Range Sciences provides opportunities for you to follow a variety of interests in modern scientific agriculture. The animal science curriculum provides a background for many phases of the food animal industry, from farm animal production on rangelands to management positions in the food processing industry to highly technical careers in research and companion animal management. The range science curriculum provides you with knowledge and skills necessary to sustainably manage rangelands for multiple uses. These curricula allow you to acquire the background necessary to adjust easily to variations in specific job opportunities. If you are majoring in either animal science or range science, you must meet general education requirements, have a minimum of 48 credits of upper-division courses (numbered 300 and above), and complete a minimum of 35 credits in courses in the College Agricultural, Consumer and Environmental Sciences.

**DEGREE: Bachelor of Science in Agriculture**

**MAJOR: Animal Science**

The animal industry option includes courses that prepare you for work in many phases of the livestock industry, such as livestock production on farms and ranches, the meat industry, the feed industry, livestock breed associations, and livestock publications. The science option provides you with a strong background in technical science and prepares you for advanced studies leading to graduate or professional degrees.

### Animal Science Core of Requirements (Required of Industry and Science options)

A ST 311, Statistical Applications.....	3
ANSC 100, Introductory Animal Science .....	3
ANSC 100 L, Introductory Animal Science Lab .....	1
ANSC 220, Animal Science Career Development .....	1
ANSC 303, Livestock, Meat, and Wool Evaluation, or both ANSC 265 Horse Evaluation and ANSC 355, Advanced Horse Evaluation.....	4
ANSC 304, Feeds and Feeding.....	3
ANSC 370, Anatomy and Physiology of Farm Animals.....	4
ANSC 402, Animal Science Seminar.....	1
ANSC 421, Physiology of Reproduction.....	4
ANSC 422, Animal Nutrition.....	3
ANSC 423, Animal Breeding.....	3
AXED 201G, Effective Leadership and Communication in Agricultural Organizations, or COMM 265G, Principles of Human Communication .....	3
BIOL 111G/111L, Natural History of Life or BIOL 211GL, Cellular and Organismal Biology.....	4
CHEM 111G, General Chemistry.....	4
ECON 201G, Introduction to Economics; or ECON 251G, Principles of Macroeconomics; or ECON 252G Principles of Microeconomics.....	3
MATH 121G, College Algebra, or MATH 191G, Calculus and Analytic Geometry I.....	3
RGSC 294, Rangeland Resource Management.....	3

### OPTION: Animal Industry

AG E 200 or ANSC 325, Mastering Financial Agricultural Statements.....	3
ANSC 200, Introduction to Meat Animal Production .....	3
ANSC 201, Introduction to Genetics for Animal Production; or ANSC 305, Principles of Genetics.....	3
ANSC 261, Introduction to Animal Metabolism.....	3
Meat science electives (two courses): ANSC 262, ANSC 301, ANSC 306, or ANSC 363 .....	6
Production electives (three courses): any three production courses offered in the department. ....	9
Plant science electives (one course): RGSC 307, RGSC 318, RGSC 325, RGSC 440, SOIL 252 .....	3-4
Business electives (one course): ACCT 251, AG E 305, AG E 440, FIN 303V, MGT 315V, MGT 312.....	3

### OPTION: Science

ANSC 305, Principles of Genetics.....	3
BCHE 341, Survey of Biochemistry .....	4
CHEM 112G, General Chemistry II .....	4
CHEM 211, Organic Chemistry, or CHEM 313, Organic Chemistry I; and CHEM 314, 315, Organic Chemistry II and Laboratory .....	4
Meat science electives (one course): ANSC 262, ANSC 301, ANSC 306, ANSC 363.....	3
Production electives (two courses): ANSC 314, ANSC 414, ANSC 415, ANSC 416, ANSC 417.....	6
Designated electives (one course): MATH 191G, MATH 192G, PHYS 211G and 211GL, PHYS 212G and 212GL .....	3-4
Designated electives (one course): ANSC 462, ANSC 480, ANSC 484, TOX 461 or TOX 361 .....	3

Credits sufficient to bring total to 128.

### MAJOR: Rangeland Resources

The following course work prepares you for study and management of rangelands through an integrated ecological approach with special emphasis on rangeland plants, livestock, wildlife, soils, and watersheds. The course work is also well designed for those who want to continue study in graduate school. Any undergraduate student majoring in Range Science must earn a grade of C- or higher in Range Science (RGSC prefix) courses to satisfy degree requirements. Students earning a D or F in a Range Science (RGSC prefix) course will be expected to repeat that course until the student earns a grade of C- or higher. The following courses are required for a major in rangeland resources.

### Range Science Core Requirements

A ST 311, Statistical Applications.....	3
ANSC 261, Introduction to Animal Metabolism, or CHEM 211, Organic Chemistry .....	3 or 4
ANSC Elective above 300.....	3
AXED 201G, Effective Leadership and Communication in Agricultural Organizations, or COMM 265G, Principles of Human Communication .....	3
BIOL 111G, Natural History .....	3
BIOL 211G, Cell and Organismal Biology.....	3
CHEM 111G, General Chemistry I .....	4
CHEM 112G, General Chemistry II .....	4
ECON 201G, Introduction to Economics; or 251G, Principles of Macroeconomics; or 252G, Principles of Microeconomics .....	3
EPWS 314, Plant Physiology .....	3
FWCE 255, Principles of Fish and Wildlife Management.....	3
GEOG 381, Cartography and Geographical Information Systems or a 300/400-level GIS course.....	3
MATH 121G, College Algebra .....	3
PHIL 100G, Philosophy, Law and Ethics, or PHIL 223G, Ethics.....	3
RGSC 150, Rangeland Science Profession .....	1
RGSC 294, Rangeland Resource Management .....	3
RGSC 302V, Forestry and Society.....	3
RGSC 307, Rangeland Grasses .....	3
RGSC 316, Rangeland Plants .....	2
RGSC 317, Rangeland Communities .....	3
RGSC 318, Watershed Management .....	3



RGSC 325, Rangeland Restoration Ecology .....	3
RGSC 402, Seminar .....	1
RGSC 440, Rangeland Resource Ecology .....	3
RGSC 440L, Rangeland Resource Ecology Lab .....	1
RGSC 452, Rangeland Analysis .....	4
RGSC 460, Advanced Rangeland Management .....	4
SOIL 252, Soils .....	3
SOIL 252L, Soils Laboratory .....	1
SOIL 472, Soil Morphology and Classification .....	4

**MINOR: Horse Management**

A minor in Horse Management consists of at least 20 credits.

ANSC 103, Introductory Horse Science .....	3
ANSC 265, Horse Evaluation .....	2
ANSC 288, Horse Fitting and Selling .....	3
ANSC 289, Management of Equine Operations or ANSC 390, Internship .....	3
ANSC 304, Feeds and Feeding .....	3
ANSC 320, Applied Horsemanship or ANSC 321, Applied Horsemanship II .....	3
ANSC 383, Equine Reproductive Management or ANSC 415, Horse Science and Management .....	3

**MINOR: Livestock Production**

A minor in Livestock Production consists of at least 19 credits.

ANSC 100, Introductory Animal Science or ANSC 200, Introductions to Meat Animal Production .....	3 or 4
ANSC 262, Introduction to Meat Science .....	3
ANSC 303, Livestock, Meat, and Wool Evaluation .....	4
ANSC 304, Feeds and Feeding .....	3
Students must complete at least 2 courses from the following list: ANSC 314, Swine Production; ANSC 414, Sheep and Wool Production; ANSC 415, Horse Production; ANSC 416, Beef Production; ANSC 417, Dairy Production .....	6

**MINOR: Range Science**

A minor in Range Science consists of at least 18 credits in courses with a RGSC prefix and a cumulative grade-point of 2.0.

## ENTOMOLOGY, PLANT PATHOLOGY, and WEED SCIENCE

**Professor Jill Schroeder, interim department head**

**Professors** Byford, Creamer, Kemp, Schroeder, Thomas, Thompson; **Associate Professors** Bundy, Pierce, Hanson, Sanogo; **Assistant Professors** Romero, Schutte; **Affiliated Faculty** Banks, Drake, Sweet; **College Professor** Arnold;

**College Assistant Professor** Lewis; **Emeritus Faculty** Ellington, Kinzer, Richman (575) 646-3225

<http://epwms.nmsu.edu/>

**DEGREE: Bachelor of Science in Agriculture**

**MAJOR: General Agriculture**  
(Advised in EPWS: See details on page 27)

**MAJOR: Agricultural Biology**

**OPTIONS: Applied Biology**  
**Entomology**  
**Environmental Biology**  
**Pest Biology and Management**

**MINORS: Pest Management**

**Entomology**  
**Plant Pathology**  
**Weed Science**

Specific courses that meet these and the university general education requirements and additional courses in biology, chemistry, mathematics, and

seminar are included below in departmental requirements. A total of 128 credits are required for graduation. At least 48 credits must be 300-level courses and above. Schedules in specific semesters will be developed with the help of a student's academic advisor.

**DEGREE: Bachelor of Science in Agriculture**

**MAJOR: Agricultural Biology**

The agricultural biology course work prepares you for a variety of careers in the biological sciences and agriculture. You will develop your curriculum with an academic advisor to attain your individual goals. Many will pursue advanced degrees in the sciences or prepare for admittance to professional schools (medical, dental, etc.). A diverse program is offered with four separate options that allow you to tailor your program for careers in the commercial sector, such as agricultural consulting, and pest management or for careers with county, state, or federal agencies, such as research technicians, land managers, and extension agents.

**Departmental Requirements**

Courses marked with an asterisk (\*) are required to fulfill general education requirements.

A ST 311, Statistical Applications* .....	3
ANSC/BIOL 305, Principles of Genetics .....	3
BIOL 111G, Natural History of Life, and BIOL 211G, Cellular and Organismal Biology .....	6
BIOL 311, General Microbiology .....	3
BIOL 313, Structure and Function of Plants, or BIOL 322, Zoology .....	3
CHEM 111G, 112G, General Chemistry I, II* .....	8
COMM 265G, Principles of Human Communication, or COMM 253G, Public Speaking, or AXED 201G, Effective Leadership and Communication in Agricultural Organizations* .....	3
ENGL 111G, Rhetoric and Composition* .....	4
ENGL 211, Writing in the Humanities and Social Sciences, or ENGL 311G, Advanced Composition, or ENGL 218, Technical and Scientific Communication, ENGL 318G, Advanced Technical and Professional Communication* .....	3
EPWS 100, Introduction to Pest Management .....	3
EPWS 100L, Pest Management Laboratory .....	1
EPWS 301, Agricultural Biotechnology .....	3
EPWS 303, Economic Entomology .....	4
EPWS 310, Plant Pathology .....	4
EPWS 311, Introduction to Weed Science .....	4
EPWS 447, Seminar .....	1
MATH 121G, College Algebra .....	3

**General education electives from the following categories:**

Humanities and Fine Arts .....	6-9
Social and Behavioral Sciences .....	6-9
<b>Total</b> .....	<b>15</b>

**Viewing a Wider World (6 cr. 300 or 400 Level):**

Two general education courses: one must be from a college outside of the College of Agricultural, Consumer and Environmental Sciences .....

**Agricultural Biology Options**

In addition to the departmental requirements listed above, you must also complete all of the courses in at least one of the options listed below. Courses with higher numbered prefixes may replace courses listed as departmental requirements in some cases.

**OPTION: Applied Biology/Preprofessional**

The Applied Biology option prepares you for professional advancement including admittance to medical, dental, veterinary, and graduate schools. Students interested in the health professions must register with the Health Professional Advisory Committee no later than the sophomore year. Students should check the specific entrance requirements for the professional or graduate school of their choice prior to selecting electives within this option.

BCHE 341, Survey of Biochemistry .....	4
CHEM 313, 314, 315, Organic Chemistry I, II, and Lab .....	8
MATH 190G, Trigonometry and Precalculus .....	4
MATH 191G Calculus and Analytical Geometry I .....	4

PHYS 211G, 211GL, General Physics I, General Physics I Laboratory.....4

**Choose two of the following courses:**

ANSC 370, Anatomy and Physiology of Farm Animals; BIOL 312, Plant Taxonomy; BIOL 330, Comparative Anatomy and Embryology; BIOL 354, Physiology of Humans; BIOL 377, Cell Biology; EPWS 314, Plant Physiology; EPWS 373, Fungal Biology; EPWS 481, Plant Nematology ..... 6-8

**Suggested Electives:**

MATH 192G, Calculus and Analytic Geometry II, PHYS 212, General Physics II

**OPTION: Environmental Biology**

The Environmental Biology option prepares you for professional positions in environmental impact, regulation, compliance, and improvement.

CHEM 211, Organic Chemistry.....3

E S 330/430, Environmental Management Seminars I, II.....2

EPWS 380V, Ecosystem Earth: The Impact of Human Activities .....3

EPWS 314, Plant Physiology.....3

EPWS 451, Special Topics.....3

EPWS 486, Plant Virology.....3

EPWS 492, Diagnosing Plant Disorders .....3

MATH 142G, Calculus for Biological and Management Sciences I.....3

PHYS 211G, 211GL, General Physics I.....4

SOIL 252, Soils.....3

TOX 361, Basic Toxicology.....3

**Select at least two of the following:**

A ST 456, Statistical Methods and Data Analysis .....3

AGRO 365, Principles of Crop Production.....3

AGRO 471, Plant Mineral Nutrition.....3

BCHE 341, Survey of Biochemistry .....4

E S 370, Environmental Soil Science .....3

EPWS 420, Environmental Fate of Pesticides .....3

GEOG 381 Cartography and Geographic Information Systems and .....3

SOIL 257, Introduction to Meteorology.....3

SOIL 312, Soil Management and Fertility.....3

TOX 423, Environmental Toxicology .....3

**OPTION: Entomology**

The Entomology option prepares you for graduate degrees in entomology. Emphasis is placed on a broad background in field and laboratory aspects of insect biology and management.

AGRO 471, Plant Mineral Nutrition, or AGRO 365, Principles of Crop Production ..3

CHEM 313, 314, 315, Organic Chemistry I, II, and Lab .....8

BCHE 341, Survey of Biochemistry .....3

EPWS 314, Plant Physiology.....3

EPWS 451, Special Topics.....3

EPWS 455, Advanced Integrated Pest Management, or EPWS 456, Biological Control.....3

EPWS 462, Parasitology .....3

EPWS 481, Plant Nematology .....3

EPWS 491, Insect Physiology.....3

EPWS 492, Diagnosing Plant Disorders .....3

MATH 142G, Calculus for Biological and Management Sciences I.....3

PHYS 110G, The Great Idea of Physics or above .....4

SOIL 252, Soils.....3

**OPTION: Pest Biology and Management**

This option prepares you for careers such as insect, weed, and disease management, including IPM and Sustainable/Organic Techniques research technician, federal and state agencies, border security, agricultural consulting, and extension positions.

CHEM 211, Organic Chemistry.....4

EPWS 314, Plant Physiology.....3

EPWS 455, Advanced Integrated Pest Management, or EPWS 456, Biological Control.....3

EPWS 481, Plant Nematology, or EPWS 462, Parasitology.....3

EPWS 492, Diagnosing Plant Disorders .....3

MATH 142G, Calculus for Biological and Management Sciences I.....3

PHYS 110G, The Great Idea of Physics or above .....4

SOIL 252, Soils.....3

SOIL 312, Soil Management and Fertility.....4

TOX 361, Basic Toxicology.....3

Select at least one of the following:

BIOL 312, Plant Taxonomy .....3

RGSC 307, Rangeland Grasses.....3

RGSC 316, Rangeland Plants.....2

**Select at least one of the following:**

AGRO 365, Principles of Crop Production .....4

AGRO 471, Plant Mineral Nutrition.....4

BIOL 301, Principles of Ecology .....3

EPWS 420, Environmental Fate of Pesticides .....3

RGSC 317, Rangeland Communities.....3

**MINORS**

*Courses marked with † are required for the minor.*

**MINOR: Pest Management (18 credits)**

EPWS 100, Introduction to Pest Management.....3

EPWS 100L, Pest Management Lab.....1

†EPWS 303, Economic Entomology.....4

†EPWS 310, Plant Pathology .....4

†EPWS 311, Introduction to Weed Science.....4

Upper-division EPWS course(s).....3-6

**MINOR: Entomology (18 credits)**

EPWS 100, Introduction to Pest Management.....3

EPWS 100L, Introduction to Pest Management Lab.....1

†EPWS 303, Economic Entomology.....4

EPWS 451, Special Topics.....3-9

EPWS 455, Advanced Integrated Pest Management.....3

EPWS 456, Biological Control .....3

EPWS 462, Parasitology .....3

EPWS 491, Insect Physiology.....3

**MINOR: Plant Pathology (18 credits)**

BIOL 311, General Microbiology.....3

BIOL 311L, General Microbiology Lab.....1

EPWS 100, Introduction to Pest Management.....3

EPWS 100L, Introduction to Pest Management Lab.....1

†EPWS 310, Plant Pathology .....4

EPWS 314, Plant Physiology.....3

EPWS 373, Fungal Biology .....3

†EPWS 481, Plant Nematology .....3

†EPWS 486, Plant Virology.....3

EPWS 492, Diagnosing Plant Disorders .....3

**MINOR: Weed Science (18 credits)**

BIOL 312, Plant Taxonomy .....4

BIOL 408, Ecology of Plants .....3

EPWS 100, Introduction to Pest Management.....3

EPWS 100L, Introduction to Pest Management Lab.....1

†EPWS 311, Introduction to Weed Science.....4

†EPWS 314, Plant Physiology.....3

†EPWS 449, Special Problems .....1-3

EPWS 452, Applied Pesticide Toxicology .....3

## FAMILY and CONSUMER SCIENCES

**Esther Devall, interim department head**

**Professors** Bock, Devall, Del Campo, Eastman, McKee, Munson-McGee;

**Associate Professor** Smitley; **Assistant Professors** Bartley, Chavez, Krishnan,

Montanez, Vaillancourt; *Emeritus Professor* Cummings  
(575) 646-3936  
<http://aces.nmsu.edu/academics/fcs/>

**DEGREE: Bachelor of Science in Family and Consumer Sciences****MAJORS: Clothing, Textiles, and Fashion Merchandising****Family and Child Science****Family and Consumer Sciences Education****Human Nutrition and Dietetic Sciences****OPTIONS: Community Nutrition****Dietetics****Nutrition and Fitness****Prehealth with Emphasis in Nutrition****DEGREE: Bachelor of Science in Food Science and Technology****MAJOR: Food Science and Technology****OPTIONS: Science, Technology and Engineering****Culinary Science****Meat Science****MINORS: Clothing, Textiles and Fashion Merchandising****Culinary Science****Family and Child Science****Food Science****Nutrition**

Courses and curricula in the department are designed to educate you as an individual and as a citizen in a changing society. They also develop a scientific attitude and the ability to conduct research directed toward solutions of problems affecting the quality of life.

You must complete general education requirements, and a sequence of specialized course work is then identified for each major.

The following prefixes are used for courses: CTFM—Clothing, Textiles, and Fashion Merchandising; FCSC—Family and Consumer Sciences; FCS—Family and Child Science; FCSE—Family and Consumer Sciences Education; FRMG—Family Resource Management; FSTE—Food, Science and Technology; HNDS—Human Nutrition and Dietetic Science.

**DEGREE: Bachelor of Science in Family and Consumer Sciences****MAJOR: Clothing, Textiles, and Fashion Merchandising**

This major prepares you for careers in the fashion industry. Courses are provided for you to study cultural, sociological, and psychological aspects of dress, business, textiles, fashion merchandising, and apparel production. You may also minor in related disciplines such as marketing, retail management, accounting, and other fields. You must have a GPA of 2.5 or better before enrolling in CTFM 402, Field Experience Marketing Training; FCSE 348, Teaching in Informal Family and Consumer Sciences Settings; and FCSC 400, Research Methods in Family and Consumer Sciences.

**General Education Requirements**

A list of specific general education requirements is available in the department. Please check with your advisor.

**Departmental Requirements**

CTFM 178, Fundamentals of Fashion.....	3
CTFM 255, Applied Principles in Clothing Selection.....	3
CTFM 270, Fashion Illustration.....	3
CTFM 273, Concepts in Apparel Construction.....	3
CTFM 366, Historic Fashion.....	3
CTFM 371, Textile Science.....	3
CTFM 372, Fashion Merchandising.....	3
CTFM 402, Field Experience Marketing Training.....	3-6
CTFM 474, Fashion Promotion.....	3
CTFM 475, Fashion Buying.....	3
Two from the following: FCS 300+; FCSE 348, Teaching in Informal Family and Consumer Sciences Settings; FRMG 330, Personal and Family Finance; FRMG 333, Consumer Practices and Problems or FRMG 300+.....	6

**Nondepartmental Requirements**

A ST 311, Statistical Applications, or STAT 251G, Statistics for Business and the Behavioral Sciences.....	3
--	---

ACCT 251, Management Accounting, or ACCT 252, Financial Accounting.....	3
ART 110G, Visual Concepts.....	3
CHEM 110G, Principles and Applications of Chemistry or CHEM 111/111L and CHEM 112/112L General Chemistry.....	4
COMM 265G, Principles of Human Communication; AXED 201G, Effective Leadership and Communication in Agricultural Organizations; or COMM 253G, Public Speaking.....	3
C S 110, Computer Literacy, or AG E 250, Life with Microcomputers or BCIS 110 Intro to Computer Info Systems.....	3
ECON 252G, Principles of Microeconomics.....	3
ENGL 111G, Rhetoric and Composition.....	4
ENGL 203G, Business and Professional Communication; ENGL 211G, Writing in the Humanities; ENGL 218G, Technical and Scientific Communication; ENGL 311G, Advanced Composition; or ENGL 318G, Advanced Technical and Professional Communication.....	3
General Education HIST Course.....	3
MATH 120, Intermediate Algebra.....	3
MATH 210G, Math Appreciation.....	3
MGT 309, Human Behavior in Organizations.....	3
MGT 315V, Human Relations in Organizations.....	3
MKTG 303, Principles of Marketing or MKTG 313, Retail Management, or MKTG 324, Product/ Service Development.....	3
PSY 201G, Introduction to Psychology.....	3
SOC 101G, Introductory Sociology.....	3
Viewing a Wider World.....	6

**Electives**

Choose in consultation with CTFM advisor to round out curriculum of 128 credits. At least 48 credits must be courses labeled 300 or above. Choose from the following:

B A 301, Career Planning in Business.....	1
CTFM 373, Advanced Apparel Techniques.....	3
CTFM 384, Clothing for Special Needs.....	3
CTFM 460, Cultural Perspectives on Dress.....	3
CTFM 470, Fashion Trend Analysis.....	3
CTFM 476, Apparel Design by Draping.....	3
CTFM 478, Apparel Design through Flat Pattern.....	3
CTFM 489, Fashion Markets.....	2-8
HON 323V, Cultural Perspectives on Dress.....	3
MGT 332, Human Resources Management.....	3
MGT 453, Leadership and Motivation.....	3
MKTG 317, International Marketing.....	3

(Check prerequisites before enrolling in courses.)

**MAJOR: Family and Child Science**

This major stresses the interrelationship of individuals throughout the life span and the impact of social and economic factors on the family system. Graduates are prepared for professional work with social and community agencies and other activities serving families and consumers. You must work closely with an advisor. **You must achieve a grade of C or higher in your required core and option courses**, and must retake required courses with a grade lower than C. You must have a GPA of 2.5 or higher before enrolling in FCS 424, Field Experience: Issues and Ethics; FCSC 400, Research Methods in Family and Consumer Sciences; and FCSE 348, Teaching in Informal Family and Consumer Sciences Settings.

**General Education Requirements**

A list of specific general education requirements is available in the department. Please check with your advisor.

**Core Classes**

FCS 181, Interpersonal Skills in Intimate Relationships.....	3
FCS 380, Family Dynamics.....	3
FCS 381, Middle Childhood Development in the Family.....	3
FCS 383, Parenting and Child Guidance.....	3
FCS 424, Field Experience: Issues and Ethics.....	8
FCS 446, Adolescent Development and the Family.....	3
FCS 447, Infancy and Early Childhood in the Family.....	3
FCS 448, The Aging Family.....	3

FCS 449V, Family Ethnicities and Subcultures.....	3
FCSC 400, Research Methods in Family and Consumer Sciences.....	3
FCSE 345, Management Concepts in Family and Consumer Sciences Teaching, or FCSE 348, Teaching in Informal Family and Consumer Science Setting .....	3
FRMG 330, Personal and Family Finance.....	3
FRMG 333, Consumer Practices and Problems .....	3
HNDS 163, Nutrition for Health.....	3

**Option Courses (Select 4 courses; 12 credits)**

With the approval of an FCS advisor, select 12 hours of 300 or 400 level courses from prefixes such as C EP, ECED, FCS, GERO, HL S, PSY, SOC, S WK and W S that are relevant to families and children.

**Electives**

Choose electives with approval of an FCS advisor sufficient to bring total to at least 128 credits with at least 48 credits labeled 300 or higher.

Students are encouraged to complete a minor in a related area such as criminal justice, health sciences, sociology, and psychology. Consult with an advisor for requirements. (See departmental minors at the end of this section.)

**MAJOR: Family and Consumer Sciences Education**

This major prepares you for secondary school teaching as well as teaching in other educational settings such as the Cooperative Extension Service. Two options are available. The Teaching Option meets licensure requirements for New Mexico. The Extension Option prepares you to teach in the Cooperative Extension Service or other community agencies. In the spring semester of the senior year, principles of teaching are applied during student teaching in a selected school or a County Extension office. Requirements for admission to the student teaching component of the Family and Consumer Sciences Education program are (1) an overall grade-point average of not less than 2.5 and a grade-point average of 2.5 or above in family and consumer sciences courses; (2) a C or better in all departmental courses and (3) recommendation of advisor. You must have a GPA of 2.5 or higher before enrolling in FCSE 348, Teaching in Informal Family and Consumer Sciences Settings; FCSE 408, Field Experience Extension; FCSE 446, Teaching Methods I for Family and Consumer Sciences; and FCSE 448, Supervised Teaching in Family and Consumer Sciences.

**General Education Requirements**

A list of specific general education requirements is available in the department. Please check with your advisor.

**Departmental Requirements**

CTFM 178, Fundamentals of Fashion, or CTFM 255, Principles of Clothing Selection .....	3
CTFM 273, Concepts in Apparel Construction.....	3
CTFM 371, Textile Science.....	3
FCS 181, Interpersonal Skills in Intimate Relationships.....	3
FCS 380, Family Dynamics.....	3
FCS 383, Parenting and Child Guidance .....	3
FCS 446, Adolescent Development and the Family .....	3
FCS 447, Infancy and Early Childhood in the Family .....	3
FCSE 245, Overview of Family and Consumer Sciences Teaching .....	3
FCSE 345, Management Concepts in Family and Consumer Sciences Teaching .....	3
FCSE 445, Vocational Programs for Youth and Adults .....	3
FCSE 446, Teaching Methods I for Family and Consumer Sciences; .....	3
FCSE 447, Teaching Methods II for Family and Consumer Sciences; .....	3
FRMG 330, Personal and Family Finance .....	3
FRMG 331, Management of Family Life and Resources .....	3
FRMG 335, Housing and Interior Design .....	3
FSTE 164G, Introduction to Food Science and Technology .....	3
FSTE 263G, Food Science I .....	4
FSTE food science 300+ elective (see advisor for selections) .....	3
HNDS 163, Nutrition for Health, or HNDS 251, Human Nutrition.....	3
HNDS nutrition 300+ elective (see advisor for selections).....	3

**Nondepartmental Requirements**

AG E 250, Life with Microcomputers, or C S 110, Computer Literacy, or BCIS 110, Introduction to Computer Information Systems.....	3
---	---

HRTM 221, Introduction to Hospitality Management.....	3
HRTM 231, Safety, Sanitation and Health in the Hospitality Industry .....	2
HRTM 263, Food Production and Service Fundamentals .....	3
SPED 350, Introduction to Special Education in a Diverse Society.....	3

**Viewing a Wider World (Choose Two)**

HL S 301V, Human Sexuality, or BLAW 385V, Consumers and the Law, or MKTG 311V, Consumer Behavior.....	3
One approved VWW Course	

**Specific Teaching Option Requirements**

FCSE 448, Supervised Teaching in Family and Consumer Sciences .....	9
RDG 414, Content Area Literacy .....	3

**Specific Extension Option Requirements**

FCSE 408, Field Experience Extension .....	9
Electives (AXED recommended) .....	10
Upper-division hours must total 48. A second teaching field can also be arranged.	

**MAJOR: Human Nutrition and Dietetic Sciences****OPTION: Dietetics**

This option is the first step in a three step process to be a dietitian in a variety of practice settings. Upon completion of the didactic program, a Verification Statement, which is necessary to complete a supervised practice program, is issued. To help ensure that you will be successful in our program, a supervised practice program, and on the Commission on Dietetic Registration (CDR) National Exam, students must do the following to get a Verification Statement:

1. Complete all classes outlined below on the Dietetics option program of study;
2. **Attain a C or higher** (on campus or transfer) in classes with CHEM, BCHE, BIOL, SP M, HNDS and FSTE prefixes;
3. **Take a challenge exam, scoring a C or higher**, related to HNDS 446, 448 and 449 if you desire to transfer in courses that are comparable;
4. Take at least 30 credits at New Mexico State University with 20 upper division (300 level or above) and 10 in HNDS (300 level or higher);
5. Must have a GPA of 2.5 or better and have a junior standing before enrolling in FCSC 400, Research Methods in Family and Consumer Sciences; FCSE 348 Teachings in Informal Family and Consumer Science Settings; or HNDS 401/407, Field Experience; and
6. Complete, with a 75% or higher on each, a series of domain specific (Food and Nutrition; Clinical and Community Nutrition; Education and Research; Food and Nutrition Systems; Management) Exit Exams.

**Note:** Exit Exams can be taken more than once. To further help ensure that you will be successful in our program, a supervised practice program, and when taking the Commission on Dietetics Registration (CDR) National Exam, all students will be asked to sign an English Proficiency Awareness form.

Following graduation, a supervised practice experience in a program accredited by the Commission on Accreditation of Dietetic Education of the Academy of Nutrition and Dietetics is required. Upon successful completion of a supervised practice program, you are eligible to take the CDR National Exam to be a Registered Dietitian. This option is part of a Didactic Program in Dietetics developmentally accredited by the Commission on Accreditation of Dietetic Education of the Academy of Nutrition and Dietetics, 120 South Riverside Plaza, Suite 2000, Chicago, IL 60660-695, 1-800-877-1600. You must work closely with advisors to ensure proper scheduling of necessary courses.

**General Education Requirements**

General education requirements are incorporated into the following list. Please check with your advisor.

**Departmental Requirements**

FCS 181, Interpersonal Skills in Intimate Relationships.....	3
FCSC 400, Research Methods in FCSC; AXED 456, Introduction to Research Methods; or HL S 451, Biometrics and Health Research.....	3
FCSE 348, Teaching in Informal Family and Consumer Sciences Settings.....	3
FSTE 263G, Food Science I .....	4
FSTE 447, Experimental Foods .....	3
HNDS 201, Seminar 1- Becoming a Nutrition Professional.....	1
HNDS 251, Human Nutrition or HNDS 163, Nutrition for Health.....	3



HNDS 350, Nutrition throughout the Life Cycle .....	3
HNDS 363, Quantity Food Production and Service.....	4
HNDS 401, Field Experience-Clinical Dietetics.....	1
HNDS 407, Field Experience-Community Nutrition .....	1
HNDS 403, Community Nutrition .....	3
HNDS 409, Seminar II- Human Nutrition and Food Science Portfolio Development .....	1
HNDS 430, Food Service Organization and Management.....	3
HNDS 446, Diet Therapy I.....	3
HNDS 448, Advanced Nutrition .....	3
HNDS 449, Diet Therapy II.....	3
HNDS upper-division elective.....	3

**Nondepartmental Requirements**

A ST 311, Statistical Applications*, or STAT 251G, Statistics for Business and Behavioral Sciences.....	3
ACCT 251, Management Accounting.....	3
AG E 250G, Life with Microcomputers*; BCIS 110, Introduction to Computerized Information Systems; or C S 110, Computer Literacy.....	3
ANTH 357V, Medical Anthropology; or ANTH 431, Nutritional Anthropology; or ANTH 360V, Food and Culture Around the World.....	3
BCHE 341, Survey of Biochemistry and Lab .....	4
BIOL 211G/211GL, Cellular and Organismal Biology and Lab or BIOL 111/111L, Natural History of Life and Lab .....	4
BIOL 253, Human Anatomy*; or BIOL/SP M 271 and 271L, Human Systemic Anatomy and Lab .....	3-5
BIOL 254, Human Physiology.....	3
CHEM 111G, General Chemistry I.....	4
CHEM 112G, General Chemistry II .....	4
CHEM 211, Organic Chemistry; or CHEM 313, Organic Chemistry I and CHEM 314, Organic Chemistry II and CHEM 315, Organic Chemistry Lab .....	4 or 8
COMM 253G, Public Speaking; or COMM 265G, Principles of Human Communication; or AXED 201G, Effective Leadership and Communication in Agricultural Organizations* .....	3
ENGL 111G, Rhetoric and Composition.....	4
ENGL 203G, Business and Professional Communication; or ENGL 218G, Technical and Scientific Communication; or ENGL 318V, Advanced Technical and Professional Communication*.....	3
FSTE 320, Food Microbiology*; or BIOL 219, Public Health Microbiology and BIOL 311L, General Microbiology Lab; or BIOL 311/311L, General Microbiology .....	3-5
GOVT 100G, American National Government*; or GOVT 110G, Introduction to Political Science; or GOVT 150G, American Political Issues.....	3
MATH 121G, College Algebra; or MATH 142G, Calculus for the Biological and Management Sciences I.....	3
MGT 332, Human Resources Management*; or MGT 309, Human Behavior in Organizations .....	3
OEHO 120, Medical Terminology; CHSS 310, Medical Terminology for Health and Social Services Professionals; or SP M 191, Medical Terminology for Athletic Training .....	3
PSY 201G, Introduction to Psychology.....	3
Humanities / Fine Arts / History General Education requirement.....	3
Humanities, Fine Arts General Education: Art, Music or Theatre Requirement ..	3

**Viewing a Wider World:**

*C EP 451V, Introduction to Counseling.....	3
*GEOG 315V, World Agriculture and Food Problems .....	3
Electives, departmental and nondepartmental, sufficient to bring total credits to 128, including 48 upper-division. *Preferred	

**OPTION: Community Nutrition**

This option prepares you to function in a nutrition capacity in a community or public health setting such as the Department of Health (Women, Infant and Child Nutrition Program; Adult Health; Children's Medical Services), School Food Service, and the Area Agency on Aging. **You must attain a C or higher (on campus or transfer)** in all CHEM, BIOL, HL S, HNDS and SP M course work. You must take at least 30 credits at NMSU and complete 48 credits at the upper-division

(300+) level. A minimum of 128 credits is required for the degree. You must have a GPA of 2.5 or better before enrolling in FCSC 400, Research Methods in FCSC; FCSE 348, Teaching in Informal Family and Consumer Sciences Settings; or HNDS 407, Field Experience.

You should be aware that in some states there are licensure laws related to the practice of therapeutic nutrition. Such licensure often requires you to have a minimum of the didactic requirements that are noted by the\* below. Didactic requirements that are NOT included in this program of study are detailed at the end of the degree requirements. In addition to meeting the didactic requirements, to become a registered dietitian you must also complete a supervised practice program sanctioned by the Commission on Accreditation of Dietetic Education of the Academy of Nutrition and Dietetics and take the national examination administered by the Commission on Dietetic Registration. To broaden career possibilities, it is highly recommended you complete all requirements to become a registered dietitian. See Dietetics option for requirements to get a verification statement.

**Departmental Requirements**

FCS 181, Interpersonal Skills in Intimate Relationships*.....	3
FCSE 348, Teaching in Informal Family and Consumer Sciences Settings, or FCSE 345, Management Concepts in Family and Consumer Sciences Teaching* .....	3
FCSC 400, Research Methods in Family and Consumer Sciences* or AXED 456, Introduction to Research Methods or HL S 451, Biometric Health Research .....	3
FSTE 263G, Food Science I* .....	4
FSTE 320, Food Microbiology* .....	3
HNDS 201, Seminar 1- Becoming a Nutrition Professional* .....	1
HNDS 251, Human Nutrition* or HNDS 163 Nutrition for Health.....	3
HNDS 350, Nutrition throughout the Life Cycle* .....	3
HNDS 403, Community Nutrition* .....	3
HNDS 407, Field Experience Community Nutrition* .....	2
HNDS 409, Seminar II- Human Nutrition and Food Science Portfolio Development* .....	1
HNDS Nutrition electives (choose 12 hours from the following): HNDS 404, Maternal, Infant and Child Nutrition; HNDS 406, Geriatric Nutrition; HNDS 410, Sports Nutrition; HNDS 416, Nutrition and Culture; HNDS 430, Food Service Organization; HNDS 450, Special Topics; HNDS 492, Special Problems* .....	12
FSTE food science electives (choose 3 hours from the following): FSTE 325, Food Analysis; FSTE 331, Food Preservation; FSTE 447, Experimental Foods* .....	3

**Nondepartmental Requirements**

A ST 311, Statistical Applications, or STAT 251G, Statistics for Business and the Behavioral Sciences* .....	3
AG E 250, Life with Microcomputers, or C S 110, Computer Literacy* or BCIS 110, Introduction to Computer Information Systems.....	3
ANTH 431, Nutritional Anthropology; or ANTH 357V, Medical Anthropology; or ANTH 360V, Food and Culture Around the World* .....	3
BIOL 211G/211L, Cellular and Organismal Biology and Lab* or BIOL 111/111L, Natural History of Life and Lab .....	4
BIOL 254, Human Physiology.....	3
CHEM 110G, Principles and Applications of Chemistry; or CHEM 111G/111L, General Chemistry I*; and CHEM 112G/112L, General Chemistry II and Lab* .....	4 or 8
COMM 265G, Principles of Communication; or COMM 253G, Public Speaking; or AXED 201G, Effective Leadership; and Communication in Agricultural Organizations* .....	3
ENGL 111G, Rhetoric and Composition* .....	4
ENGL 203G, Business and Professional Communication; or ENGL 218G, Technical and Scientific Communication; or ENGL 318G, Advanced Technical and Professional Communication*.....	3
GOVT 100G, American National Government; or GOVT 110G, Introduction to Political Science; or GOVT 150G, American Political Issues* .....	3
HL S 100, Introduction to Health Science.....	1
HL S 150G, Personal Health and Wellness .....	3
HL S 275, Foundations of Health Education.....	3
HL S 320, Human Stress Management.....	3
HL S 395, Foundations of Public Health .....	3
HL S 459, Infectious and Noninfectious Disease Prevention.....	3



HL S electives (Choose 15 hours from the following): HL S 301V, Human Sexuality; HL S 305V, Global Environment Health Issues; HL S 380V, Women's Health Issues; HL S 460, American Indian Health; HL S 461, Health Disparities: Determinants and Interventions; HL S 462, Hispanic Health Issues; HL S 464V, Cross-Cultural Aspects of Health; HL S 465, International Health Problems; HL S 467, Rural Health Issues; HL S 469, U.S.-Mexico Border Health Issues; HL S 474, Alcohol and Drug Prevention and Control; HL S 477 Worksite Health Promotion; HL S 487, Consumer Health; HL S 489, Ethics and Jurisprudence for Health Personnel; HL S 491, Mind- Body Health and Complementary and Alternative Medicine; HL S 492, Health Care of the Aged..... 15

MATH 121G, College Algebra\* or MATH 142G, Calculus for the Biological and Management Sciences I\* ..... 3

OEHO 120, Medical Terminology; or CHSS 310, Medical Terminology for Health and Social Services Professionals\* or SP M 191, Medical Terminology for Athletic Training ..... 3

PHIL 223G, Ethics..... 3

PSY 201G, Introduction to Psychology\* ..... 3

General Electives ..... 4

#### General Education Requirements

Humanities / Fine Arts / History General Education requirement..... 3

Humanities, Fine Arts General Education: Art, Music or Theatre Requirement..3

#### Viewing a Wider World requirement:

C EP 451V, Introduction to Counseling\* ..... 3

GEOG 315V, World Agriculture and Food Problems\* ..... 3

Additional course work needed to complete the American Dietetic Association Didactic Program in Dietetics requirements for a Verification Statement:

#### Departmental Requirements for DPD

FSTE 447, Experimental Foods ..... 3

HNDS 363, Quantity Food Production and Service..... 4

HNDS 401, Field Experience- Clinical Dietetics ..... 1

HNDS 430, Food Service Organization and Management..... 3

HNDS 446, Diet Therapy I ..... 3

HNDS 448, Advanced Nutrition ..... 3

HNDS 449, Diet Therapy II ..... 3

#### Nondepartmental Requirements for DPD

ACCT 251, Management Accounting..... 3

BCHE 341, Survey of Biochemistry and Lab ..... 4

BIOL 253, Human Anatomy, or BIOL/SP M 271 and 271L, Human Systemic Anatomy and Lab ..... 4

CHEM 111G/111L, General Chemistry I ..... 4

CHEM 112G/112L, General Chemistry II..... 4

CHEM 211, Organic Chemistry ..... 4

MGT 309, Human Behavior in Organizations; or MGT 332, Human Resources Management..... 3

#### OPTION: Nutrition and Fitness

This option will give you a background in both nutrition and fitness that will prepare you to work in settings such as corporate and community wellness programs, gyms, and other areas related to nutrition and physical fitness. **You must attain a C or higher (on campus or transfer)** in all CHEM, BIOL, HL S, SP M, PE P and HNDS course work. You must take at least 30 credits at NMSU and complete 48 credits at the upper division (300+) level. A minimum of 128 credits is required for the degree. You must have a GPA of 2.5 or better before enrolling in FCSC 400, Research Methods in FCSC, FCSE 348, Teaching in Informal Family and Consumer Sciences Settings, or HNDS 401/407, Field Experience.

You should be aware that in some states there are licensure laws related to the practice of therapeutic nutrition. Such licensure often requires you to meet didactic requirements. Didactic requirements that are NOT included in this program of study are detailed at the end of the degree requirements. In addition to meeting the didactic requirements, to become a registered dietician you must also complete a supervised practice program sanctioned by the Commission on Dietetic Education of the Academy of Nutrition and Dietetics (AND) and take the Commission on Dietetic Registration's national examination administered by the AND. To broaden career possibilities, it is highly recommended you complete all requirements to become a registered dietitian. See dietetic option for requirements to get a verification statement.

#### Departmental Requirements

FCS 181, Interpersonal Skills in Intimate Relationships..... 3

FCSE 348, Teaching in Informal Family and Consumer Sciences Settings ..... 3

HNDS 201, Seminar 1- Becoming a Nutrition Professional..... 1

HNDS 251, Human Nutrition or HNDS 163, Nutrition for Health..... 3

HNDS 350, Nutrition Throughout the Life Cycle ..... 3

HNDS 403, Community Nutrition ..... 3

HNDS 401, Field Experience- Clinical Dietetics..... 1

HNDS 407, Field Experience - Community Nutrition..... 1

HNDS 409, Seminar II- Human Nutrition and Food Science Portfolio Development..... 1

HNDS 410, Sports Nutrition ..... 3

HNDS 446, Diet Therapy I..... 3

HNDS 448, Advanced Nutrition ..... 4

HNDS 449, Diet Therapy II..... 3

#### Non-Departmental Requirements

A ST 311\*, Statistical Applications, or STAT 251G, Statistics for Business and Behavioral Sciences..... 3

AG E 250\*, Life with Microcomputers, C S 110, Computer Literacy, or BCIS 110, Introduction to Computerized Information Systems ..... 3

ANTH 431\*, Nutritional Anthropology; or ANTH 357V, Medical Anthropology; or ANTH 360V, Food and Culture Around the World ..... 3

BCHE 341, Survey of Biochemistry and Lab ..... 4

BIOL 211G/L\* Cellular & Organismal Biology..... 4

BIOL 254\*, Human Physiology ..... 3

CHEM 111G\*, General Chemistry I and Lab ..... 4

CHEM 112G\*, General Chemistry II and Lab ..... 4

CHEM 211\*, Organic Chemistry or CHEM 313 and CHEM 314 and CHEM 315..... 4 or 8

COMM 265G\*, Principles of Communication, or COMM 253G, Public Speaking, or AXED 201G, Effective Leadership and Communication in Agricultural Organizations\* ..... 3

ENGL 111G\* or ENGL 111H, Rhetoric and Composition..... 4

ENGL 203G, Business & Professional Communication; or ENGL 218G, Technical & Scientific Communication or 318G\*, Advanced Technical & Scientific Communication..... 3

GOVT 100G\*, American National Government, or GOVT 110G\*, Introduction to Political Science, or GOVT 150G\*, American Political Issues..... 3

HL S 320, Human Stress Management..... 3

MATH 121G, College Algebra or MATH 142G\*, Calculus for the Biological and Management Sciences I..... 3

OEHO 120, Medical Terminology; or CHSS 310, Medical Terminology for Health and Social Services Professionals, or SP M 191, Medical Terminology for Athletic Training ..... 3

PE P 208\*, Fitness for Health and Sports..... 3

PSY 201G\*, Introduction to Psychology ..... 3

SP M 271/L\*, Human Systemic Anatomy ..... 4

SP M 304, Psychology of Sport..... 3

SP M 305, Biomechanics ..... 3

SP M 308, Exercise Physiology..... 3

SP M 330, Exercise Prescription ..... 3

SP M 451, Advanced Exercise Physiology ..... 3

SP M 456, Exercise for Special Populations ..... 3

SP M 460, Principles of Strength and Conditioning..... 3

#### General Education Requirements

Humanities / Fine Arts / History General Education requirement..... 3

Humanities, Fine Arts General Education: Art, Music or Theatre Requirement..3

#### Viewing a Wider World Requirements

C EP 451V, Introduction to Counseling..... 3

Additional Viewing a Wider World ..... 3

#### ADA Commission on Dietetic Education of the American Dietetic Association

Additional course work required for application to obtain a Verification Statement to go to a Supervised Practice program:

**Departmental Requirements**

FCSC 400, Research Methods in FCSC; or AXED 456, Introduction to Research Methods; or HL S 451, Biometrics and Health Research .....	3
FSTE 263G, Food Science I .....	4
FSTE 320, Food Microbiology or BIOL 219, Public Health Microbiology and BIOL 311L, General Microbiology Lab; <b>OR</b> BIOL 311 and BIOL 311L, General Microbiology and Lab .....	3-5
FSTE 447, Experimental Foods .....	3
HNDS 363, Quality Food Production and Service .....	4
HNDS 430, Food Service Organization and Management .....	3

**Nondepartmental Requirements**

ACCT 251, Management Accounting; or ACCT 252, Financial Accounting .....	3
GEOG 315V, World Agriculture and Food Problems .....	3
MGT 309, Human Behavior in Organizations or MGT 332, Human Resources Management .....	3

**OPTION: Prehealth with Emphasis in Nutrition**

Students planning to attend medical or dental schools may enroll in any discipline. This option is designed to meet the requirements for entry into most medical or dental schools as well as schools associated with other health professions such as physical therapy and pharmacy. Most professional schools require chemistry (16 credits), biology (8-16 credits), calculus (3 credits) and physics (8 credits). These requirements have been incorporated into this option. In addition to the requirements needed for the delineated health professions, this option will also provide an extensive background in nutrition, which is integral to these professions. Because there is a growing interest in having multi skilled professionals, you may want to also complete the additional course work outlined at the bottom of this program of study so that you will have met the academic requirements for becoming a registered dietitian. You must have a GPA of 2.5 or better before enrolling in FCSC 400, Research Methods in FCSC; FCSE 348, Teaching in Informal Family and Consumer Sciences Settings; or HNDS 401/407, Field Experience.

Selection to professional schools is typically based on four separate but interrelated criteria: (1) evaluation of academic transcripts, (2) evaluation of scores on admissions tests, (3) letters of recommendation, and (4) personal interviews. The Health Professions Advisory Committee works with all prospective applicants to professional school to provide advice and information on the admissions process and to ensure that all prehealth students have the best possible opportunity of gaining admission to the school of their choice. You are expected to register with the committee no later than the first semester of your sophomore year. Check with an advisor for information.

**Departmental Requirements**

HNDS 163, Nutrition for Health, or HNDS 251, Human Nutrition .....	3
HNDS 201, Seminar 1- Becoming a Nutrition Professional .....	1
HNDS 350, Nutrition Throughout the Life Cycle .....	3
HNDS 403, Community Nutrition .....	3
HNDS 401, Field Experience-Clinical Dietetics .....	1
HNDS 407, Field Experience-Community Nutrition .....	1
HNDS 409, Seminar II- Human Nutrition and Food Science Portfolio Development .....	1
HNDS 446, Diet Therapy I .....	3
HNDS 448, Advanced Nutrition .....	3
HNDS 449, Diet Therapy II .....	3
HNDS 300+ Elective .....	3

**Nondepartmental Requirements**

A ST 311, Statistical Application .....	3
AG E 250, Life with Microcomputers or C S 110 Computer Literacy or BCIS 110, Introduction to Computer Information Systems .....	3
AXED 456, Introduction to Research Methods, or FCSC 400, Research Methods in Family and Consumer Sciences, or HL S 451, Biometrics and Health Research .....	3
BCHE 395, Biochemistry .....	3
BIOL 211G/211L, Cellular and Organismal Biology and Lab .....	3/1
BIOL 253 or BIOL/SP M 271/271L, Human Anatomy Lecture/Lab .....	3-5
BIOL 254, Human Physiology .....	3
BIOL 311/311L, General Microbiology and Lab .....	3/2

CHEM 111G, General Chemistry I .....	4
CHEM 112G, General Chemistry II .....	4
CHEM 313, Organic Chemistry I .....	3
CHEM 314, Organic Chemistry II .....	3
CHEM 315, Organic Chemistry Laboratory .....	2
COMM 253G or 265G, Communications, or AXED 201G, Effective Leadership and Communication in Agricultural Organizations .....	3
ENGL 111G, Rhetoric and Composition .....	4
ENGL 203G, Business and Professional Communication; or ENGL 218G, Technical and Scientific Communication; or ENGL 318G, Advanced Technical and Professional Communication .....	3
GOVT 100G, American National Government; or GOVT 110G, Introduction to Political Science; or GOVT 150G, American Political Issues .....	3
OEHO 120, Medical Terminology; or CHSS 310 Medical Terminology for Health and Social Services Professionals or SP M 191, Medical Terminology for Athletic Training .....	3
PHYS 211G/211GL, General Physics I .....	4
PHYS 212/212L, General Physics II .....	4
PSY 201G, Introduction to Psychology .....	3
Humanities / Fine Arts / History General Education requirement .....	3
Humanities, Fine Arts General Education: Art, Music or Theatre Requirement .....	3

**Two Viewing a Wider World**

ANTH 357V, Medical Anthropology .....	3
C EP 451V, Introduction to Counseling .....	3
Electives, departmental and nondepartmental, sufficient to bring total credits to at least 128, including 48 upper-division.	

**Students Preparing for Medical or Dental School:**

MATH 121G, College Algebra .....	3
MATH 190G, Trigonometry & Precalculus .....	4
MATH 191G, Calculus & Analytic Geometry I .....	4

**Students Preparing for Most Other Prehealth Schools:**

MATH 121G, College Algebra .....	3
MATH 142G, Calculus for Biological and Management Sciences .....	3

**To Meet Academic Requirements for Registered Dietitian**

The course work delineated above for prehealth with an emphasis in nutrition coupled with the coursework outlined below provides the academic requirements for you to obtain registration as a dietitian. A verification statement is issued upon completion of the didactic program. To get a verification statement (1) you must attain a C or higher (on campus or transfer) in the following classes: All courses with CHEM, BCHE, BIOL/SP M, FSTE and HNDS prefixes; (2) you will need to take a challenge exam related to each course if you desire to transfer in courses comparable to HNDS 446, 448 and HNDS 449; you must attain a C or higher on each exam before transfer credits will be allowed; (3) you must take at least 30 credits at New Mexico State University with 20 as upper-division (300 level or above) credits and 10 credits in HNDS (300 level or above), (4) complete, with a 75% or higher on each, a series of domain specific (Food and Nutrition; Clinical and Community Nutrition; Education and Research; Food and Nutrition Systems; Management) Exit Exams, Note: Exit Exams can be taken more than once. To further help ensure that you will be successful in our program, a supervised practice program and when taking the Commission on Dietetics Registration (CDR) National Exam, all students will be asked to sign an English Proficiency Awareness form.

Following graduation, a supervised practice experience in a hospital or institution approved by the Commission on Accreditation of Dietetic Education of the American Dietetic Association is required. Note: This experience CANNOT be met by attending professional health school. Upon successful completion of the experience, you are eligible to take the registration exam required by the Commission on Dietetic Registration of the American Dietetic Association to be a Registered Dietitian. The academic requirements delineated above and below meet ADA requirements of an Commission on Dietetic Education ADA-approved Didactic Program in Dietetics. You must work closely with advisors to assure proper scheduling of necessary courses. See Dietetics option for other requirements.

**Departmental Requirements**

FCS 181, Interpersonal Skills in Intimate Relationships .....	3
---	---

FCSE 348, Teaching in Informal Family and Consumer Sciences Settings .....	3
HNDS 263G, Food Science I .....	4
HNDS 363, Quantity Food Production & Service.....	4
HNDS 430, Food Service Organization & Management.....	3
HNDS 447, Experimental Foods.....	3

#### Nondepartmental Requirements

ACCT 251, Management Accounting; or ACCT 252, Financial Accounting.....	3
AG E 315V, World Agriculture and Food Problems.....	3
ANTH 357V, Medical Anthropology or ANTH 360V, Food and Culture Around the World, or ANTH 431, Nutritional Anthropology .....	3
MGT 332, Human Resources Management, or MGT 309, Human Behavior in Organizations, .....	3

#### MAJOR: Food Science and Technology

Students in this major will study diverse scientific disciplines including chemistry, microbiology, nutrition and engineering and then apply the principles from these disciplines to the industrial and practical aspects of product development, food processing, quality control/ quality assurance, food presentation and sensory evaluation of foods. Background courses in English, communication, biology and chemistry and core food science and technology courses covering the production, preparation, analysis, safety, nutritional and aesthetic principles provide students with a solid background in the principles needed to understand the nature, deterioration and processing of foods and the critical thinking, analytical and application skills needed to translate those principles into the selection, processing, preservation, packaging, distribution and use of a safe, adequate and high quality food supply. Concentration areas in science, engineering and technology; culinary science and meat science allow students to focus on an area of interest.

You must achieve a grade of C or higher in all classes with CHEM, BCHE, BIOL, FSTE and HNDS prefixes. You must also have a GPA of 2.5 or higher before enrolling in FCSC 400 Research Methods in FCSC, or FSTE 427/428 Food Industry Problems I and II.

#### Basic Science and Background Requirements

A ST 311, Statistical Applications, or STAT 251G, Statistics for Business and Behavioral Sciences.....	3
AG E 250, Life with Microcomputers; or C S 110, Computer Literacy; or BCIS 110, Introduction to Computerized Information Systems .....	3
AXED 201G, Effective Leadership and Communication in Agricultural Organizations; or COMM 253G, Public Speaking; or COMM 265G, Principles of Human Communication .....	3
BCHE 341, Survey of Biochemistry .....	4
BIOL 211G/ 211GL, Cellular and Organismal Biology Lab.....	4
BIOL 311/ 311L, General Microbiology and Lab.....	5
CHEM 111G/ 111GL, General Chemistry I.....	4
CHEM 112G/ 112GL, General Chemistry II.....	4
CHEM 211, Organic Chemistry.....	4
ENGL 111G, Rhetoric and Composition.....	4
ENGL 218G, Technical and Scientific Communication, or ENGL 318G, Advanced Technical and Professional Communication .....	3
MATH 142G, Calculus for Biological and Management Sciences.....	3
Humanities and Fine Arts General Education Requirements .....	6-9
Social/ Behavioral Sciences General Education Requirements .....	3-6

#### Food Science and Technology Core Requirements

ANSC 262, Introduction to Meat Science.....	3
FSTE 164G, Introduction to Food Science and Technology .....	4
FSTE 210G, Survey of Food and Agriculture Issues.....	3
FSTE 263G, Food Science I.....	4
FSTE 320, Food Microbiology.....	3
FSTE 325, Food Analysis.....	3
FSTE 331, Food Preservation.....	3
FSTE 421, Food Chemistry.....	3
FSTE 447, Experimental Foods.....	3
HNDS 163, Nutrition for Health, or HNDS 251, Human Nutrition.....	3

#### CONCENTRATIONS (select one)

##### Science, Technology and Engineering

ANSC 306, Processed Meats, or ANSC 363, Meat Technology.....	3
CH E 395V, Brewing Science and Society.....	3
FSTE 427/ 428, Food Industry Problems I and II .....	6
PHYS 211/ 211L, General Physics and Lab.....	4
One Viewing a Wider World course .....	3
Electives .....	17

##### Culinary Science

ANTH 360V, Food Culture Around the World .....	3
HRTM 231, Safety, Sanitation and Health in the Hospitality Industry .....	2
HRTM 263, Food Production and Service Fundamentals .....	3
HRTM 363, Quantity Food Production and Service .....	4
HRTM 408, Hospitality Internship.....	1
HRTM 413, Restaurant Operations Management .....	4
HRTM 414, International Food and Wine .....	3
OEHS 213, Professional Baking Operations .....	3
Electives (must include one Viewing a Wider World) .....	16

##### Meat Science

ANSC 200, Introduction to Meat Animal Production .....	3
ANSC 301, Animal and Carcass Evaluation.....	3
ANSC 306, Processed Meats.....	3
ANSC 351V, Agricultural Animals of the World.....	3
ANSC 363, Meat Technology.....	3
FSTE 427/ 428, Food Industry Problems I and II .....	6
PHYS 211/ 211L, General Physics and Lab.....	4
Electives (must include one Viewing a Wider World) .....	14

Students are encouraged to use the elective hours to complete a minor in a related area such as chemistry, microbiology, and business. Consult an advisor for requirements.

#### MINOR: Clothing, Textiles, and Fashion Merchandising

A minor in Clothing, Textiles, and Fashion Merchandising is available. The minor requires a minimum of 18 hours of which a minimum of 9 hours must be at the 300 or higher level. Specific coursework requirements may apply. See an advisor for course requirements and scheduling.

#### MINOR: Culinary Science

A minor in Culinary Science is available. The minor requires a minimum of 18 credits of which a minimum of 9 hours must be at the 300 or higher level. Specific coursework requirements apply. A student may earn a bachelor's degree in Human Nutrition and Food Science or Hotel, Restaurant and Tourism Management and a minor in Culinary Science. See an advisor for course requirements and scheduling.

#### MINOR: Family and Child Science

A minor in Family and Child Science is available. The minor requires a minimum of 18 hours of which a minimum of 9 hours must be at the 300 or higher level. Specific coursework requirements may apply. See an advisor for course requirements and scheduling.

#### MINOR: Food Science

A minor in Food Science is available. The minor requires a minimum of 18 hours of which a minimum of 9 hours must be at the 300 or higher level. Specific coursework requirements may apply. See an advisor for course requirements and scheduling.

#### MINOR: Nutrition

A minor in Nutrition is available. The minor requires a minimum of 18 hours of which a minimum of 9 hours must be at the 300 or higher level. Specific coursework requirements may apply. See an advisor for course requirements and scheduling.

## FISH, WILDLIFE and CONSERVATION ECOLOGY

### Professor Martha Desmond, interim department head

**Professors** Andersen, Valdez; **Associate Professors** Boeing, Caldwell, Cowley, Desmond, Roemer  
**(575) 646-1544; FWCE@nmsu.edu**  
<http://aces.nmsu.edu/academics/fwce/>

**DEGREE: Bachelor of Science in Agriculture**  
**MAJOR: Wildlife Science**  
**OPTIONS: Wildlife Ecology and Management**  
**Aquatic Ecology and Management**  
**MINOR: Wildlife Science**

**DEGREE: Bachelor in Conservation Ecology**  
**MAJOR: Conservation Ecology**  
**MINOR: Conservation Ecology**

### DEGREE: Bachelor of Science in Agriculture

The department of Fish, Wildlife and Conservation Ecology prepares you for careers in a variety of natural resource fields related to management of wild animal populations and the natural systems they share. Within the wildlife science major you are offered two options. The Wildlife Ecology and Management Option is for students who plan an emphasis on terrestrial organisms and the Aquatic Ecology and Management Option is for students with an emphasis on aquatic systems. To graduate with a major in Wildlife Science, an overall grade point average of 2.00 is required in courses taken in the major field and in all courses taken at NMSU. The department offers a minor in Wildlife Science for students majoring in other disciplines. The minor includes a minimum of 20 credits, with 17 credits in required courses and 3 in wildlife electives.

If you wish to become a certified wildlife biologist and eligible for work as a wildlife biologist with the federal government you should have a total of 9 credit hours of Plant Biology and, therefore, must include at least one additional elective in plant biology. If you wish to become a certified fisheries biologist, you should include the following courses in your curriculum: FWCE 432 and FWCE 482. Requirements for becoming a certified wildlife biologist are met by all options.

### New Mexico and University Requirements

#### Area I. Communications (10 credits)

AXED 201GG or COMM 253G or COMM 265G .....3  
 ENGL 111G.....4  
 ENGL 218G or 318G .....3

#### Area II. Mathematics (3 credits)

MATH 142G or MATH 191G (MATH 121 prerequisite).....3

#### Area III. Science, with Laboratory (8 credits)

BIOL 111G/111GL.....4  
 PHYS 110G or PHYS 211G/212GL.....4

#### Area IV. Social/Behavioral Sciences (6-9 credits)

ECON 251G or ECON 252G .....3  
 See Catalog .....3-6

#### Area V. Humanities and Fine Arts (6-9 credits)

See Catalog ..... 6-9

### Viewing a Wider World (6 credits, for a detailed description of these requirements see p. 15).

Requirements fulfilled for College of Arts and Sciences.

See Catalog .....3

### Departmental Requirements

#### Extra-Departmental Core Courses

A ST 311, Statistical Applications.....3  
 AG E 111, Freshman Orientation.....1

AGRO 305/BIOL 305, Principles of Genetics.....3  
 BIOL 111G and 111GL, Natural History of Life (and Laboratory).....4  
 BIOL 211G, Cellular and Organismal Biology .....4  
 BIOL 313, Structure and Function of Plants.....3  
 BIOL 322, Zoology, .....3  
 CHEM 111G, General Chemistry I.....4  
 CHEM 112G, General Chemistry II .....4  
*(Students requiring additional help with chemistry are encouraged to also take CHEM 101 and 102 – General Supplemental Instruction. Students intending to pursue graduate studies should also take CHEM 211)*  
 GOVT 424, Environmental Policy .....3  
 RGSC 307/316, Range Plants and Grasses.....5  
**OR** BIOL 312, Plant Taxonomy.....3  
 SOIL 252, Soils  
**OR** GEOL 111G, Survey of Geology .....4

### Departmental Core Courses

FWCE 110, Introduction to Natural Resource Management .....3  
*(Off campus students can take FWCE 110 Distance Education)*  
 FWCE 255, Principles of Fish and Wildlife Management.....3  
 FWCE 301, Wildlife Ecology .....3  
 FWCE 330, Natural History of the Vertebrates.....4  
 FWCE 393, Professional Experience .....3  
 FWCE 402, Seminar in Natural Resource Management.....1  
 FWCE 409, Introduction to Population Ecology .....3  
 FWCE 462/ BIOL 462, Conservation Biology .....3  
 FWCE 464, Management of Aquatic and Terrestrial Systems .....4  
 Quantitative Techniques – take one of the 3 classes below  
 BIOL 488, Principles of Conservation Genetics .....3  
 FWCE 455, Environmental Risks and Decisions .....3  
 FWCE 488, Conservation Genetics .....3

### STUDENTS MUST DECLARE ONE OF THE TWO FOLLOWING OPTIONS

At least two classes must be a taxonomy class (e.g., Invertebrate Zoology, Entomology, Ichthyology, Herpetology, Avian Ecology or Ornithology, Mammalogy). A maximum of 3 credits of "Problems" can count towards the Option. More credits can be taken towards the degree.

**Wildlife Ecology & Management Option** (4 classes: 1 management, 2 organismal plus 1 class from the aquatic option)

#### Category I: Management

FWCE 359, Advanced Studies in Fishery and Wildlife Sciences (min. GPA 3.0) ..3  
 FWCE 437, Wildlife Damage Management .....3  
 FWCE 466, Advanced Management of Mammals.....3  
 FWCE 536, Advanced Avian Ecology .....3  
 RGSC 323, Rangeland Restoration Ecology  
**OR** RGSC 440, Rangeland Resource Ecology.....3

#### Category 2: Organismal Biology

EPWS 303, Economic Entomology .....4  
 EPWS 462, Parasitology .....4  
 FWCE 360, Introduction to Wildlife Behavior or BIOL 439, Animal Behavior .....3  
 FWCE 430, Avian Field Ecology or BIOL 447, Ornithology .....4  
 FWCE 431, Mammalogy.....3  
 FWCE 432, Environmental Biology of Fishes .....4  
**OR** ANSC 370 (4) or BIOL 314 (3) or BIOL 377 or BIOL 381 (3) or BIOL 442 or BIOL 474, Physiology class

#### Category 3: Independent Study

FWCE 448, Problems\* ..... 1-3  
 FWCE 450, Special Topics..... 1-4  
 \* consent of instructor is needed

**Aquatic Ecology & Management Option** (4 classes: at least 1 from each category, plus 1 class from Wildlife Option)

#### Category 1: Management

FWCE 359, Advanced Studies in Fishery and Wildlife Sciences (min. GPA 3.0) ..3



FWCE 459, Aquatic Ecology.....	4
RGSC 318, Watershed Management .....	3

**Category 2: Organismal Biology**

BIOL 465, Invertebrate Zoology .....	4
EPWS 435, Aquatic and Immature Insects.....	4
EPWS 462, Parasitology .....	4
FWCE 432, Environmental Biology of Fishes .....	4
FWCE 482, Ichthyology .....	4
<b>OR</b> ANSC 370 (4) or BIOL 314 (3) or BIOL 377 or BIOL 381 (3) or BIOL 442, or BIOL 474, Physiology class	

**Category 3: Independent Study**

FWCE 448, Problems * .....	1-3
FWCE 450, Special Topics.....	1-4

\*consent of instructor is needed

**ADDITIONAL ELECTIVES**

Take additional credits so the total adds up to at least 128 credits including 55 credits 300- and 400-level classes.

Students are encouraged to pursue a minor course of study with a department of their choosing.

Compatible minors include, but are not limited to, accounting, animal science, biology, business administration, chemistry, environmental science, forensic sciences, geography, journalism, management, and range science.

**Notes:**

1. No more than 6 credits of Physical Education classes will count towards your degree.
2. Maximum of two grades of 'D' in FWCE classes will count towards a student's degree.

**Minor: Wildlife Science**

The Department offers a minor in Wildlife Science for students majoring in other disciplines. The minor includes a minimum of 20 credits, with 17 credits required courses and 3 in wildlife electives.

FWCE 255, Principles of Fish and Wildlife Management.....	3
FWCE 301, Wildlife Ecology.....	3
FWCE 330, Natural History of Vertebrates.....	4
FWCE 462/BIOL 462, Conservation Ecology .....	3
FWCE 464, Management of Aquatic and Terrestrial Systems .....	4
+3 credits of FWCE Elective	

**DEGREE: Bachelor in Conservation Ecology****MAJOR: Conservation Ecology****MINOR: Conservation Ecology****Codirectors of the Program:****Michele Nishiguchi**, Ph.D., department head, Biology**Raul Valdez**, Ph.D., department head, Fishery, Wildlife, and Conservation Ecology**Program Participants:****Professors** Boecklen, Houde, Milligan, Nishiguchi, G.Smith; **Associate****Professors** M. Anderson, Bailey, Boren, Cowley, Desmond, Gustafson, Hanley, Prezler, Roemer, Wright; **Assistant Professors** Boeing, Throop.

New Mexico State University offers an interdisciplinary, undergraduate program in Conservation Ecology. The goal of this program is to train biologists for the current and future challenges that we face in the conservation and wise use of our Earth's natural resources. An overriding principle of the program is to provide a solid foundation in basic science coupled with a practical approach towards sustainability and stewardship. The curriculum encompasses several disciplines and includes a wide variety of courses from Biology, Fish, Wildlife and Conservation Ecology, Geography, Government, and Range Science.

The education experience will provide students with an overview of global biodiversity and an understanding of the ecological and evolutionary processes that have created and sustained it. Courses in population and community ecology coupled with population viability analysis and risk assessment will give students the necessary background to understand the theory and development of these fields as well as the tools to tackle real-world problems. Courses in basic genetics, evolution, and conservation genetics will expose students to the importance of conserving genetic variation in order to maintain adaptive poten-

tial within populations, thereby sustaining the evolutionary process. Students will also receive background on wildlife law and environmental policy, information vital for assisting governing bodies in making decisions regarding the protection and wise use of our natural resources. Skills obtained in the application of geographic information systems, molecular genetics, and professional communication can also be acquired through various electives. In sum, we seek to provide undergraduate students with an education that will allow them the opportunity to contribute to the conservation of all life on Earth.

The requirements are listed below. In addition each required course must be passed with a grade of C or better.

**DEGREE REQUIREMENTS****New Mexico and University Requirements****Area I. Communications (10 credits)**

COMM 265G .....	3
ENGL 111G.....	4
ENGL 311 or 318G .....	3

**Area II. Mathematics (3 credits)**

MATH 121 and MATH 142G or MATH 191/192.....	3
---	---

**Area III. Science, with Laboratory (8 credits)**

BIOL 111G/111GL.....	4
PHYS 211G/211GL.....	4

**Area IV. Social/Behavioral Sciences (6-9 credits)**

ECON 251G .....	3
See Catalog .....	3-6

**Area V. Humanities and Fine Arts (6-9 credits)**

See Catalog .....	6-9
-------------------	-----

NOTE: Areas IV and V are linked; you must take a total of 15 credits

between the two areas, for example, either 9 credits in Area IV and 6 credits in Area V or vice versa.

**Viewing a Wider World (6 credits, for a detailed description of these requirements see p. 15).**

Requirements fulfilled for College of Arts and Sciences and College of Business.

**Core Curriculum**

A ST 311, Statistical Applications.....	3
BCHE 341, Survey of Biochemistry .....	3
CHEM 111G, General Chemistry I.....	4
CHEM 112G, General Chemistry II .....	4
CHEM 211, Organic Chemistry.....	4
C S Elective - Any Computer Science course 100 or above, or AXED 250G, Life with Microcomputers .....	3
PHYS 212/212L, General Physics II/Laboratory .....	4
Physiology—Any physiology course among the following: .....	3/4
FWCE 432, BIOL 311, 314, 377, 381, 474, 442, ANSC 370	
ECON 337V, Natural Resource Economics.....	3

**Major Requirements (43-45 credits)**

BIOL 111G, Natural History of Life.....	3
BIOL 111GL, Natural History of Life Laboratory .....	1
BIOL 211G, Cellular and Organismal Biology .....	3
BIOL 211GL, Cellular and Organismal Biology Laboratory.....	1
BIOL 301, Principles of Ecology or FWCE 301, Wildlife Ecology.....	3
BIOL 305 or AGRO 305, Principles of Genetics.....	3
BIOL 467, Evolution.....	3
BIOL 312, Plant Taxonomy, or RGSC 307, Rangeland Grasses, AND RGSC 316, Rangeland Plants.....	3
BIOL 313, Structure and Function of Plants.....	3
BIOL 322, Zoology.....	3
FWCE 255, Principles of Fish and Wildlife Management.....	3
FWCE 330, Natural History of the Vertebrates.....	4
FWCE 402, Seminar in Natural Resource Management.....	1

FWCE 409, Introduction to Population Ecology, or BIOL 470, Developmental Biology .....3

FWCE 462 or BIOL 462, Conservation Biology.....3

**Requirements in Diversity of Life: Any two courses (6-8 credits)**

BIOL 433/433L, Insect Biology/Laboratory .....4

BIOL 445, Herpetology.....3

BIOL 465, Invertebrate Zoology .....4

FWCE 430, Avian Field Ecology, or BIOL 447, Ornithology .....4

FWCE 431, Mammalogy.....3

FWCE 482, Ichthyology .....3

**Additional courses**

Electives to bring total to 128 credits including 54 upper division credits

**Recommended Electives**

BIOL 488, Principals of Conservation Genetics or FWCE 488, Conservation Genetics .....3

BIOL 489, Genetic Aspects of Population Biology .....3

FWCE 464, Management of Aquatic and Terrestrial Systems .....3

GEOL 381, Cartography and Geographic Information Systems .....3

GEOG 481, Fundamentals of Geographic Information Systems.....3

**Other Related Courses**

GEOL 111G, Survey of Geology .....4

GEOL 295, Environmental Geology.....3

GEOL 424, Soil Chemistry.....3

GOVT 378, U.S.-Mexico Border Politics .....3

HIST 400, Special Topics.....3

HIST 429, Plague, Plunder, and Preservation: American Environmental.....3

RGSC 318, Watershed Management .....3

RGSC 325, Rangeland Restoration Ecology.....3

RGSC 452, Rangeland Analysis.....3

TOX 423, Environmental Toxicology .....3

**MINOR: Conservation Ecology**

A minor in conservation ecology is available for students who choose to major in other areas, but wish to include conservation ecology in their academic training. The minor must include a minimum of 20 credits in the discipline with 9 of these coming from upper-division courses.

**Requirements**

Core Curriculum (17 credits)

BIOL 111G, Natural History of Life .....3

BIOL 111GL, Natural History of Life, Lab.....1

FWCE 301, Wildlife Ecology or BIOL 301, Principles of Ecology .....3

FWCE 462 or BIOL 462, Conservation Biology .....3

FWCE 330, Natural History of the Vertebrates.....4

**Conservation (3 Credits)**

BIOL 467, Evolution.....3

BIOL 488, Principles of Conservation Genetics .....3

FWCE 409, Introduction to Population Ecology .....3

FWCE 464, Management of Aquatic and Terrestrial Systems .....3

## PLANT and ENVIRONMENTAL SCIENCES

**Richard Pratt, department head**

**Professors** Bosland, Cramer, Guldán, Leinauer, Lindemann, Mexal, Monger, O'Connell, O'Neill, Picchioni, Ray, Sengupta-Gopalan, St. Hilaire, Ulery; **Associate Professors** Angadi, Flynn, Goss, Marsalis, Puppala, Shukla, Stringam, Zhang;

**Assistant Professors** DuBois, Grover, Heerema, Lombard, Uchanski, Unc, Yao  
(575) 646-3405; (575) 646-6041 (fax); (866) 884-7231 (toll free number)

<http://aces.nmsu.edu/academics/pes/>

**DEGREE: Bachelor of Science in Agriculture**

**MAJOR: Agronomy**

**OPTIONS: Crop Consulting  
General Agronomy**

**MAJOR: Horticulture**

**OPTIONS: Ornamental Horticulture  
Landscape Design  
Horticulture Business  
Crop Consulting  
General Horticulture**

**MAJOR: Soil Science**

**OPTIONS: Soils  
Environment and Resource Management  
Soil and Water Science**

**MAJOR: Turfgrass Science and Management**

**OPTIONS: Athletic Field Management  
Golf Course Management  
Turfgrass Business  
Turfgrass Science**

**DEGREE: Bachelor of Science in Environmental Science**

**MAJOR: Environmental Science**

**DEGREE: Bachelor of Science**

**MAJOR: Genetics**

**MINORS: Agronomy**

**Environmental Science  
Horticulture  
Soil Science  
Turfgrass Management**

Minors in Agronomy, Environmental Science, Horticulture, Soil Science and Turfgrass Management are available. The minor requires a minimum of 18 credits of which at least 9 hours must be at the 300 or higher level. Specific coursework requirements apply. See advisor for course requirements and scheduling.

The undergraduate program in Plant and Environmental Science prepares you for a variety of careers in agriculture and related fields. Accordingly, a flexible curriculum has been designed that will allow specific programs to be developed in consultation with your academic advisor. Programs may also be developed if you wish to prepare for advanced studies in graduate school. In addition to the courses listed for each major, 35 credits must be taken in the College of Agricultural, Consumer and Environmental Sciences, and the university general education requirements must be met.

**DEGREE: Bachelor of Science in Agriculture**

**MAJOR: Agronomy**

Agronomy is an understanding of the principles of plant and soil science and an application of these principles in the production of crops. Commercial sector careers include positions in agricultural consulting companies, agricultural seed or chemical companies, research and development with commercial companies, and farm and/or ranch management. Careers in county, state or federal agencies are in the areas of USDA, Cooperative Extension Service, Soil Conservation Service, Forest Service and Bureau of Land Management.

**Requirements of Agronomy Major**

At least 24 credits from agronomy and soil science courses with a grade of C or above, including the following:

AGRO 100G, Introduction to Plant Science .....4

AGRO 305, Principles of Genetics .....3

AGRO 365, Principles of Crop Production .....4

AGRO 447, Seminar.....1

AGRO 483, Sustainable Production of Agronomic Crops .....3

SOIL 252, Soils .....3

SOIL 252L, Soils Laboratory .....	1
SOIL 312, Soil Management and Fertility.....	3
SOIL 312L, Soil Management and Fertility Lab .....	1
Other required courses include:	
AG E 250, Life with Microcomputers .....	3
BIOL 111G, Natural History of Life, or BIOL 211G, Cellular and Organismal Biology .....	3
CHEM 111G, 112G, General Chemistry I, II.....	8
CHEM 211, Organic Chemistry.....	4
EPWS 311, Introduction to Weed Science; or EPWS 303, Economic Entomology; or EPWS 310, Plant Pathology .....	4
A ST 311, Statistical Applications.....	3
MATH – to equal the proficiency level of MATH 142G or MATH 121G .....	3

Two options are available in the agronomy major. In addition to the completion of the requirements of the major listed above, you must elect an option and complete 25 credits from the requirements for that option. To deviate from the courses required within an option, you must file a formal petition, subject to approval by departmental committee. You should develop a specific program of study in consultation with a departmental agronomy advisor.

#### OPTION: Crop Consulting

Required courses marked with an asterisk (\*).

AGRO 462, Plant Breeding* .....	3
AGRO 483, Sustainable Production of Agronomic Crops* .....	3
AGRO 492, Diagnosing Plant Disorders* .....	3
AG E 236, Agribusiness Management Principles .....	3
AG E 315V, World Agriculture and Food Problems.....	3
AG E 450, Advanced Microcomputer Applications in Agriculture .....	3
AGRO 311, Introduction to Weed Science.....	4
B A 202, Small Business Enterprise.....	3
EPWS 314, Plant Physiology.....	3
EPWS 455, Advanced Integrated Pest Management.....	3
EPWS 456, Biological Control .....	3
HORT 471, Plant Mineral Nutrition .....	3
HORT 485, Vegetable Crop Management.....	3
SOIL 312, Soil Management and Fertility.....	3
SOIL 312L, Soil Management and Fertility Lab .....	1
SOIL 456, Irrigation and Drainage .....	3
SPAN 111, Elementary Spanish I.....	4
SPAN 211, Intermediate Spanish I.....	3

#### OPTION: General Agronomy

Required courses marked with an asterisk (\*).

AG E 236, Agribusiness Management Principles .....	3
AG E 305, Marketing and Pricing Agricultural Products .....	3
AG E 315V, World Agriculture and Food Problems.....	3
AGRO 357, Climatology .....	3
AGRO 391, Internship .....	1-3
AGRO 471, Plant Mineral Nutrition* .....	3
AGRO 492, Diagnosing Plant Disorders* .....	3
BIOL 312, Plant Taxonomy .....	4
BIOL 313, Structure and Function of Plants* .....	4
BLAW 316, Legal Environment of Business .....	3
EPWS 314, Plant Physiology.....	3
HORT 250, Plant Propagation.....	3
HORT 350, Arboriculture.....	3
HORT 485, Vegetable Crop Management.....	3
RGSC 294, Rangeland Resource Management.....	3
RGSC 325, Rangeland Restoration Ecology.....	3
SOIL 456, Irrigation and Drainage .....	3

#### DEGREE: Bachelor of Science in Agriculture MAJOR: Horticulture

Horticulture includes a wide variety of topics that relate to fruit, vegetable, and ornamental crops, and their uses. Careers range from production

management to processing and marketing, retail and wholesale management, greenhouse and nursery production, floriculture, landscaping, turf management, research and development, various service activities and positions with local, state, and federal agencies.

#### Requirements of Horticulture Major

Each of the following courses is required:

BIOL 111G, Natural History of Life, or BIOL 211G, Cellular and Organismal Biology .....	3
BIOL 314, Plant Physiology.....	3
CHEM 111G, 112G, General Chemistry I, II or CHEM 114 and CHEM 211 .....	8
EPWS 303, Economic Entomology .....	4
EPWS 310, Plant Pathology .....	4
HORT 447, Seminar .....	1
MATH 142G, Calculus for the Biological and Management Sciences I; or MATH 121G, College Algebra .....	3
SOIL 252, Soils.....	3

At least 29 credits from horticulture courses with a grade of C or above.

Choose from the following courses:

HORT 100G, Introductory Plant Science .....	4
HORT 200, Special Topics .....	1-4
HORT 205, Introduction to Horticulture (online).....	3
HORT 210, Ornamental Plants I.....	4
HORT 211, Ornamental Plants II .....	4
HORT 240, Floral Quality Evaluation and Design .....	2
HORT 241, Floriculture Field Practicum .....	1
HORT 250, Plant Propagation.....	3
HORT 300, Special Topics .....	1-4
HORT 301, Introduction to Landscape Horticulture.....	3
HORT 302V, Forestry and Society.....	3
HORT 305, Principles of Genetics.....	3
HORT 307, Landscape Design.....	3
HORT 310, Medicinal Herbs.....	3
HORT 310L, Medicinal Herbs Laboratory.....	1
HORT 330V, Organic Fall Vegetable Production (f).....	3
HORT 331, Organic Spring Vegetable Production (s).....	3
HORT 340, Plant Tissue Culture Methods .....	3
HORT 350, Arboriculture.....	2
HORT 360, Biological Information Systems .....	3
HORT 365, Principles of Crop Production.....	4
HORT 377, Turf Management.....	4
HORT 391, Internship.....	1-3
HORT 447, Seminar .....	1
HORT 449, Special Problems.....	1-3
HORT 450, Special Topics .....	1-4
HORT 462, Plant Breeding.....	3
HORT 465, Landscape Construction and Maintenance .....	4
HORT 471, Plant Mineral Nutrition .....	3
HORT 484, Ornamental Plant Production and Management .....	4
HORT 485, Vegetable Crop Management.....	4
HORT 488, Greenhouse Management.....	4
HORT 492, Diagnosing Plant Disorders .....	3

Five options are available in the horticulture major. In addition to the completion of the requirements of the major listed above, you must elect an option and complete the requirements for that option. You should develop a specific program of study in consultation with a departmental horticulture advisor. If you want to apply for certification as a professional horticulturist, you should also complete HORT 305, Genetics, and either BCHE 341, Biochemistry, or CHEM 211, Organic Chemistry. To deviate from the courses required within an option, you should develop a specific program of study in consultation with a departmental horticulture advisor.

#### OPTION: General Horticulture

Select 4 courses from the following:

A ST 311 Statistical Applications.....	3
BCHE 341 Survey of Biochemistry .....	3
BCHE 342 Introductory Biochemistry Laboratory.....	1
CHEM 211 Organic Chemistry.....	4
HORT 210 Ornamental Plants.....	4
HORT 211 Ornamental Plants.....	4

HORT 250 Plant Propagation.....	3
HORT 301 Intro to Landscape Hort.....	3
HORT 305 Principles of Genetics.....	3
HORT 307 Landscape Design.....	3
HORT 315 Crop Physiology.....	3
HORT 365 Principles of Crop Production.....	4
HORT 420 Postharvest Biology & Technology.....	4
HORT 462 Plant Breeding.....	3
HORT 465 Landscape Construction and Maintenance.....	4
HORT 471 Plant Mineral Nutrition.....	3
HORT 484 Ornamental Plant Prod & Management.....	4
HORT 485 Vegetable Crop Management.....	3
HORT 488 Greenhouse Management.....	3
HORT 492 Diagnosing Plant Disorders.....	3
<b>Select 8 courses from the following:</b>	
A ST 311 Statistical Application.....	3
ACCT 251 Management Accounting.....	3
ACCT 252 Financial Accounting.....	3
A EN 372 Landscape Irrigation Design.....	3
AG E 236 Agribusiness Mgmt. Principles.....	3
AG E 250G Life with Microcomputers.....	3
AG E 305 Mktg & Pricing Agric. Prod.....	3
AG E 315V World Agriculture & Food Problems.....	3
AG E 425 Agribusiness Fin. Mgmt.....	3
AG E 450 Adv. Microcomputer Appls. In Agri.....	3
AGRO 303V Genetics and Society.....	3
AGRO 311 Introduction to Weed Science.....	4
AGRO 483 Sustainable production of Agronomic Crops.....	3
ANSC 423 Animal Breeding.....	3
ART 150 Drawing I or ART 151 Drawing II.....	3
AXED 331 Agricultural Structures.....	3
BCHE 396 Biochemistry II.....	3
BCHE 397 Experimental Biochemistry Lab.....	3
BCHE 494 Techniques in Genetic Engineering.....	4
BIOL 301 Principles of Ecology.....	3
BIOL 313 Structure & Function of Plants.....	3
BIOL 467 Evolution.....	3
BIOL 478 Molecular Biology of Microorganisms.....	3
BLAW 316 Legal Environment of Business.....	3
BLAW 385V Consumers & Law.....	3
BUSA 111 Business in a Global Society.....	3
ECON 251G Principles of Macroeconomics.....	3
ECON 252G Principles of Microeconomics.....	3
EPWS 301 Agricultural Biotechnology.....	3
EPWS 373 Fungal Biology.....	3
EPWS 452 Applied Pesticide Technology.....	3
EPWS 455 Advanced Insect Pest Mgmt.....	3
EPWS 456 Biological Control.....	3
EPWS 481 Plant Nematology.....	3
E T 106 Drafting Concepts/Comp. Drafting Fund. I.....	4
FSTE 320 Food Microbiology.....	3
FSTE 421 Food Chemistry.....	3
GENE 305L Genetic Techniques.....	1
HORT 340 Plant Tissue Culture Methods.....	3
HORT 449 Special Prob. (Indep. Res.).....	1-3
HORT 462 Plant Breeding.....	3
HORT 486 Intermediate Genetics.....	3
MGT 309 Human Behavior in Organizations.....	3
MGT 315V Human Relations in Organizations.....	3
MGT 332 Human Resources Management.....	3
MKTG 303 Principles of Marketing.....	3
MKTG 305 Marketing & Pricing Ag Products.....	3

MKTG 313 Retail Management.....	3
MOLB 470 Bioinformatics and Genome Analysis.....	3
OEMN 150 Landscape Irrigation Systems.....	4
SOIL 312 Soil Mgmt. & Fertility.....	4
SOIL 350 Soils and Land Use.....	3
SOIL 456 Irrigation and Drainage.....	3
SOIL 476 Soil Microbiology.....	3
SPAN 111 Elementary Spanish I.....	4
SPAN 211 Intermediate Spanish II.....	3

**OPTION: Ornamental Horticulture****Select 4 courses from the following list:**

HORT 210 or 211, Ornamental Plants I, II.....	4
HORT 250, Plant Propagation.....	3
HORT 301, Introduction to Landscape Horticulture.....	3
HORT 365, Principles of Crop Production.....	4
HORT 484, Ornamental Plant Production and Management.....	4
HORT 488, Greenhouse Management.....	4

**Select 8 courses from the following list (or similar alternative courses with same prefix and level after consultation with advisor):**

AG E 236, Agribusiness Management Principles.....	3
AG E 250, Life with Microcomputers, or C S 110, Computer Literacy.....	3
AG E 305, Marketing and Pricing Agricultural Products, or MKTG 303, Principles of Marketing.....	3
AG E 425, Agribusiness Financial Management.....	3
AGRO 311, Introduction to Weed Science.....	4
BIOL 301, Principles of Ecology.....	3
BIOL 313, Structure and Function of Plants.....	3
BLAW 316, Legal Environment of Business.....	3
EPWS 452, Applied Pesticide Technology.....	3
EPWS 456, Biological Control.....	3
MGT 315V, Human Relations in Organizations.....	3
MKTG 313, Retail Management.....	3
SOIL 312, Soil Management and Fertility.....	3

**OPTION: Landscape Design****Required courses:**

HORT 210, Ornamental Plants I.....	4
HORT 211, Ornamental Plants II.....	4
HORT 307, Landscape Design.....	3
HORT 465, Landscape Construction and Maintenance.....	4

**Select 8 courses from the following:**

A EN 372, Landscape Irrigation Design or A EN 479, Irrigation Systems Design and Management.....	3
AG E 236, Agribusiness Management Principles.....	3
AG E 250, Life with Microcomputers or C S 110, Computer Literacy.....	3
ART 150, Drawing I or ART 151, Drawing II.....	3
AXED 331, Agricultural Structures.....	3
BLAW 385V, Consumers and Law.....	3
MGT 315V, Human Relations in Organizations.....	3
MKTG 303, Principles of Marketing.....	3
SOIL 350, Soils and Land Use.....	3
SOIL 456, Irrigation and Drainage.....	3
SPAN 111, Beginning Spanish.....	3

**OPTION: Horticulture Business****Select 8 courses from the following list:**

*For this option to satisfy the minor in Business Administration, nine credits must be upper division and nine credits must have one of the following prefixes: ACCT, BUSA, ECON, FIN, MGT, MKTG.*

A ST 311, Statistical Applications.....	3
ACCT 251, Management Accounting.....	3
ACCT 252, Financial Accounting.....	3
AG E 236, Agribusiness Management Principles.....	3
AG E 250, Life with Microcomputers.....	3



AG E 425, Agribusiness Financial Management.....	3
AG E 450, Advanced Microcomputer Applications in Agriculture.....	3
BLAW 316, Legal Environment of Business.....	3
BUSA 111, Business in a Global Society.....	3
ECON 251G, Principles of Macroeconomics.....	3
ECON 252G, Principles of Microeconomics.....	3
MGT 309, Human Behavior in Organizations.....	3
MGT 315V, Human Relations in Organizations.....	3
MGT 332, Human Resources Management.....	3
MKTG 303, Principles of Marketing.....	3
MKTG 305, Marketing Agricultural Products.....	3
MKTG 313, Retail Management.....	3

**OPTION: Crop Consulting****Select 4 courses from the following list:**

HORT 365, Principles of Crop Production.....	4
HORT 420, Postharvest Biology and Technology.....	4
HORT 462, Plant Breeding.....	3
HORT 471, Plant Mineral Nutrition.....	3
HORT 485, Vegetable Crop Management.....	3
HORT 492, Diagnosing Plant Disorders.....	3

**Select 8 courses from the following:**

AG E 236, Agribusiness Management Principles.....	3
AG E 250, Life with Microcomputers.....	3
AG E 315V, World Agriculture and Food Problems.....	3
AG E 450, Advanced Microcomputer Applications in Agriculture.....	3
AGRO 311, Introduction to Weed Science.....	4
AGRO 483, Sustainable Production of Agronomic Crops.....	3
BIOL 301, Principles of Ecology.....	3
BIOL 313, Structure and Function of Plants.....	3
EPWS 373, Fungal Biology.....	3
EPWS 455, Advanced Integrated Pest Management.....	3
EPWS 456, Biological Control.....	3
EPWS 481, Plant Nematology.....	3
FSTE 320, Food Microbiology.....	3
FSTE 421, Food Chemistry.....	3
SOIL 312, Soil Management and Fertility.....	3
SOIL 456, Irrigation and Drainage.....	3
SOIL 476, Soil Microbiology.....	3
SPAN 111, Elementary Spanish I.....	4
SPAN 211, Intermediate Spanish I.....	3

**DEGREE: Bachelor of Science in Agriculture****MAJOR: Soil Science**

Soil scientists are concerned with the physical, chemical, and biological characteristics and behaviors of soils, their description and classification, and their management for both agricultural and non-agricultural uses. Career opportunities include jobs with industry, environmental consulting firms, and federal, state, and local governments working on various environmental, agricultural, and ecological projects.

**Requirements of Soil Science Major**

In addition to the courses listed for each major, you must take 35 credits in the College of Agricultural, Consumer and Environmental Sciences, and you must meet university general education requirements. At least 24 credits of soil science related courses with a grade of C or above including:

SOIL 252, Soils.....	3
SOIL 252L, Soils Laboratory.....	1
SOIL 312, Soil Management and Fertility.....	3
SOIL 312L, Soil Management and Fertility Lab.....	1
SOIL 447, Seminar.....	1

**Four of the following courses:**

SOIL 424, Soil Chemistry.....	3
SOIL 456, Irrigation and Drainage.....	3
SOIL 472, Soil Morphology and Classification.....	4

SOIL 476, Soil Microbiology.....	3
SOIL 477, Environmental Soil Physics.....	3

**Other required courses include:**

Two Biology courses (6 credits) from the following:

BIOL 111G, Natural History of Life.....	3
BIOL 211G, Cellular and Organismal Biology.....	3
BIOL 311, Microbiology.....	3
CHEM 111G, 112G, General Chemistry I, II.....	8
One additional CHEM course above CHEM 200, except CHEM 310V.....	3-4
GEOL 111G, Survey of Geology.....	4
MATH 142G, Calculus for the Biological and Management Sciences I or MATH 191G, Calculus and Analytic Geometry I.....	3
PHYS 211G, General Physics I.....	3

**Soil Science Options**

Three options are available in soil science. In each case, your academic advisor has a list of appropriate courses.

**OPTION: Soils**

Crop production and plant growth are emphasized in the general soils option. Soil management, soil conservation, and soil reclamation are related to plant growth for those students interested in both private industry and government employment opportunities as well as farm management. You must select one course from each of the four following subject matter areas and a total of at least ten courses (30 credits): soil, water or range management; crop production or protection; farm and ranch management and economics; math, statistical, or computer sciences.

**OPTION: Environment and Resource Management**

Soil science is integrated into the management of the environment and natural resources. Students interested in careers of conservation, environmental management, urban planning, waste disposal, and related fields in government and industry may choose from a variety of course offerings. The economic and social implications as well as the technological aspects of resource management are included in the option courses. You must select one course from each of the four following subject matter areas and a total of at least ten courses (30 credits): soil, water, wildlife, or range conservation and economics; ecology, plant biology, or crop production; earth, mineral, or climatic resources; math, statistical, or computer sciences.

**OPTION: Soil and Water Science**

The soil and water science option is for students interested in careers in water management and water quality. Employment opportunities exist with irrigation districts, consulting firms, and government agencies dealing with water management and quality. The optimum use of water in semi-arid areas is emphasized through selection of courses in the technical and social sciences. You must select one course from each of the four following subject matter areas and a total of at least ten courses (30 credits): soil and water engineering; ecology; crop production and protection; math, statistical, or computer sciences.

**DEGREE: Bachelor of Science in Agriculture****MAJOR: Turfgrass Science and Management**

Turfgrass managers help build, maintain, and manage golf courses, athletic fields, parks, and other recreational areas. The curriculum of each option allows you to focus on a specific segment of the turfgrass industry. All majors are required to pursue two internships with a golf course, parks department, athletic field, lawn care operator or other acceptable turfgrass segment. A grade of C or above in all Core & Option credits is required.

**Turfgrass Science and Management Core Requirements I**

BIOL 111G, 190 or 211G, Biology.....	3
CHEM 111G, CHEM 112G, General Chemistry I, II.....	8
EPWS 311, Introduction to Weed Science.....	3
EPWS 314, Plant Physiology.....	3
HORT 377, Introduction to Turfgrass Management.....	4
HORT 378, Turfgrass Science.....	4
HORT 391, Internship (two).....	6
HORT 447, Seminar.....	1
HORT 479, Advanced Turfgrass Science.....	4

MATH 121G, College Algebra .....	3
SOIL 252, Soils .....	3

**Turfgrass Science and Management Core Requirements II (27 credits from the following related courses with a grade of C or above):**

CHEM 211, Organic Chemistry .....	4
EPWS 303, Economic Ecology .....	4
EPWS 310, Plant Pathology .....	4
HORT 100G, Introduction to Plant Science .....	4
HORT 110, Athletic Field and Golf Course Management .....	1
HORT 210, Ornamental Plants I .....	4
HORT 211, Ornamental Plants II .....	4
HORT 250, Plant Propagation .....	3
HORT 300, Special Topics .....	1-3
HORT 301, Introduction to Landscape Horticulture .....	3
HORT 305, Principles of Genetics .....	3
HORT 307, Landscape Design .....	3
HORT 350, Arboriculture .....	2
HORT 365, Principles of Crop Production .....	4
HORT 450, Special Topics .....	3
HORT 462, Plant Breeding .....	3
HORT 471, Plant Mineral Nutrition .....	3
HORT 475, Woody Plant Physiology .....	3
HORT 492, Diagnosing Plant Disorders .....	3
P E 150, Beginning Golf .....	1
P E 250, Intermediate Golf .....	1
SOIL 312, Soil Management and Fertility .....	4
SOIL 350, Soils and Land Use .....	3
SOIL 424, Soil Chemistry .....	3
SOIL 456, Irrigation and Drainage .....	3
SOIL 476, Soil Microbiology .....	4
SOIL 477, Environmental Soil Physics .....	4
SPAN 212, Intermediate Spanish II .....	3

**OPTION: Athletic Field Management**

**Athletics**

Select 7 credits from the following:

BLAW 313, Sports Law .....	3
P E 117, Beginning Soccer .....	1
P E 147, Beginning Tennis .....	1
P E 150, Beginning Golf .....	1
P E 247, Intermediate Tennis .....	1
P E 250, Intermediate Golf .....	1
PE P 218, Outdoor Activity .....	1
PE P 296, Theory of Coaching .....	3
PE P 302, Coaching Baseball .....	2
PE P 306, Coaching Softball .....	2
PE P 321, Team Sports I .....	2
PE P 322, Team Sports II .....	2
PE P 323, Racquet Sports .....	2
PE P 394, Theory and Techniques of Sports & Games II .....	2

**Business**

Select 6 credits from the following:

AG E 236, Agribusiness Management Principles .....	3
ECON 337V, Natural Resource Economics .....	3
ECON 384V, Water Resource Economics .....	3
ECON 406, The Economics of Sports .....	3
FIN 206, Introduction to Finance; or FIN 341, Financial Analysis and Markets ...	3
MGT 315V, Human Relations in Organizations; or MGT 309, Human Behavior in Organizations .....	3
MGT 332, Human Resources Management .....	3
MKTG 454, Sports Marketing .....	3
SPAN 212, Intermediate Spanish II .....	3

**Technical**

Select 3 credits from the following:

A EN 372, Landscape Irrigation Design .....	3
AXED 303, Small Engine Technology .....	3
E T 106, Drafting Concepts/Computer Drawing Fundamentals I .....	4
HORT 300, Special Topics .....	1-3
OEPB 100, Basic Plumbing Materials and Systems .....	5

**OPTION: Golf Course Management**

**Business**

Select 6 credits from the following:

AG E 236, Agribusiness Management Principles .....	3
BLAW 313, Sports Law .....	3
ECON 337V, Natural Resource Economics .....	3
ECON 384V, Water Resource Economics .....	3
ECON 406, The Economics of Sports .....	3
FIN 206, Introduction to Finance; or FIN 341, Financial Analysis and Markets ...	3
MGT 315V, Human Relations in Organizations; or MGT 309, Human Resources in Business .....	3
MGT 332, Human Resources Management .....	3
MKTG 454, Sports Marketing .....	3

**Science**

Select 6 credits from the following:

BIOL 221, Introductory Microbiology .....	3
BIOL 311, General Microbiology .....	3
BIOL 312, Plant Taxonomy .....	3
BIOL 313, Structure and Function of Plants .....	3
CHEM 211, Organic Chemistry .....	4
EPWS 303, Economic Entomology .....	4
EPWS 310, Plant Pathology .....	4
EPWS 420, Environmental Fate Pesticides .....	3
EPWS 455, Advanced Integrated Pest Management .....	3
EPWS 456, Biological Control .....	3

**Technical**

Select 3 credits from the following:

A EN 372, Landscape Irrigation Design .....	3
AXED 303, Small Engine Technology .....	3
E T 106, Drafting Concepts/Computer Drawing Fundamentals I .....	4
HORT 300, Special Topics .....	1-3
OEPB 100, Basic Plumbing Materials and Systems .....	5

**OPTION: Turfgrass Business**

**Personnel Management**

Select 6 credits from the following:

MGT 315V, Human Relations in Org. or MGT 309, Human Resources in Business ..	3
MGT 332, Human Resources Management .....	3
MGT 333, Training and Development .....	3
MGT 359, The Management of Diversity .....	3
SPAN 212, Intermediate Spanish II .....	3

**Economics and Finance**

Select 3 credits from the following:

ACCT 200, A Survey of Accounting .....	3
AG E 236, Agribusiness Management Principles .....	3
BLAW 313, Sports Law .....	3
ECON 337V, Natural Resource Economics .....	3
ECON 384V, Water Resource Economics .....	3
ECON 406, The Economics of Sports .....	3
FIN 206, Introduction to Finance; or FIN 341, Financial Analysis and Markets ...	3
FIN 341, Financial Analysis and Markets .....	3
MGT 351, Purchasing and Materials Management .....	3
MKTG 203, Introduction to Marketing; or MKTG 303, Principles of Marketing ...	3
MKTG 303, Principles of Marketing .....	3
MKTG 454, Sports Marketing .....	3

**Science and Technical**

Select 6 credits from the following:

A EN 372, Landscape Irrigation Design .....	3
AG E 236, Agribusiness Management Principles .....	3
AXED 303, Small Engine Technology .....	3
CHEM 211, Organic Chemistry .....	4
ET 106, Drafting Concepts/Computer Drafting Fundamentals I .....	4
EPWS 303, Economic Entomology .....	4
EPWS 310, Plant Pathology .....	4
EPWS 420, Environmental Fate of Pesticides .....	3
EPWS 455, Advanced Integrated Pest Management .....	3
EPWS 456, Biological Control .....	3
HORT 300, Special Topics .....	1-3
OEPB 100, Basic Plumbing Materials and Systems .....	5

**OPTION: Turfgrass Science****Science I**

Select 6 credits from the following:

A ST 311, Statistical Applications .....	3
A ST 456, Statistical Methods and Data Analysis .....	3
BCHE 341, Survey of Biochemistry .....	3
BCHE 395, Biochemistry .....	3
BIOL 221, Introductory Microbiology .....	3
BIOL 311, General Microbiology .....	3
BIOL 313, Structure and Function of Plants .....	3
CHEM 211, Organic Chemistry .....	4
EPWS 420, Environmental Fate of Pesticides .....	3

**Science II**

Select 6 credits from the following:

EPWS 303, Economic Entomology .....	4
EPWS 310, Plant Pathology .....	4
EPWS 455, Advanced Integrated Pest Management .....	3
EPWS 456, Biological Control .....	3
ECON 384V, Water Resource Economics .....	3

**Business and Technical**

Select 6 credits from the following:

AXED 303, Small Engine Technology .....	3
A EN 372, Landscape Irrigation Design .....	3
BLAW 313, Sports Law .....	3
ECON 337V, Natural Resource Economics .....	3
ECON 406, The Economics of Sports .....	3
FIN 206, Introduction to Finance; .....	3
FIN 341, Financial Analysis and Markets .....	3
HORT 300, Special Topics .....	1-3
MGT 309, Human Behavior in Organizations .....	3
MGT 315V, The Faces of Entrepreneurs .....	3
MGT 332, Human Resources Management .....	3
MGT 351, Supply Chain Management .....	3
MKTG 454, Sports Marketing .....	3
OEPB 100, Basic Plumbing Materials and Systems .....	5

**DEGREE: Bachelor of Science in Environmental Science****MAJOR: Environmental Science**

The environmental science major is a multidisciplinary program based on a strong general science curriculum and an environmental curriculum that focuses on environmental problems and solutions. Although administered by the Department of Plant and Environmental Sciences, a multidisciplinary advisory committee recommends curriculum and other changes to the program. Graduates are very competitive for careers in industry and government and have excellent preparation for graduate programs in a variety of fields. A grade of C must be earned in the Basic Background and Core Requirements. The program is accredited by The National Environmental Health Science and Protection Accreditation Council.

**Basic Science Background**

A ST 311, Statistical Applications .....	3
BIOL 111G, Natural History of Life .....	3
BIOL 211G, Cellular and Organismal Biology .....	3
BIOL 311, General Microbiology .....	3
CHEM 111G, CHEM 112G, General Chemistry I, II .....	8
CHEM 211, Organic Chemistry .....	4
GEOL 111G, Survey of Geology .....	4
MATH 191G, MATH 192G, Calculus and Analytic Geometry I, II .....	8
PHYS 215G, Engineering Physics I .....	3
SOIL 252, Soils .....	3
SOIL 252 L, Soils Laboratory .....	1

**Environmental Science Core**

E S 110G, Introduction to Environmental Science .....	4
E S 256, Environmental Science .....	3
E S 256 L, Environmental Science Laboratory .....	1
E S 301, Principles of Ecology .....	3
E S 312, Emergency Response to Hazardous Material Incidents .....	2
E S 330, Environmental Management Seminar I .....	1
E S 361, Basic Toxicology or .....	
E S 423, Environmental Toxicology .....	3
E S 370, Environmental Soil Science .....	3
E S 391, Internship .....	3
E S 422, Environmental Chemistry .....	3
E S 430, Environmental Management Seminar II .....	1
E S 452, Geohydrology .....	3
E S 460, Introduction to Air Pollution .....	3
E S 462, Sampling and Analysis of Environmental Contaminants .....	3
E S 470, Environmental Impacts of Land Use .....	4
FWCE 434, Aquatic Contaminants & Toxicology; or FWCE 459, Aquatic Ecology ...	4

**DEGREE: Bachelor of Science****MAJOR: Genetics****Codirectors of the Program:**

Rich Pratt, department head, Plant and Environmental Sciences

John Gustafson, department head, Biology

**Program Participants:**

**Professors:** Bernstein, Bosland, Cramer, Houde, Milligan, Nishiguchi, O'Connell, Ray, Sengupta-Gopalan, St. Hilaire; **Associate Professors:** Bailey, Curtiss, Dawe, B. Shuster, St. Zhang; **Assistant Professors:** M. Shuster

Have you ever wondered why your hair or eye color, facial features, or the build of your body resembles that of your parents, grandparents, or other close relatives? What factors are responsible for generating all the variety of colors and shapes of flowers, trees, and different types of animals? If these questions have crossed your mind, then you have been thinking about Genetics; the science of heredity. Genetics is studied at the DNA/gene/genome level (molecular genetics, biotechnology, genomics and bioinformatics), the level of organisms (classical or Mendelian genetics), and within/among populations of individuals (population and quantitative genetics). One of the most significant scientific accomplishments in history has been the use of genomic technologies to recently identify most human genes, as well as, most genes for a number of other animals, plants, fungi, and bacteria. Geneticists now have tremendous opportunities to use molecular, biochemical, mathematical, and computer science-based (bioinformatics) approaches to investigate how these genes determine observable traits. This information can be used to significantly advance human health and well being, and to meet the food and fiber needs of the world.

A degree in Genetics can provide excellent preparation for careers in academic research and technical support, teaching, agriculture, the biotechnology industry, medicine and health sciences, forensic science, technical writing, and sales or marketing. It is also an excellent background for students wishing to enter a graduate program, medical school, and veterinary school.

Undergraduates in the Genetics program must earn a grade of C or better to receive credit for required Basic Science Background and Genetics Core courses. Within the Genetics Core curriculum, Tier I courses must be taken by all majors, for a total of 28 credit hours. To accommodate differing interests among

students, a series of Tier II courses comprising 11 to 13 credits are provided. Ethical considerations of genetic based technologies will be infused throughout the curriculum, with a focused course on "Science and Ethics" in the Tier III portion of the core curriculum.

## DEGREE REQUIREMENTS

### General Education Requirements (43 credits)

#### AREA I: COMMUNICATIONS

English Composition-Level 1: ENGL 111G, ENGL 111H, or SPCD111G .....	4
English Composition-Level 2: ENGL 218G or ENGL 318G.....	3
Oral Communication: AXED 201G, COMM 253G, COMM 265G, or HON 265G.....	3

#### AREA II: MATHEMATICS/ALGEBRA

MATH 191G.....	4
----------------	---

#### AREA III: LABORATORY SCIENCE

CHEM 111G/111GL and CHEM 112G/112GL.....	8
--	---

#### AREA IV: SOCIAL/BEHAVIORAL SCIENCES .....

6-9*
------

#### AREA V: HUMANITIES AND FINE ARTS.....

6-9*
------

#### NMSU VIEWING A WIDER WORLD (see catalog for listing of courses).....

6
---

\*Total of 15 credits combined between Areas IV and V, with 6 credits in one area and 9 credits in the other area. See catalog for listing of available courses.

### Basic Science Background Requirements (42 credits)

A ST 311, Statistical Applications.....	3
BCHE 395, Biochemistry.....	3
BCHE 396, Biochemistry and Biotechnology .....	3
BIOL 111G, Natural History of Life.....	3
CHEM 111G/112G, General Chemistry I, II.....	8
CHEM 313/314, Organic Chemistry I, II .....	6
CHEM 315, Organic Chemistry Laboratory .....	2
MATH 191G and 192G, Calculus and Analytic Geometry I and II.....	8
PHYS 211G/212 General Physics I, II or PHYS 221G/222G General Physics for Life Sciences I, II.....	6

### Core Requirements (42-44 credits from Tier I, II, and III courses)

#### Tier I courses (all are required):

BCHE 494, Techniques in Genetic Engineering.....	4
BIOL 211 and 211L, Cell and Organismal Biology and Laboratory .....	4
BIOL 311/311L, General Microbiology and Laboratory.....	5
BIOL 377, Cell Biology.....	3
GENE 110, Experimental Systems in Genetics.....	1
GENE 305L, Genetic Techniques Laboratory .....	1
GENE 315, Molecular Genetics.....	3
GENE 320, Heredity and Population Genetics .....	3
GENE 440, Genetics Seminar .....	1
GENE 452, Applied Bioinformatics or MOLB 470, Bioinformatics & Genome Analysis .....	3

#### Tier II courses (choose one course from each of the following four areas):

##### Selection response:

AGRO 462, Plant Breeding .....	3
ANSC 423, Animal Breeding.....	3
BIOL 467, Evolution.....	3

##### Physiology:

ANSC 421, Physiology of Reproduction.....	3
BIOL 354, Physiology of Humans.....	3
BIOL 381, Animal Physiology.....	3
BIOL 385, An Introduction to Cancer.....	3
BIOL 451, Physiology of Microorganisms.....	3
BIOL 474, Immunology .....	3
EPWS 314, Plant Physiology.....	3
HORT 471, Plant Mineral Nutrition.....	3

##### Organism structure:

ANSC 370, Anatomy and Physiology of Farm Animals.....	4
BIOL 313, Structure and Function of Plants.....	3

BIOL 322, Zoology.....	3
BIOL 330, Comparative Anatomy and Embryology .....	4
BIOL 470, Developmental Biology.....	3
BIOL 465, Invertebrate Zoology .....	4
EPWS 303, Economic Entomology.....	4

#### Molecular Genetics:

BIOL 475, Virology .....	3
BIOL 478, Molecular Biology of Microorganisms.....	3
BIOL 482, Microbial Systematics .....	2
GENE 486, Genes and Genomes.....	3
GENE 488, Gene Regulation.....	3

#### Tier III courses (Choose one science and ethics course from the following):

AGRO 303V, Genetics and Society.....	3
HON 306V, Science, Ethics, and Society.....	3
PHIL 321, Biomedical Ethics.....	3

#### Additional courses

Electives to bring total to 128 credits including 48 upper division credits.

#### Recommended Electives (Honors College)

##### Nine credits from:

HON 205G, Life, Energy, and Evolution; HON 214, Successful Fellowship Writing; HON 225G, History of Ethics; HON 245G, Chemistry: Experiments, Laws, and Theories.

##### Six credits from:

HON 306V, Science, Ethics, & Society; HON 314, Successful Fellowship Writing; HON 322V, Science and Public Policy; HON 410, Honors Internship; HON 420, Independent Studies; HON 421, Special Topics.

##### Three credits:

HON 400, Honors Thesis.

#### Bioinformatics:

Students may pursue a minor in Bioinformatics after consulting with an advisor in the Computer Science Department. There are 19 credits of coursework required for this minor which involve: C S 171, C S 272, C S 370 or 371, and C S 486.

## SCHOOL OF HOTEL, RESTAURANT and TOURISM MANAGEMENT

### Janet L. Green, Director

*Professor* Bloomquist; *Associate Professors* Blanch, Mandabach, Stringam; *Assistant Professors* McDowall *College Assistant Professors* Albin, D. Bloomquist, Hartley, Zeck; *Instructor* Linderman  
(575) 646-5995

<http://aces.nmsu.edu/academics/shrtm/>

**DEGREE:** Bachelor of Science in Hotel, Restaurant and Tourism Management

**MAJOR:** Hotel, Restaurant and Tourism Management

**MINOR:** Hotel, Restaurant and Tourism Management

**MINOR:** Culinary Science

The mission of the School of Hotel, Restaurant and Tourism Management is to serve the needs of our constituents through innovative teaching, research, professional applications, and partnerships in a multicultural and international environment.

This bachelor's degree program prepares students for supervisory and entry-level management positions in all areas of the diverse and growing hospitality and tourism industry. The program also provides a foundation for continuing development to advance to more senior management or to pursue entrepreneurial opportunities. In this professional program, faculty, students, and industry partners bring together theory and practice to forge hospitality management excellence. The curriculum is designed to educate students as individuals and professionals in a changing society. Students will take a core curriculum until senior year, when they may then specialize in one of the two concentration areas listed, or develop an individual plan with a faculty advisor for selecting profes-



sional elective courses. A grade of C or better must be earned in each upper-division HRTM class to satisfy the requirement of the major.

Students are required to participate in an internship program that is offered only after completion of 400 hours of hospitality work experience (practicum). The HRTM 307, 408, and 409 internship sequence, which includes another 400 hours in the field, must be completed prior to enrolling in other 400-level professional electives. Thus, at the end of both the work experience practicum and the internship, students will have completed a minimum of 800 hours professional work experience in the field.

### Hotel, Restaurant and Tourism Management Core Courses

#### General Education Requirements (36 credits)

A list of specific general education requirements is available in the department. Please check with your advisor.

#### Departmental Requirements (42 credits)

HRTM 201, Introduction to Tourism.....	3
HRTM 221, Introduction to Hospitality Management.....	3
HRTM 231, Safety, Sanitation/Health in the Hospitality Industry .....	2
HRTM 263, Food Production and Service Fundamentals .....	3 (1+4P)
HRTM 301, Hotel, Restaurant and Tourism Marketing.....	3
HRTM 302, Hospitality Management Accounting .....	3
HRTM 304, Hospitality and Travel Law .....	3
HRTM 307, Professional Development .....	1
HRTM 311, Hospitality Leadership Management .....	3
HRTM 331, Hotel Operations 1 .....	3
HRTM 363, Quantity Food Production and Service .....	4
HRTM 408, Hospitality Internship.....	1
HRTM 409, HRTM Internship Seminar.....	1
HRTM 410, Hospitality Cost Control .....	3
HRTM 430, Hospitality Facilities Management.....	3
HRTM 434, Senior Capstone Experience (complete during final semester).....	3

#### Nondepartmental Requirements (23 credits)

A ST 311, Experimental Statistics (students with MATH 120, Intermediate Algebra, may substitute STAT 251G, Statistics for Business and Behavioral Sciences).....	3
ACCT 252 Financial Accounting .....	3
ECON 201G, Intro to Economics or ECON 251G and ECON 252G .....	3
FIN 341 Financial Analysis and Markets .....	3
MGT 309, Human Behavior in Organizations .....	3
MGT 332, Human Resources Management.....	3
SPAN 111, Elementary Spanish I.....	4
Any MKTG #300 and above.....	3

#### Departmental Electives (9 credits)

You must choose 9 credits from the interest area groups listed below, or in consultation with your advisor, you may combine them in any way that accommodates your special interest.

#### Hotel Management\*

The hotel/resort operations area addresses specific concepts, practices, and issues in hotel, resort, bed and breakfast, conference and contract lodging facilities management and ownership.

HRTM 404, Gaming Operations and Organization .....	3
HRTM 412, Beverage Management.....	3
HRTM 413, Restaurant Operations Management .....	4
HRTM 420, Club Management and Marketing .....	3
HRTM 423, Hospitality and Tourism Research and Applications .....	3
HRTM 431, Hotel Operations II.....	3
HRTM 432, Hotel Revenue and Sales Management.....	3
HRTM 433, Training for Hospitality Operations .....	3
HRTM 443, Meetings, Conventions and Special Events .....	3

#### Restaurant and Food Service Management\*

The restaurant and food service management areas address specific concepts, practices, and issues in restaurant, banquet, catering, and contract food service management and ownership.

HRTM 404, Gaming Operations and Organization .....	3
HRTM 412, Beverage Management.....	3
HRTM 413, Restaurant Operations Management .....	4
HRTM 414, International Food and Wine .....	3
HRTM 420, Club Management and Marketing .....	3
HRTM 423, Hospitality and Tourism Research and Applications .....	3
HRTM 433, Training for Hospitality Operations .....	3
HRTM 443, Meetings, Conventions and Special Events .....	3

#### Other HRTM Electives

HRTM 310, Colloquium II (repeat up to 2 times).....	1-2
---	-----

#### Open Electives

Twelve hours of free electives are available to meet your goals.

\*Plus a sufficient number of electives to ensure a minimum of 128 semester credits, some of which must be in courses at the 300 level or above to meet the university requirement of 48 credits at this level. These elective courses are designed to provide you with an opportunity to learn about or possibly minor in another field of study. This selection may depend on your professional career choices and interest in the specific hospitality area itself. Course requirements for minors in other areas differ; therefore, it is necessary for you to consult with your advisor.

#### MINOR: Hotel, Restaurant and Tourism Management

A minor in Hotel, Restaurant and Tourism management is available. The minor requires a minimum of 18 credits of which at least 9 hours must be at the 300 or higher level. Specific coursework requirements apply. See advisor for course requirements and scheduling.

#### MINOR: Culinary Science

A minor in Culinary Science is available. The minor requires a minimum of 18 credits of which a minimum of 9 hours must be at the 300 or higher level. Specific coursework requirements apply. A student may earn a bachelor's degree in Hotel, Restaurant and Tourism Management or Human Nutrition and Food Science and a minor in Culinary Science. See an advisor for course requirements and scheduling.

# COLLEGE of ARTS and SCIENCES

Dean • *Christa Slaton*

Associate Dean (Research and Graduate Affairs) • *Jeffrey P. Brown*

Associate Dean (Academics) • *Beth Pollack*

Associate Dean (Academic Planning and Resources) • *Lisa Bond-Maupin*

Associate Dean (Development and External Affairs) • *Kenneth Van Winkle*

Coordinator, Student Advising • *Edward Rodriguez*

Coordinator, Student Retention • *Jodie Kenney*

Coordinator, Student Records • *Hilda M. Olivas*

Coordinator, Research Center • *Matilda Evaro*

**Bachelor of Arts**—Majors in Anthropology, Art, Biology, Chemistry, Communication Studies, Computer Science, Economics, English, Foreign Languages, Government, History, Journalism and Mass Communications, Philosophy, Physics, Psychology, Sociology, Theatre Arts, Women's Studies

**Bachelor of Science**—Majors in Biology, Biochemistry, Chemistry, Computer Science, Geography, Geology, Mathematics, Microbiology, Physics

**Designated Bachelor's Degree**—in Conservation Ecology, Creative Media, Criminal Justice, Fine Arts, Genetics, Music, Music Education

Programs offered in the College of Arts and Sciences prepare students for a variety of career opportunities and for graduate study. The broad curriculum offered provides both the motivation and the tools for lifelong learning experiences.

While the ultimate responsibility for planning an academic program in compliance with university, college, and departmental requirements rests with the student, the college recognizes the importance of helping students work out appropriate academic programs. Some freshman students and unclassified/undecided arts and sciences students may be advised on academic matters in the college advising center, which is located in the west wing of Breland Hall. In addition, all students are encouraged to contact departments for specific subject area information and career planning.

Students with 36 or more credits who have declared a major are advised in the appropriate departments.

Students should consult the University section of the catalog regarding general limitations for total credit hours, independent study, and registration under S/U option. Students in the College of Arts and Sciences on academic Probation 1 are limited to 13 credit hours, and students on Probation 2 are limited to 7 credit hours. The University section of the catalog discusses registration, drop/add and withdrawal deadlines. Students may not do additional course work or repeat course exercises after the semester has ended in order to raise a grade in any course. Exceptions will be made for students completing official incompletes.

## COLLEGE DEGREE REQUIREMENTS

I. In accordance with NMSU policy, students in all majors in the College of Arts and Sciences must meet the Basic Academic Skills requirements in English and Mathematics. See "Basic Academic Skills" in the General Information, REGULATIONS section.

Basic Academic Skills rules:

1. Students must complete, with a C grade or better, the math sequence required for their major prior to enrolling in upper division courses numbered 300 or higher:  
MATH 112G, 121G, 210G, 142G, 190G, 192G; HON 210G, HON/MATH 275G; STAT 251G, 271G; A ST 251G

2. Students must complete, with a C grade or better, ENGL 111G, 111H, or SPCD 111G prior to enrolling in upper division courses numbered 300 or higher.

**NOTE:** Transfer students must complete an English course listed above and begin their Math sequence no later than their second semester at NMSU in order to continue enrolling in upper division courses numbered 300 level or higher.

3. Students whose ACT or other test scores require them to take developmental Mathematics or English courses must complete

those courses prior to enrolling in the English and Mathematics basic skills courses listed above.

II. University graduation requirements. See "Graduation Requirements" in the "General Information" chapter earlier in this catalog. Students must pass university General Education requirements and earn a minimum of 128 university level credits of which at least 48 must be upper division.

III. Some departments in the college require a second language and some do not. For those students whose major requires a second language, the following parameters apply unless otherwise specified in their departmental requirements. A student must meet one of the following requirements.

- Complete the normal foreign language course sequence: 111, 112, 211, 212. Students should enter the sequence at their proficiency level. Heritage speakers should complete the Spanish 113-213-214 sequence. Students who successfully complete either Spanish 113 or 213 or 214 (or all) may not take SPAN 111, 112, 211 or 212 for credit.
- Challenge the 212 level of Arabic, Chinese, French, German, Japanese, or Spanish, or the 214 level of Spanish for Heritage Speakers, or Portuguese.
- Obtain college certification of completion of a second language at the high school level by fulfilling one of the following:
  - Option A: For those departments requiring one year of a second language a student must pass two years of a high school language with a C or better in the last year level.
  - Option B: For those departments requiring two years of a second language a student must pass three years of a high school language with a C or better in the last year level.
- Obtain, from the head of the Department of Languages and Linguistics, certification of a working knowledge of a second language if such language is not taught at New Mexico State University.
- Obtain certification of a working knowledge of a Native American language from the American Indian program director.
- Successfully complete a regular university course taught in a language other than English. A student can receive credit only once for the same course taught in two languages.

## Accreditation

In the College of Arts and Sciences, the Department of Chemistry and Biochemistry is accredited by the American Chemical Society. Music curricula in the Department of Music are accredited by the National Association of Schools of Music. The Master of Public Administration program in the Department of Government is accredited by the National Association of Schools of Public Affairs and Administration.

- Pass a three-credit upper-division course (numbered 300 or above) taught in a foreign language by the Department of Languages and Linguistics.
- Pass CD 476, American Sign Language III with a grade of C or better.
- In the case of a foreign student who is required to take the TOEFL exam, the dean will automatically waive the foreign language requirement.

Students should satisfy the language requirement as soon as possible and take the necessary courses in consecutive semesters.

Please note: ESL or English language may not be used to fulfill the language requirements.

#### **S/U Grading Option**

Instructors may establish individual standards for an S grade, but the minimum standard for an S grade in the College of Arts and Sciences courses is a C.

#### **Developmental and Applied Credit Limitations**

The College of Arts and Sciences may accept up to 9 credits toward graduation of applied coursework, which include Occupational Education courses, BOT, CMT, UNIV (not including UNIV 150 and UNIV 350), ART (applied), DANC (applied), MUS (applied and participation), THTR (applied), NURS, A EN, AXED, AG E, AGHE, COLL, CCDL, CCDS, all lower-division RDG. Credits earned in developmental courses (N suffix) are not counted toward any arts and sciences degree. Students should contact the Student Records Center regarding the acceptability of specific courses.

In addition to the above limitation, the college will also accept a maximum of 9 credits towards graduation of applied P E and PE P courses, and ANSC 190, 191, 290, 291, 380, and 381. This restriction does not apply to PE P 185, 280, 281, 285, 286G, 295, 309, 311, 320, 341, 342, and 411.

#### **Independent Study/Directed Reading Courses**

Students are limited to six credits in any independent study course. Independent study courses include directed reading and special topic courses, which do not carry a subtitle.

#### **Distance Education Courses**

The College of Arts and Sciences offers a variety of distance education courses each semester. Specific courses can be found under departmental course listings in the Schedule of Classes. Students who successfully complete NMSU distance education courses receive the same credit as students who take an equivalent course on the Las Cruces campus. Distance education courses appear on a student's transcript in the same way as does a course taken on the Las Cruces campus.

#### **Majors, Minors and Supplementary Majors**

Students who wish to obtain a bachelor's degree must select a major field or fields. For a listing of major fields, the student should see the first page of this chapter. Course requirements for majors are listed under individual departments. Students should consult the department for current admissions requirements. Until a major is selected, the student is designated as unclassified.

Each major consists of not less than 20 credits of upper-division courses (300 and above) in a specific field. Students must earn a grade of C or better for all course requirements for a major, minor, or supplementary major, including any courses required from outside the department. Students may not count an S grade towards completion of any major, minor or supplementary major requirement unless a course is automatically S/U for all enrolled students. A student may not earn a minor that bears the same name as a bachelor's degree that the student also earns. (For example, a student earning a B.S. in Biology cannot also earn a minor in Biology.) Some departments also require specific courses outside the major field. Please refer to the departmental section of the catalog for specific nondepartmental requirements. These nondepartmental requirements must be passed with a grade of C or better. It is imperative that students consult the departmental sections of this catalog and the concerned department or departments for advice in planning to fulfill requirements for declared majors.

The requirements for academic minors in the College of Arts and Sciences are found under each offering department or program's section of this catalog. Requirements for supplementary majors are found as follows: the Supplementary Majors in Chicano Studies, Latin American Studies, and Linguistics are listed under Languages and Linguistics; the Supplementary Major in Law and Society is listed under Government; and the Supplementary Major in Applied Mathematics is listed under Mathematical Sciences.

Most students have considerable latitude in choosing elective courses. These are the courses beyond university and major requirements that a student must take to bring her or his total credits to a minimum of 128. This latitude provides students with opportunities to major in more than one field or to devise interdisciplinary programs tailored to individual interests or future career needs.

Regardless of the option elected, students should consult regularly with an advisor and keep track of their progress towards graduation using the online degree audit system STAR (Student Academic Requirements), at <http://www.my.nmsu.edu>.

### **SUPPLEMENTARY MAJORS**

**Applied Mathematics in the Department of Mathematical Sciences**

**Chicano Studies in the Department of Languages & Linguistics**

**Latin American Studies in the Department of Languages & Linguistics**

**Law and Society in the Department of Government**

**Linguistics in the Department of Language & Linguistics**

**Sustainable Development in the Department of Anthropology**

### **PREPROFESSIONAL STUDIES**

**Prehealth Studies in the Department of Biology**

**Prelaw Studies in the Department of Government**

## **AEROSPACE STUDIES**

**Lieutenant Colonel Dan Bennett, department head**

**Affiliated Faculty** Major Adams

**(575) 646-2136**

<http://www.nmsu.edu/~afrotc/>

The college Air Force Reserve Officer Training Program curriculum provides pre-professional preparation for future Air Force officers. It is designed to motivate and prepare college men and women for their initial active duty assignments as Air Force commissioned officers. The curriculum is designed to give the participating student an understanding of the military instrument of national power with emphasis on the United States Air Force and how it fits into American society. Inherent in course content and methodology are opportunities for the student to develop his or her capacities to think creatively, speak and write effectively, and to lead and manage efficiently.

The Air Force ROTC Commissioning Program is open to all qualified male and female students in all academic majors leading to a bachelor's degree as well as any student who has three years remaining at the university, including graduate study. Students with less than three years remaining may meet program entry requirements on a case by case basis. The program is divided into the General Military Course and the Professional Officer Course.

#### **Freshman and Sophomore Years (General Military Course or GMC)**

This group (AERO 121, AERO 122, AERO 221, AERO 222) provides a general background knowledge of the military establishment with emphasis on the Air Force. GMC courses may be taken out of sequence.

#### **Junior and Senior Years (Professional Officer Course or POC)**

This group (AERO 301, AERO 302, AERO 401, AERO 402) constitutes an in-depth study of topics that provides a broad preparation for a career as an Air Force officer. Students must have certain qualifications for entry and have a desire to be commissioned in the Air Force. These qualifications include, achieving a passing score on the Air Force Officer's Qualifying Test, passing a physical fitness test, and successfully completing a medical exam. They must also complete a four- or five-week summer orientation course.

Students may, with departmental approval, take POC courses out of normal sequence. However, compressed or dual enrollment in upper-division POC courses is normally prohibited. Through this department, you can also earn a minor in Aerospace Studies.

**MINOR: Aerospace Studies**

AERO 301, Air Force Leadership and Management I.....	4
AERO 302, Air Force Leadership and Management II .....	4
AERO 401, Preparation for Active Duty I .....	4
AERO 402, Preparation for Active Duty II .....	4
Six credits from among: HIST 312, Modern Latin America; HIST 341, American Military History; HIST 317, U.S. Foreign Relations to 1919; HIST 422, U.S. Foreign Relations since 1914; HIST 423, History of United States Intelligence; HIST 446, World War I; HIST 447, World War II; GOVT 360, International Relations; GOVT 443, Congress and the Legislative Process; GOVT 444, The American Presidency; GOVT 464, National Security Policy; GOVT 466, American Foreign Policy; GOVT 371, Latin American Politics; GOVT 474 European Politics; GOVT 491, Constitutional Law; MGT 315V, Human Relations in Organizations; MGT 333, Training and Development; MGT 347, Management Functions and Processes; MGT 388V, Leadership and Society; MGT 453, Leadership and Motivation; M SC310, Leading Small Organizations I; M SC 320, Leading Small Organizations II; M SC 401, Leadership Challenges and Goal Setting and/or M SC 402, Transitions to Lieutenant.....	6

## ANTHROPOLOGY

---

**Dr. Miriam S. Chaiken, department head**

**Professors** Alexander, Benefit, Chaiken, Eber (Emeritus), Rushforth, Staski (Emeritus), Trevathan (Emeritus), Walker; **Associate Professors** McCrossin, Stanford; **Assistant Professors** Arakawa; Scott; **College Professor** Connelly; **College Associate Professors** O'Leary, Pepion; **Adjunct Professors** Berryman, LeBeau, Loendorf; **Adjunct Assistant Professors** Lamb, Marinas-Feliner; Robles; Rochelle (575) 646-2725

<http://www.nmsu.edu/~anthro/>

**DEGREE: Bachelor of Arts**

**MAJOR: Anthropology**

**MINORS: Native American Studies  
Anthropology  
Religious Studies**

**MAJOR: Anthropology**

The major in anthropology provides a broadly based education in the social and biological sciences. The undergraduate program prepares students for careers in many areas, such as cultural resource management (or contract archaeology), archaeological research, forensic sciences, health services, cross-cultural field work, community development programs, and museum work. Anthropology students can continue for advanced degrees in teaching, museology, other social sciences, and anthropology.

**Departmental Requirements**

ANTH 301, Cultural Anthropology .....	3
ANTH 315, Introduction to Archaeology .....	3
ANTH 320, Anthropological Linguistics.....	3
ANTH 350, Anthropological Theory.....	3
ANTH 355, Physical Anthropology.....	3
ANTH 406, Introduction to Anthropological Practice .....	3

Additional electives in anthropology to bring total credits in major to 36, including 27 upper-division.

**Nondepartmental Requirements**

(A grade of C or better must be earned.)

ENGL 218G, Technical and Scientific Communication, or ENGL318G, Advanced Technical and Professional Communication.....	3
MATH 210 or above .....	3
Electives: Sufficient to bring total credits to 128, including 48 upper-division.	

**Second Language**

Students seeking the B.A. in Anthropology must meet the second language requirement. The requirement is considered satisfied when a student provides evidence that at least the 212 or 214 level of language proficiency has been attained.

**MINOR: Native American Studies**

Students must pass a total of 18 credits of which at least 9 of which must be upper division. A grade of "C" or better must be obtained for each course. Students may count S grades only in courses in which all grades are S/U, and no more than 6 hours of "S" credit can be accepted. Students can count no more than 3 credits in independent studies, readings, or special topics courses. Such courses, marked below with an asterisk (\*), must focus upon Native Americans and must be approved in advance by the director of the minor program, specifying the semester during which a student takes such a course. Please contact the Department of Anthropology regarding the minor. Students may count no more than 9 credits in Anthropology (except that ANTH 330V/HIST 330V/SOC 330V, Introduction to Religious Studies, may be included above this limit) and no more than 6 credits in History.

Eighteen credits from among ANTH 110, New World Prehistory; ANTH 115, Native Peoples of North America; ANTH 116, Native Peoples of the American Southwest; ANTH 304, Contemporary Southwest Native Americans; ANTH 305V, Contemporary Native Americans; ANTH 330V/HIST 330V/ SOC 330V, Introduction to Religious Studies; ANTH 405, Native Cultures of North America; \*ANTH 449H, Directed Reading Honors; ANTH 455, Federal Indian Policy; ANTH 467, Archaeology of the American Southwest; \*ANTH 497, Special Topics; \*GOVT 406, Independent Study; GOVT 354, Native American Politics; HIST 309, American Indian History I; HIST 310, American Indian History II; \*HIST 449, Readings; \*HIST 489, Projects in History; HL S 460, American Indian Health; S WK 464, Social Work with American Indian Communities; and \*W S 250, Special Topics or by approval of Minor Advisor..... 18

**MINOR: Anthropology**

Students who earn a B.A. in Anthropology may not also earn a minor in Anthropology. Students earning the minor must pass 18 credits with grades of C or higher. Nine of the credits must be upper division. Students may count S grades only in courses in which all grades are S/U.

One of the following: ANTH 301, Cultural Anthropology; ANTH 315, Introduction to Archaeology; ANTH 320, Anthropological Linguistics; ANTH 350, Anthropological Theory; or ANTH 355, Physical Anthropology.....3  
Fifteen additional Anthropology credits..... 15

**MINOR: Religious Studies**

Students must pass 18 credits of which at least 9 are upper division. Students must earn C or higher grades and cannot count S/U courses unless all grades in the course must be S/U. No more than 9 credits (upper or lower division) can be earned in any one department. Students may not earn more than 3 credits total in independent studies or special readings courses and must receive approval from the minor advisor to count these credits. Courses that may be eligible as special topics courses when offered with specific subtitles are asterisked. Please contact the Department of Anthropology regarding the minor. ANTH 330V/ HIST 330V/ SOC 330V, Introduction to Religious Studies..... 3

Fifteen additional credits from among: ANTH 115, Native Peoples of North America; ANTH 304, Contemporary Southwest Native Americans; ANTH 334, Anthropology of Art; ANTH 405, Native Cultures of North America; ANTH 414, The Archaeology of Religion; ANTH 432, Anthropology of Religion; ANTH 455, Federal Indian Policy; ART 305, Medieval Art; ART 306, Medieval Manuscript Illumination; ART 310, Native American Art; ART 311, Art of China; ART 320, Art and Architecture in Pre-Columbian Meso-America; ART 321, Pre-Columbian Art and Architecture of the Andes; ART 323, Italian Renaissance Art; ART 325 Northern Renaissance Art; ART 478, Bizarre World of Hieronymus Bosch; DANC 451V, World Dance; ENGL 243, The Bible as Literature; ENGL 341V, American Indian Literature; ENGL 351, Folklore; ENGL 361V, Southwest Folklore; ENGL 390V, The Arthurian Tradition; ENGL 392, Mythology; \*ENGL 403, Advanced Study in American Literature; ENGL 407, Milton; \*ENGL 421, Advanced Study in a Literary Period or Movement; \*ENGL 423, Advanced Study in a Major Author; \*ENGL 425, Advanced Study in Comparative Literature; varying 400-level numbers for ENGL, Dying for Love: Sex and the Spirit in Early English Poetry and ENGL, Women Reading the Bible, from Late Antiquity to Puritan America;



GOVT 387, Religion and Politics; HIST 101G, Roots of Modern Europe (when section approved by minor advisor); HIST 211G, East Asia to 1600; HIST 221G, Islamic Civilizations to 1800; HIST 222, Islamic Civilizations since 1800; HIST 309, American Indian History; HIST 333, Renaissance and Reformation; \*HIST 400, Special Topics; HIST 433, United States Labor History Since 1877; HIST 353, Colonial Mexico; HIST 471, China Through the Ming Dynasty; HIST 473, History of Japan; HON 220G, The World of the Renaissance: Discovering the Modern; HON 221G, Seeking the Way: Spirit and Intellect in Pre-Modern China; HON 224G, God and Nature; HON 228G, Religion and the State; HON 229G, The New Testament as Literature; HON 234, The Worlds of Arthur; HON 237G, Archaeology: Search for the Past; HON 239G, Medieval Understanding: Literature and Culture in the Middle Ages; HON 326V, Art and Mythology; HON 348V, Comparative Mythology: Myth, Ritual and the Life Cycle; HON 355V, Sexuality in Christianity and Islam; HON 364V, Jewish Literature and Culture; HON 366V, The Gothic Imagination; PHIL 136G, The Quest for God; PHIL 331, Philosophy of Religion; PHIL 342, Medieval Philosophy; or SOC 460, Sociology of Religion or by approval of Minor Advisor..... 15

#### SUPPLEMENTARY MAJORS: Sustainable Development

This program consists of 24 credits drawn from the lists below of which 18 credits must be numbered 300 or above. The student must take 6 credit hours (2 classes) from the core curriculum, 15 credit hours (5 classes) of electives, and 3 credit hours (1 class) of sustainable development field study. Advisor: Lois Stanford, Anthropology.

##### Core Requirements: (6 credits)

AG E/GEOG 315V, World Agriculture and Food Problems .....	3
ANTH 362, Environmental Anthropology.....	3
BIOL 301, Principles of Ecology .....	3
GEOG 295, Environmental Geography.....	3
GOVT 424, Environmental Policy .....	3
SOC 465V, Environmental Sociology .....	3

##### Elective Courses: (15 credits)

Courses are limited in each department in order to encourage students to take classes in different disciplines and broaden their perspective.

AG E 337V, Natural Resource Economics.....	3
AG E 370, Current Issues in Food and Agriculture .....	3
AGRO 483, Sustainable Production of Agronomic Crops .....	3
ANTH 360V, Food and Culture Around the World.....	3
ANTH 361V, Social Issues in the Rural Americas .....	3
BIOL 462, Conservation Biology .....	3
EPWS 380V, Ecosystem Earth, The Impact of Human Activities .....	3
FWCE 255, Principles of Fish and Wildlife Management.....	3
GEOG 362, Geography of International Development.....	3
GEOG 465, Land Use and Land Rent.....	3
GOVT 477, Sociology of Development and the World System .....	3
HIST 429, Plague, Plunder, and Preservation: American Enviro History .....	3
HON 305V, Global Environment .....	3
HON 320V, Food and Humanity: World in Crisis: World in Crisis.....	3
HON 321V, Agriculture in the Urban World .....	3
SOC 361V, Social Issues in Rural America .....	3
SOC 478, Sociology of Development and the World System .....	3

##### Additional Courses:

With the permission of the program advisor, students may substitute 1 class that presents a topical focus on sustainable development. Certain courses, such as GOVT 486, Political Economy, SOC 489, Globalization, or special topics courses may have a sustainable development focus, depending on the instructor or subheading. In these cases the student can request permission to substitute this specific course for an elective class listed above.

##### Field Requirements: (3 Credits)

In addition, students are expected to take one class that applies the principles and concepts of sustainable development in a local, regional, or international setting. Students may opt to enroll in one of the classes listed below, or they may choose to work on an independent study or internship in sustainable development. In these cases, students should seek the approval of the sustainable development committee before embarking on the field experience or internship.

AG E 330V, Organic Fall Vegetable Production .....	3
AG E 331V, Organic Spring Vegetable Production .....	3

AG E 380, Agricultural Economic Survey .....	3
ANTH 485, Field Experience .....	3
SOC 496, Internship.....	3
FWCE 356, Techniques in Natural Resource Management.....	3
FWCE 450, Special Topics.....	3

#### MINOR: Sustainable Development

A minor in Sustainable Development is available for students who want to include Sustainable Development in their academic training. The minor includes a minimum of 18 credit hours of which 6 credit hours must be from the core curriculum, 12 credit hours from the elective courses, and 3 credit hours of field study.

## ART

#### Thom Brown, department head

**Professors** Barello, Stevens, D. Taylor; **Associate Professor** Zarur; **Assistant Professors** Cully, Fine, Goehring, K. Reka, S. Taylor; **College Instructors** Cole-Dorn, Fitzsimmons; **Emeritus** Fidler, Jaffe, Ocepek, Rose, St. Aubyn; **Gallery Director** Thayer; **Conservator** Marinas  
(575) 646-1705; e-mail: artdept@nmsu.edu  
<http://artdepartment.nmsu.edu/>

**DEGREE: Bachelor of Arts**

**MAJOR: Art**

**EMPHASIS: Art History**

**DEGREE: Bachelor of Fine Arts**

**MAJOR: Art**

**EMPHASIS: Museum Conservation**

**MINORS: Art History  
Museum Conservation  
Art**

The Department of Art provides a rigorous program for the enrichment, application, development, and appreciation of the visual arts. Students in studio develop an individual aesthetic by experimenting with and expressing visual concepts in an articulate manner. Art history students acquire a comprehensive understanding of the aesthetic and cultural issues addressed within the history of art, conducting and presenting independent research. The study of art provides an appropriate background for the pursuit of careers in studio art and art history in such areas as the visual arts, graphic design, conservation, library work, museum work, advertising, architecture and interior design, photography, crafts, cinematography, education and art therapy, publishing, theatre, television, dance, industry and business, communication, religion, management, and research in the creative and academic areas. A major in art also provides students with a broad humanistic background appropriate to preparation for advanced degrees in other fields. All art majors must successfully complete ART 155 and ART 156 during their freshman year.

Students enrolled in this department's major(s) or minor(s) may count credits in required applied courses toward their degrees beyond the normal maximum of 9 credits allowed in the College of Arts and Sciences. Note that 9 credits need to be taken outside Art at the upper level division. However, if students change the major(s) or minor(s) or do not complete the requirements for the minor at the time of graduation, they may only count a maximum of 9 credits to the applied/occupational credits toward graduation.

**DEGREE: Bachelor of Arts**

**MAJOR: Art**

**EMPHASIS: Art**

The Bachelor of Arts is designed to give the student a broad interdisciplinary understanding of the areas of drawing, painting, graphic design, printmaking, sculpture, photography, ceramics, conservation, jewelry and metalsmithing, through a series of introductory and special topics courses and the history and appreciation of art in the context of a liberal education. Students are required to

take 18 credits in a variety of the above areas before commencing with special topic courses, 27 of which are required for the degree. There is no language requirement for the B.A. in Art; there is a four semester language requirement for the BA in Art History.

#### Departmental Requirements (Total credits 66)

##### Freshman Year (18 credits)

Introductory Studio-Arts Courses.....	12
Choose 12 credits from the following courses: ART 150, Drawing I; ART 155, 2D Fundamentals; ART 156, 3D Fundamentals; ART 255, Introduction to Graphic Design and Digital Media; ART 260, Introduction to Painting; ART 265, Sculpture I; ART 270, Introduction to Photography; ART 275, Ceramics I-A; ART 280, Printmaking I; ART 285, Metals and Jewelry I.	
ART 295G and 296G, Introduction to Art History I, and II.....	6

##### Sophomore Year (18 credits)

Introductory Studio-Arts Courses.....	6
Choose 6 credits from the following courses: ART 150, Drawing I; ART 155, 2D Fundamentals; ART 156, 3D Fundamentals; ART 255, Introduction to Graphic Design and Digital Media; ART 260, Introduction to Painting; ART 265, Sculpture I; ART 270, Introduction to Photography; ART 275, Ceramics I-A; ART 280, Printmaking I; ART 285, Metals and Jewelry I.	
Special Topic Art Courses (300 level) .....	6
ART 297 Introduction to Art History III .....	3
Art History (300 level).....	3

##### Junior Year (15 credits)

Special Topic Art Courses (300 level) .....	12
Art History (300/400 level).....	3

##### Senior Year (15 credits)

Special Topic Art Courses (400 level) .....	9
Art History (400 level).....	3
Capstone Course.....	3
Choose 3 credits from the following courses: ART 494, Special Topics in Studio; ART 495, Undergraduate Studio Thesis; ART 499, Problems in Studio	

#### EMPHASIS: Art History

The art history program is designed to give the student a broad familiarity with the visual arts through the factual and theoretical study of aesthetics, cultural contexts, iconography, pictorial traditions, stylistic development, and technical practices. Students are encouraged to take related courses in anthropology, history, languages and literature, music history, philosophy, religion, theatre and costume history. The B.A. emphasis in Art History under the 2010-2011 catalog requires the completion of the second language requirement as specified by College of Arts & Sciences Degree Requirements listed in the undergraduate catalog. Those anticipating graduate work in art history should study French or German.

#### Departmental Requirements (Total credits 63)

##### Freshman Year (15 credits)

ART 150, Drawing I.....	3
ART 155, 2D Fundamentals and ART 156, 3D Fundamentals .....	6
ART 295G, Introduction to Art History I.....	3
ART 296G, Introduction to Art History II.....	3

##### Sophomore Year (18 credits)

ART 297, Introduction to Art History III .....	3
Three 300-level art history courses .....	9
Two 200/300-level art history or studio courses.....	6

##### Junior Year (15 credits)

Three 300/400-level art history courses .....	9
Two 200-400-level art history or studio courses.....	6

##### Senior Year (15 credits)

ART 479, Art Theory, Criticism, Historiography.....	3
Two 300/400-level art history courses .....	6
Two 200/400-level art history or studio courses.....	6
Electives: Sufficient to bring total credits to 128 for graduation, including 48 upper-division.	

#### DEGREE: Bachelor of Fine Arts

#### MAJOR: Art

The studio art curriculum is designed to give the student a broad, trans-disciplinary understanding of the field of visual arts, including appreciation and criticism, ceramics, graphic design, photography, jewelry/metalsmithing, drawing, printmaking, painting, sculpture, conservation and art history. This program is recommended for those students who wish to embark on a professional career in art. The maximum number of credits counted toward graduation is 81. Of these, 9 credits must be in 300-level art history period courses in addition to all three 200-level art history surveys. A senior thesis exhibition is required of all graduating B.F.A. students in their last semester. The maximum credits for variable courses shall be 6 credits per semester except by permission. Students seeking a B.F.A. must apply in the fall of their junior year as a student in the B.A. program to be accepted into the B.F.A. program. Students completing the B.F.A. will graduate with both B.A. and B.F.A. degrees.

#### Departmental Requirements (Total credits 81)

##### Freshman Year (18 credits)

Introductory Studio-Arts Courses.....	12
Choose 12 credits from the following courses: ART 150, Drawing I; ART 155, 2D Fundamentals; ART 156, 3D Fundamentals; ART 255, Introduction to Graphic Design and Digital Media; ART 260, Introduction to Painting; ART 265, Sculpture I-A; ART 270, Introduction to Photography; ART 275, Ceramics I-A; ART 280, Printmaking I; ART 285, Metals and Jewelry I.	
ART 295G and 296G, Introduction to Art History I, and II.....	6

##### Sophomore Year (18 credits)

Introductory Studio-Arts Courses.....	6
Choose 6 credits from the following courses: ART 150, Drawing I; ART 155, 2D Fundamentals; ART 156, 3D Fundamentals; ART 255, Introduction to Graphic Design and Digital Media; ART 260, Introduction to Painting; ART 265, Sculpture I-A; ART 270, Introduction to Photography; ART 275, Ceramics I-A; ART 280, Printmaking I; ART 285, Metals and Jewelry I.	
Special Topic Art Courses (300 level) .....	6
ART 297 Introduction to Art History III .....	3
Art History (300 level).....	3

##### Junior Year (15 credits)

Submit application to the B.F.A. Program (may be repeated once). Application process includes a portfolio review and interview with a panel of department faculty members.	
Special Topic Art Courses (300 level) .....	12
Art History (300/400 level).....	3

##### Senior Year (15 credits)

Special Topic Art Courses (400 level) .....	9
Art History (400 level).....	3
Capstone Course.....	3
Choose 3 credits from the following courses: ART 494, Special Topics in Studio; ART 495, Undergraduate Studio Thesis; ART 499, Problems in Studio	

The Bachelor of Fine Arts degree is a professional baccalaureate degree, which requires an additional in-residence, fifth-year of studio-intensive independent work. The fifth-year B.F.A. builds on the understanding and abilities gained over the previous four years in the B.A. curriculum. Students apply to the B.F.A. program during the fall semester of their junior year. B.F.A. students work intensively in the studio to synthesize an individual approach to making and thinking, and develop an independent body of work for exhibition.

##### Final (Fifth) Year (15 credits)

Special Topic Art Courses (400 level) .....	9
Art History (400 level).....	3
Thesis Exhibition/Capstone Course (may be repeated 2x for credit).....	3
Choose from the following courses: ART 494, Special Topics in Studio; ART 495, Undergraduate Studio Thesis; ART 499, Problems in Studio	

#### EMPHASIS: Museum Conservation (79 credits)

Art Conservation is the study of the preservation and restoration of art as well as other cultural and natural objects. The B.F.A. degree with an emphasis in Museum Conservation provides an academic structure within which students master specific sets of practical skills while developing broad professional and theoretical perspective toward the issue of conserving objects in a museum or collection setting. By combining theory with practice, the program offers students the interpretive, quantitative, and administrative skills needed for careers as curators, registrars, collections managers, exhibit designers, and museum

administrators, all of whom must have specialized training in the care and handling of works of art to be successful.

#### Science (16 credits)

##### Option A (16 cr):

Recommended for students planning to attend graduate school in art conservation.

CHEM 111G and CHEM 112G, General Chemistry I and II ..... 8

**OR**

CHEM 115 and CHEM 116, Principles of Chemistry I and II ..... 8

**PLUS**

CHEM 313, Organic Chemistry I ..... 3

CHEM 314, Organic Chemistry II ..... 3

CHEM 315, Organic Chemistry Laboratory ..... 2

##### Option B (16cr):

Recommended for students who do NOT plan to attend graduate school in art conservation.

CHEM 111G, General Chemistry I ..... 4

CHEM 112G, General Chemistry II ..... 4

CHEM 211, Organic Chemistry ..... 4

**AND**

BIOL 211G/BIOL 211GL, Cellular and Organismal Biology ..... 4

**OR**

EPWS 303, Economic Entomology ..... 4

##### Art History (18 credits)

ART 295G, Introduction to Art History I ..... 3

ART 296G, Introduction to Art History II ..... 3

ART 297, Introduction to Art History III ..... 3

Plus three ART history electives 300 level or higher ..... 9

##### History/Anthropology (15 credits)

2 required courses (6 cr):

ANTH 315, Introduction to Archaeology ..... 3

**AND**

HIST 483, Historic Preservation ..... 3

**OR**

HIST 486, Interpreting Historic Places for the Public ..... 3

Plus 3 electives (choose 9 credits from the following):

ANTH 313, Ancient Mexico (offered every fall) ..... 3

ANTH 316, Archaeology of the American Southwest ..... 3

ANTH 318, Historical Archaeology ..... 3

ANTH 334, Anthropology of Art Traditions ..... 3

ANTH 378, Intro to Lab Methods in Archaeology (offered intermittently) ..... 3

ANTH 414, The Archaeology of Religion ..... 3

ANTH 467, Archaeology of the American Southwest ..... 3

ANTH 485, Internship in Anthropology ..... 1-3

ANTH 497, Special Topics (if archaeology) ..... 1-5

##### Museum Studies (6 credits)

ANTH 345, Introduction to Museology ..... 3

ANTH 490, Museum Conservation Internship ..... 3

##### Studio Art (15 credits)

3 required courses (9 cr):

ART 150, Drawing I ..... 3

ART 151, Drawing II ..... 3

ART 260, Introduction to Painting ..... 3

Plus 2 electives (choose 6 credits from the following):

1 three-dimensional course (choose from):

ART 265, Sculpture I-A ..... 3

ART 275, Ceramics I-A ..... 3

ART 285, Metals and Jewelry I ..... 3

1 additional course (choose from):

ART 250, Drawing III (Human Figure) ..... 3

ART 270, Photography I ..... 3

ART 280, Printmaking I ..... 3

##### Art Conservation (9 credits)

The following courses are open by permission of the instructor only:

ART 401, Museum Conservation Techniques I (Spring, required) ..... 3

ART 402, Museum Conservation Techniques II (Fall, required) ..... 3

ART 403, Preventative Conservation/Collections Care (required) ..... 3

ART 499, Problems in Studio (optional) ..... 3-6

##### MINOR: Art History

The Art History minor requires 27 credits. Students cannot earn both a bachelor's degree in the Department of Art and an Art History minor unless they pass at least 6 credits in the minor beyond the requirements of the major. Students cannot earn both the Bachelor of Art with an Art History emphasis and a minor in Art History.

ART 295G, Introduction to Art History I ..... 3

ART 296G, Introduction to Art History II ..... 3

ART 297, Introduction to Art History III ..... 3

Five art history courses at the 300-499 level ..... 15

One course in humanities or studio art, subject to approval by the minor advisor ..... 3

##### MINOR: Museum Conservation

The Museum Conservation minor requires 18 credits. Students cannot earn both a bachelor's degree in the department of Art and the Museum Conservation minor unless they pass at least 6 credits in the minor beyond the requirements of the major. An undergraduate minor in Museum conservation requires the completion of 9 credits selected from the courses listed below (Option A or Option B) and 9 credits of 300-450 level museum conservation courses.

##### Museum Conservation Courses (9 credits)

ART 401, Museum Conservation Techniques I (Spring) ..... 3

ART 402, Museum Conservation Techniques II (Fall) ..... 3

ART 403, Preventative Conservation-Collections Care (Directed Readings) ..... 3

##### Option A: Art

9 credits chosen from the following:

ART 150, Drawing II ..... 3

ART 260, Introduction to Painting ..... 3

ART 265, Sculpture I-A ..... 3

ART 270, Photography I ..... 3

ART 275, Ceramics I-A ..... 3

ART 280, Printmaking I ..... 3

ART 285, Metals and Jewelry I ..... 3

ART 295G, Introduction to Art History I ..... 3

ART 296G, Introduction to Art History II ..... 3

ART 297, Introduction to Art History III ..... 3

##### Option B: Anthropology

9 credits chosen from the following:

ANTH 313, Ancient Mexico (offered every fall) ..... 3

ANTH 315, Introduction to Archaeology ..... 3

ANTH 316, Archaeology of the American Southwest ..... 3

ANTH 318, Historical Archaeology ..... 3

ANTH 334, Anthropology of Art Traditions ..... 3

ANTH 378, Intro to Lab Methods in Archaeology (offered intermittently) ..... 3

ANTH 414, Archaeology of Religion ..... 3

ANTH 485, Internship in Anthropology ..... 3

##### MINOR: Art

The Art minor requires 27 credits. Students cannot earn both a bachelor's degree in the Department of Art and a Art minor unless they pass at least 6 credits in the minor beyond the requirements of the major.

18 credits from among: ART 110G, Visual Concepts, ART 150, Drawing I, ART 151, Drawing II, ART 155, 2-D Fundamentals, ART 156, 3-D Fundamentals, ART 255, Introduction to Graphic Design and Digital Media, ART 256, Introduction to Letter Forms and Typographic Design, ART 260, Introduction to Painting I, ART 265, Sculpture I, A Introduction to Sculpture: Process and Possibility, ART 270, Photography I, ART 275 or 276, Ceramics I, A, or Ceramics I, B, ART 280, Printmaking I, ART 285, Metals and Jewelry I, ART 295G, Introduction to Art History I, ART 296G, Introduction to Art History II, and/or ART 297, Introduction to Art History III ..... 18

Nine credits of studio art or art history at the 300-499 level ..... 9

## ASTRONOMY

### Professor Jon Holtzman, department head

**Professors** Klypin, McNamara, Walterbos; **Associate Professors** Chanover, Churchill, Murphy, Vogt; **Assistant Professors** Jackiewicz, McAteer; **College Professors** Beebe, Webber; **Observatory Specialist** Harrison  
(575) 646-4438  
<http://astronomy.nmsu.edu/>

### MINOR: Astronomy Emphasis: Education Engineering

The department offers an undergraduate astronomy minor degree, which requires 18-20 credits. The department does not offer a B.S. degree but encourages interested students to enroll in the physics program as a first step toward a career in astronomy. Our 100- and 300-level courses meet various university general education requirements. All students are invited to share with us this exciting area of study, through our basic and advanced undergraduate courses. The Department of Astronomy offers a graduate program leading to M.S. and Ph.D. degrees. Interested students should consult the Graduate School Catalog, which is available from the Graduate School or online.

#### Regular Undergraduate Course Offerings

ASTR 105G, The Planets.....	4
ASTR 110G, Introduction to Astronomy.....	4
ASTR 301V, Revolutionary Ideas in Science.....	3
ASTR 305V, The Search for Life in the Universe.....	3
ASTR 308V, Into the Final Frontier.....	3
ASTR 330V, Planetary Exploration.....	3
ASTR 400, Undergraduate Research.....	1-3
ASTR 401, Topics in Modern Astrophysics.....	3
ASTR 405, Astronomy and Astrophysics I.....	3
ASTR 406, Astronomy and Astrophysics II.....	3
ASTR 435, Observational Techniques I.....	3

Other courses at the 300- and 400-levels are offered on an occasional basis. Consult the "Course Descriptions" chapter in this catalog.

### MINOR: Astronomy

The department offers a minor created for majors in a variety of scientific fields, and two minor emphases specifically designed to address the needs and interests of students from the Colleges of Education and Engineering. Any undergraduate, however, may pursue any of the three minor tracks.

#### Regular Minor (19)

The 5 requirements for the regular minor comprise 19 credits, distributed as follows

#### 4 credits from among:

ASTR 105G, The Planets.....	4
ASTR 110G, Introduction to Astronomy.....	4

#### 6 credits from among:

ASTR 301V, Revolutionary Ideas in Science.....	3
ASTR 305V, The Search for Life in the Universe.....	3
ASTR 308V, Into the Final Frontier.....	3
ASTR 330V, Planetary Exploration.....	3

Note: Three credits of ASTR 400 (Undergraduate Research) may replace one of these courses.

#### 3 credits of:

ASTR 401, Topics in Modern Astrophysics.....	3
--	---

#### 3 or 6 credits from among:

ASTR 405, Astronomy and Astrophysics I.....	3
ASTR 406, Astronomy and Astrophysics II.....	3
ASTR 435, Observational Techniques I.....	3

Note: Three credits of ASTR 400 (Undergraduate Research) may replace one of these courses, but not the same three if used above.

#### 3 or 0 credits (total of 6 between this and previous category) from among:

A E 424, Aerospace Systems Engineering.....	3
BIOL 451, Physiology of Microorganisms.....	3
BIOL 467, Evolution.....	3

BIOL 473, Ecology of Microorganisms.....	3
C S 475, Artificial Intelligence.....	3
C S 482, Database Management Systems I.....	3
C S 483, Introduction to Robotics.....	3
C S 491, Parallel Programming.....	3
CHEM/GEOL 360, General Geochemistry.....	3
CHEM 431/ CHEM 433, Physical Chemistry.....	3
E E 454, Antennas and Radiation.....	3
E E 460, Space System Mission Design and Analysis.....	3
E E 473/PHYS 473, Introduction to Optics.....	3
E E 478/PHYS 478, Optical Sources, Detectors, and Radiometry.....	3
GEOL 465, Isotope Geochemistry.....	3
GEOL 476, Marine Paleocology.....	3
GPHY 451, Principles of Geophysics.....	3
MATH 471, Complex Variables.....	3
MATH 472, Fourier Series and Boundary Value Problems.....	3
PHYS 451, Intermediate Mechanics.....	3
PHYS 461, Electricity and Magnetism.....	3
PHYS 480, Thermodynamics.....	3
STAT 371, Statistics for Engineers and Scientists I.....	3
STAT 470, Probability: Theory and Applications.....	3
STAT 480, Statistics: Theory and Applications.....	3

Note: Alternative 400-level courses in the physical sciences, engineering, or related fields, including one-time seminars, may be proposed on a case-by-case basis to fulfill this requirement, drawn from the fields of astronomy, biochemistry, biology, chemistry, computer science, geology, geophysics, mathematics, physics, statistics, or from engineering. Proposals should include a clear justification that connects the course materials to a particular topic in astronomy or astrophysics.

#### Minor with emphasis on Engineering (18-19)

The 5 requirements for the engineering track minor comprise 18-19 credits, distributed as follows.

#### 3 or 4 credits from among:

ASTR 105G, The Planets.....	4
ASTR 110G, Introduction to Astronomy.....	4
PHYS 215G, Engineering Physics I.....	3
PHYS 216G, Engineering Physics II.....	3

#### 3 credits from among:

ASTR 301V, Revolutionary Ideas in Science.....	3
ASTR 305V, The Search for Life in the Universe.....	3
ASTR 308V, Into the Final Frontier.....	3
ASTR 330V, Planetary Exploration.....	3

#### 3 credits of:

ASTR 401, Topics in Modern Astrophysics.....	3
--	---

#### 3 or 6 credits from among:

ASTR 400, Undergraduate Research.....	1-3
ASTR 405, Astronomy and Astrophysics I.....	3
ASTR 406, Astronomy and Astrophysics II.....	3
ASTR 435, Observational Techniques I.....	3
A E 428, Aerospace Capstone Design.....	3
E E 400, Undergraduate Research (in Electrical Engineering).....	3
E E 418, Capstone Design I.....	3
E E 419, Capstone Design II.....	3
M E 400, Undergraduate Research (in Mechanical Engineering).....	3

Note: Taking any of the non-astronomy classes for this requirement requires prior approval from the head of astronomy on a case-by-case basis, with a clear connection being established between the proposed research or design project and a particular topic in astronomy or astrophysics (astronomy instrumentation or observational projects are particularly encouraged).

#### 6 or 3 credits (total of 9 between this and previous category) from among:

A E 424, Aerospace Systems Engineering.....	3
BIOL 451, Physiology of Microorganisms.....	3
BIOL 467, Evolution.....	3
BIOL 473, Ecology of Microorganisms.....	3
C S 475, Artificial Intelligence.....	3
C S 482, Database Management Systems I.....	3



C S 483, Introduction to Robotics .....	3
C S 491, Parallel Programming .....	3
CHEM 360/GEOL 360, General Geochemistry .....	3
CHEM 431/CHEM 433, Physical Chemistry .....	3
E E 454, Antennas and Radiation .....	3
E E 460, Space System Mission Design and Analysis .....	3
E E 473/PHYS 473, Introduction to Optics .....	3
E E 478/PHYS 478, Optical Sources, Detectors, and Radiometry .....	3
GEOL 465, Isotope Geochemistry .....	3
GEOL 476, Marine Paleocology .....	3
GPHY 451, Principles of Geophysics .....	3
MATH 471, Complex Variables .....	3
MATH 472, Fourier Series and Boundary Value Problems .....	3
PHYS 451, Intermediate Mechanics .....	3
PHYS 461, Electricity and Magnetism .....	3
PHYS 480, Thermodynamics .....	3
STAT 371, Statistics for Engineers and Scientists I .....	3
STAT 470, Probability: Theory and Applications .....	3
STAT 480, Statistics: Theory and Applications .....	3
Note: Alternative 400-level courses in the physical sciences, engineering, or related fields, including one-time seminars, may be proposed on a case-by-case basis to fulfill this requirement, drawn from the fields of astronomy, biochemistry, biology, chemistry, computer science, geology, geophysics, mathematics, physics, statistics, or from engineering. Proposals should include a clear justification that connects the course materials to a particular topic in astronomy or astrophysics.	

**Minor with emphasis on Education (18-20)**

The 3 requirements for the education track minor comprise 18-20 credits, distributed as follows.

**8 credits of:**

ASTR 105G, The Planets .....	4
ASTR 110G, Introduction to Astronomy .....	4

**6 credits from among:**

ASTR 301V, Revolutionary Ideas in Science .....	3
ASTR 305V, The Search for Life in the Universe .....	3
ASTR 308V, Into the Final Frontier .....	3
ASTR 330V, Planetary Exploration .....	3

**4-6 credits from among:**

ASTR 400, Undergraduate Research .....	1-3
ASTR 408, Astronomy for Educators .....	3
EDUC 451, Methods of Teaching Elementary School Science .....	3
EDUC 463, Teaching Science at the Middle and High School Level .....	3
MATH 314, Math and Science with Technology .....	3

Note: This requirement will generally be fulfilled by two 3-credit courses. Students may request the 4 credit option instead, if an appropriate topic and instructor for 1 credit of ASTR 400 are available.

## BIOLOGY

**Professor John Gustafson, department head; Professor Michele Nishiguchi, associate department head**

**Professors** Bernstein, Boecklen, Gustafson, Houde, Milligan, Nishiguchi, Serrano, Smith; **Associate Professors** Bailey, Curtiss, Dawe, Hanley, Preszler, C. Shuster, Unguez, Wright; **Assistant Professors** Castillo, Hansen, M. Shuster, Throop, Xu

(575) 646-3611

<http://biology-web.nmsu.edu/>

**DEGREE: Bachelor of Arts**

**MAJOR: Biology**

**DEGREE: Bachelor in Conservation Ecology**

**MAJOR: Conservation Ecology**

**DEGREE: Bachelor of Science**

**MAJOR: Biology**

**MAJOR: Genetics**

**MAJOR: Microbiology**

**MINORS: Biology**

**Conservation Ecology**

**Human Biology**

**Microbiology**

A student may earn the Bachelor of Arts in biology or the Bachelor of Science in biology, genetics, and microbiology through major studies in the Department of Biology. The Bachelor of Science in biology or microbiology is recommended for premedical and pre dental students, for those preparing to teach biology and other sciences at the secondary and college levels, for those interested in the numerous fields of biological research and applied biology, and for those planning on obtaining an advanced degree in biology.

Freshmen should begin taking required biology and chemistry courses in their first year. Students are required to speak with an advisor in the Advising Center of the Department of Biology as soon as they declare a biology major. The department welcomes students considering a biology major who wish preliminary advising. More information on the Department of Biology is available on our web site, <http://biology-web.nmsu.edu>.

A student must earn a grade of C or better to receive credit for any nondepartmental or departmental requirement for any major or minor offered by the Department of Biology.

It is strongly recommended that students include a minor or supplementary course work in a specific discipline to enhance their academic experience. See under General Information at the beginning of this catalog for specific requirements for minors, and departments which offer them. Selection of a minor or a supplementary coursework area should be done in consultation the Biology Advising Center.

The department offers minors in biology and microbiology for students in other disciplines. In addition, we offer minors in human biology and in conservation ecology, for students majoring in biology and other fields.

A student must fulfill a second language requirement to receive a Bachelor of Arts or Bachelor of Science degree in the Biology and Microbiology majors. This requirement does not apply to the Conservation Ecology major, offered jointly with the Department of Fisheries, Wildlife and Conservation Ecology, or the Genetics major, offered jointly with the Department of Plant and Environmental Science. To meet the second language requirement, the student must do one of the following:

- Complete two semesters of foreign language courses numbered 111 and 112 with a grade of C or better. Spanish speakers should enter and complete 113 with a C or better to fulfill the requirement.
- Challenge the 112 level of French, German, Japanese, Latin, Portuguese, Russian or Spanish, or the 113 level for the Spanish-speaking student.
- Obtain college certification of completion of two years of a second language at the high school level with a grade of C or higher in the second-year level. (i.e. equivalent to French 112, German 112, Spanish 112, etc.)
- Complete two semesters of American Sign Language, courses C D 374 and C D 375, with a grade of C or better.
- Additional mechanisms for fulfilling the language requirement are listed under the College of Arts and Science language requirement.

**DEGREE: Bachelor of Arts**

**MAJOR: Biology**

The Bachelor of Arts curriculum is intended for students who desire a broad education with emphasis in biology in a program chosen by the student in consultation with an advisor in the Biology Advising Center. The Bachelor of Arts is recommended for those who plan to teach at the primary levels or to use a background in life science in business or other endeavors.

**Nondepartmental Requirements**

CHEM 111G-112G, General Chemistry I, II .....	8
CHEM 211, Organic Chemistry, or CHEM 313, 314, 315, Organic Chemistry, I, II and Lab .....	4-8
MATH 142G, Calculus for the Biological and Management Sciences I, or MATH 191G, Calculus and Analytic Geometry I .....	3-4

One course from one of the following departments: astronomy, computer science, geology or physics. .... 3-4

#### Departmental Requirements

BIOL 111G, Natural History of Life.....	3
BIOL 111L, Natural History of Life Laboratory.....	1
BIOL 211G, Cellular and Organismal Biology.....	3
BIOL 211L, Cellular and Organismal Biology Laboratory.....	1
BIOL 305, Principles of Genetics.....	3
BIOL 377, Cell Biology.....	3
BIOL 467, Evolution.....	3
Sufficient upper-division biology electives to bring total upper-division credits to 24.	
Choice of electives should be done in consultation with an advisor.	
Other electives: Sufficient to bring total to 128, including 48 upper-division.	

#### DEGREE: Bachelor in Conservation Ecology

##### MAJOR: Conservation Ecology

##### MINOR: Conservation Ecology

Codirectors of the Program:

**John Gustafson, Ph.D.**, department head, Biology

**Raul Valdez, Ph.D.**, department head, Fishery, Wildlife, and Conservation Ecology

*Program Participants:*

**Professors** Boecklen, Gustafson, Houde, Milligan, Nishiguchi, G. Smith; **Associate Professors** M. Anderson, Bailey, Boren, Cowley, Desmond, Hanley, Preszler, Roemer, Wright; **Assistant Professors** Boeing, Throop

New Mexico State University offers an interdisciplinary, undergraduate program in Conservation Ecology. The goal of this program is to train biologists for the current and future challenges that we face in the conservation and wise use of our Earth's natural resources. An overriding principle of the program is to provide a solid foundation in basic science coupled with a practical approach towards sustainability and stewardship. The curriculum encompasses several disciplines and includes a wide variety of courses from Biology, Fishery and Wildlife Science, Geography, Government, and Range Science.

The education experience will provide students with an overview of global biodiversity and an understanding of the ecological and evolutionary processes that have created and sustained it. Courses in population and community ecology coupled with population viability analysis and risk assessment will give students the necessary background to understand the theory and development of these fields as well as the tools to tackle real-world problems. Courses in basic genetics, evolution, and conservation genetics will expose students to the importance of conserving genetic variation in order to maintain adaptive potential within populations, thereby sustaining the evolutionary process. Students will also receive background on wildlife law and environmental policy, information vital for assisting governing bodies in making decisions regarding the protection and wise use of our natural resources. Skills obtained in the application of geographic information systems, molecular genetics, and professional communication can also be acquired through various electives. In sum, we seek to provide undergraduate students with an education that will allow them the opportunity to contribute to the conservation of all life on Earth.

The requirements are listed below. In addition each required course must be passed with a grade of C or better.

#### DEGREE REQUIREMENTS

##### Core Curriculum (Includes University and College Requirements 67-68 credits)

A ST 311, Statistical Applications.....	3
BCHE 341, Survey of Biochemistry.....	4
C S Elective - Any Computer Science course 100 or above,.....	3
CHEM 111G/112G, General Chemistry I/II.....	8
CHEM 211, Organic Chemistry.....	4
ENGL 111G, Rhetoric and Composition.....	4
ENGL 318G, Advanced Technical and Professional Communication or ENGL 311G, Advanced Composition.....	3
MATH 120, Intermediate Algebra; and MATH 142G, Calculus for Biological and Management Sciences I or MATH 191G/192G, Calculus and Analytical Geometry I/II.....	6-8
PHYS 211G/211GL, General Physics I/Laboratory.....	4
PHYS 212/212L, General Physics II/Laboratory.....	4
Physiology—Any physiology course among the following:.....	3/4
FWCE 432, BIOL 311, 314, 377, 381, 474, ANSC 370	

Viewing a Wider World—ECON 337V, Natural Resource Economics.....3  
(Second VWW course will be satisfied using the 9-hour rule: students with Biology as home department use FWCE courses and students with Wildlife Science as home department use BIOL courses.)

#### Major Requirements (43-45 credits)

BIOL 111G, Natural History of Life.....	3
BIOL 111L, Natural History of Life Laboratory.....	1
BIOL 211G, Cellular and Organismal Biology.....	3
BIOL 211L, Cellular and Organismal Biology Laboratory.....	1
BIOL 301, Principles of Ecology.....	3
BIOL 305, Genetics.....	3
BIOL 467, Evolution.....	3
BIOL 312, Plant Taxonomy, <b>OR</b> RGSC 307, Rangeland Grasses, <b>AND</b> RGSC 316, Rangeland Plants.....	3
BIOL 313, Structure and Function of Plants.....	3
BIOL 322, Zoology.....	3
FWCE 255, Principles of Natural Resource Management.....	4
FWCE 310, Managing Ecological Systems for Biodiversity or BIOL 462, Conservation Biology.....	3
FWCE 330, Natural History of the Vertebrates.....	3
FWCE 402, Seminar in Natural Resource Management.....	1
FWCE 409, Introduction to Population Ecology, or BIOL 470, Plant Community Ecology.....	3

#### Requirements in Diversity of Life: Any two courses (6-8 credits)

BIOL 433/433L, Insect Biology/Laboratory.....	4
BIOL 445, Herpetology.....	3
BIOL 465, Invertebrate Zoology.....	4
FWCE 430, Avian Field Ecology(f), or BIOL 447, Ornithology.....	4
FWCE 431, Forest and Range Mammals.....	3
FWCE 482, Ichthyology.....	3

#### Additional courses

Electives to bring total to 128 credits including 48 upper division credits

#### Recommended Electives

BIOL 488, Principles of Conservation Genetics.....	3
BIOL 489, Genetic Aspects of Population Biology.....	3
GEOG 381, Cartography and Geographic Information Systems.....	3
GEOG 481, Fundamentals of Geographic Information Systems.....	3
<b>Other Related Courses</b>	
GEOL 111G, Survey of Geology.....	4
GEOL 295, Environmental Geology.....	3
GEOL 424, Soil Chemistry.....	3
GOVT 378, U.S.-Mexico Border Politics.....	3
HIST 400, Special Topics.....	3
HIST 429, Plague, Plunder, and Preservation: American Environmental History.....	3
TOX 423, Environmental Toxicology.....	3
RGSC 318, Watershed Management.....	3
RGSC 325, Rangeland Restoration Ecology.....	3
RGSC 452, Rangeland Analysis.....	3

#### DEGREE: Bachelor of Science

##### MAJOR: Biology

The major in biology provides a solid academic base for those planning to enter any of the various fields of the biological sciences. The program allows considerable latitude. Suggested course sequences for specific areas of interest within biology (such as botany, zoology, ecology, conservation biology, animal, plant, or cellular physiology, preprofessional studies, and preparation for graduate school) can be obtained from the Biology Advising Center.

#### Nondepartmental Requirements

A ST 311, Statistical Applications.....	3
BCHE 341, Survey of Biochemistry, or BCHE 395, Biochemistry.....	3 or 4
CHEM 111G-112G, General Chemistry I and II.....	8
CHEM 211, Organic Chemistry, or CHEM 313, 314, 315, Organic Chemistry, I, II and Lab.....	4-8
MATH 191G, Calculus and Analytic Geometry I.....	4
PHYS 211G, General Physics I or PHYS 221G, General Physics for Life Sciences I.....	3

PHYS 212, General Physics II, or PHYS 222G, General Physics for Life Sciences II .....	3
PHYS 211GL and 212L, General Physics Laboratory .....	2

**Departmental Requirements**

BIOL 111G, Natural History of Life.....	3
BIOL 111L, Natural History of Life Laboratory.....	1
BIOL 211G, Cellular and Organismal Biology .....	3
BIOL 211L, Cellular and Organismal Biology Laboratory .....	1
BIOL 301, Principles of Ecology.....	3
BIOL 305, Principles of Genetics.....	3
BIOL 377, Cell Biology.....	3
BIOL 467, Evolution.....	3
Sufficient credits numbered 300 or above to bring total upper-division credits in Biology to 28. At least one upper-division course must include laboratory and/or field experience. The laboratory/field requirement can be satisfied by any BIOL course above the 300 level that includes a laboratory or a field trip—including BIOL 350 or BIOL 450	

Electives: Sufficient to bring the total credits to 128, including 48 upper-division.

**MAJOR: Genetics****Codirectors of the Program:**

John Mexal, Ph.D., department head, Plant and Environmental Sciences  
John Gustafson, Ph.D., department head, Biology

**Program Participants:**

**Professors:** Bernstein, Bosland, Cramer, Houde, Milligan, Nishiguchi, O'Connell, Ray, Sengupta-Gopalan, St. Hilaire; **Associate Professors:** Bailey, Curtiss, Dawe, B. Shuster, St. Zhang; **Assistant Professors:** M. Shuster

A degree in Genetics can provide excellent preparation for careers in academic research and technical support, teaching, agriculture, the biotechnology industry, medicine and health sciences, forensic science, technical writing, and sales or marketing. It is also an excellent background for students wishing to enter a graduate program, medical school, and veterinary school.

Undergraduates in the Genetics program must earn a grade of C or better to receive credit for required Basic Science Background and Genetics Core courses. Within the Genetics Core curriculum, Tier I courses must be taken by all majors, for a total of 28 credit hours. To accommodate differing interests among students, a series of Tier II courses comprising 11 to 13 credits are provided. Ethical considerations of genetic based technologies will be infused throughout the curriculum, with a focused course on "Science and Ethics" in the Tier III portion of the core curriculum.

**DEGREE REQUIREMENTS****General Education Requirements (42 credits)****AREA I: COMMUNICATIONS**

English Composition-Level 1: ENGL 111G, ENGL 111H, or SPCD111G .....	4
English Composition-Level 2: ENGL 218 or ENGL 318G.....	3
Oral Communication: AXED 201, COMM 253G, COMM 265G, or HON 265G .....	3

**AREA II: MATHEMATICS/ALGEBRA**

MATH 191G.....	3
----------------	---

**AREA III: LABORATORY SCIENCE**

CHEM 111GG/111L and CHEM 112G/112L.....	8
---	---

<b>AREA IV: SOCIAL/BEHAVIORAL SCIENCES</b> .....	6-9*
--	------

<b>AREA V: HUMANITIES AND FINE ARTS</b> .....	6-9*
---	------

<b>NMSU VIEWING A WIDER WORLD</b> (see catalog for listing of courses).....	6
---	---

\*Total of 15 credits combined between Areas IV and V, with 6 credits in one area and 9 credits in the other area. See catalog for listing of available courses.

**Basic Science Background Requirements (40 credits)**

A ST 311, Statistical Applications.....	3
BCHE 395, Biochemistry.....	3
BCHE 396, Biochemistry and Biotechnology .....	3
BIOL 111G, Natural History of Life.....	3
CHEM 111G/112G, General Chemistry I, II.....	8
CHEM 313/314, Organic Chemistry I, II .....	6
CHEM 315, Organic Chemistry Laboratory .....	2
MATH 191G/192, Calculus and Analytic Geometry I, II.....	8

PHYS 211G/212 General Physics I, II or PHYS 221G/222G General Physics for Life Sciences I, II.....	6
--	---

**Core Requirements (42-44 credits from Tier I, II, and III courses)****Tier I courses (all are required):**

BCHE 494, Techniques in Genetic Engineering.....	4
BIOL 211 and 211L, Cellular and Organismal Biology and Laboratory.....	4
BIOL 311/311L, General Microbiology and Laboratory.....	5
BIOL 377, Cell Biology.....	3
GENE 110, Experimental Systems in Genetics.....	1
GENE 305L, Genetic Techniques Laboratory .....	1
GENE 315, Molecular Genetics.....	3
GENE 320, Heredity and Population Genetics .....	3
GENE 440, Genetics Seminar .....	1
GENE 452, Applied Bioinformatics or MOLB 470, Bioinformatics & Genome Analysis .....	3

**Tier II courses (choose one course from each of the following four areas):****Selection response:**

AGRO 462, Plant Breeding .....	3
ANSC 423, Animal Breeding.....	3
BIOL 467, Evolution .....	3

**Physiology:**

ANSC 421, Physiology of Reproduction .....	3
BIOL 354, Physiology of Humans.....	3
BIOL 381, Animal Physiology.....	3
BIOL 385, An Introduction to Cancer.....	3
BIOL 451, Physiology of Microorganisms .....	3
BIOL 474, Immunology .....	3
EPWS 314, Plant Physiology.....	3
HORT 471, Plant Mineral Nutrition.....	3

**Organism structure:**

ANSC 370, Anatomy and Physiology of Farm Animals.....	4
BIOL 313, Structure and Function of Plants.....	3
BIOL 322, Zoology.....	3
BIOL 330, Comparative Anatomy and Embryology.....	4
BIOL 470, Developmental Biology.....	3
BIOL 465, Invertebrate Zoology .....	4
EPWS 303, Economic Entomology.....	4

**Molecular Genetics:**

BIOL 475, Virology .....	3
BIOL 478, Molecular Biology of Microorganisms.....	3
BIOL 482, Microbial Systematics .....	2
GENE 486, Genes and Genomes .....	3
GENE 488, Gene Regulation.....	3

**Tier III courses ( Choose one science and ethics course from the following):**

AGRO 303V, Genetics and Society.....	3
HON 306V, Science, Ethics, and Society.....	3
PHIL 321, Biomedical Ethics .....	3

**Additional courses**

Electives to bring total to 128 credits including 48 upper division credits.

**Recommended Electives****Honors College:****Nine credits from:**

HON 205G, Life, Energy, and Evolution; HON 214, Successful Fellowship Writing; HON 225G, History of Ethics; HON 245G, Chemistry: Experiments, Laws, and Theories.

**Six credits from:**

HON 306V, Science, Ethics, & Society; HON 314, Successful Fellowship Writing; HON 322V, Science and Public Policy; HON 410, Honors Internship; HON 420, Independent Studies; HON 421, Special Topics.

**Three credits:**

HON 400, Honors Thesis.

**Bioinformatics:**

Students may pursue a minor in Bioinformatics after consulting with an advisor in the Computer Science Department. There are 19 credits of course-

work required for this minor which involve: C S 171G, C S 272, C S 370 or 371, and C S 486.

### MAJOR: Microbiology

The major in microbiology provides a solid academic base for those planning to enter any of the various fields of microbiology.

#### Nondepartmental Requirements

BCHE 341, Survey of Biochemistry or BCHE 395, Biochemistry.....	3 or 4
C S 110, Computer Literacy.....	3
CHEM 111G,112G, General Chemistry I, II.....	3
CHEM 211, Organic Chemistry*.....	4
CHEM 371, Analytical Chemistry*.....	4
MATH 142G, Calculus for the Biological and Management Sciences I, or MATH 191G, Calculus and Analytic Geometry I.....	3-4
PHYS 211G, General Physics I or PHYS 221G, General Physics for Life Sciences I.....	3
PHYS 212, General Physics II, or PHYS 222G, General Physics for Life Sciences II.....	3
PHYS 211GL, 212L, General Physics Laboratory.....	2
*CHEM 313, 314, 315, Organic Chemistry I, II, and Lab (8 credits), may substitute for CHEM 211, CHEM 371.	

#### Departmental Requirements

BIOL 111G, Natural History of Life.....	3
BIOL 111L, Natural History of Life Laboratory.....	1
BIOL 211G, Cellular and Organismal Biology.....	3
BIOL 211L, Cellular and Organismal Biology Laboratory.....	1
BIOL 311, General Microbiology.....	3
BIOL 311L, General Microbiology Laboratory.....	2
BIOL 305, Principles of Genetics.....	3
BIOL 451, Physiology of Microorganisms.....	3
BIOL 474, Immunology.....	3
BIOL 478, Molecular Biology of Microorganisms.....	3
BIOL 479, Medical Microbiology.....	3
BIOL 479L, Medical Microbiology Laboratory.....	1
Two additional credits related to microbiology numbered 300 or above to bring total upper-division credits in microbiology to 24. This course should be chosen in consultation with an advisor.	

Electives: sufficient to bring total credits to 128 including 48 upper-division.

### MINOR: Biology

A student cannot earn a bachelor's degree in Biology or Microbiology and also earn a minor in Biology.

18 credits in Biology, of which at least 9 credits must be numbered 300 and above. No more than 3 credits may be taken as special topics or individual study..... 18

### MINOR: Conservation Ecology

A minor in Conservation Ecology is available for students who choose to major in other areas, but wish to include Conservation Ecology in their academic training. A minor in Conservation Ecology must include a minimum of 20 credits in the discipline with 9 of these coming from upper-division courses.

Core Curriculum (17 credits):

BIOL 111G, Natural History of Life.....	3
BIOL 111L, Natural History of Life, Lab.....	1
BIOL 301, Principles of Ecology.....	3
BIOL 462, Conservation Biology; or FWCE 310, Managing Ecological Systems for Biodiversity.....	3
FWCE 330, Natural History of the Vertebrates.....	4
Conservation (3 credits): BIOL 488, Principles of Conservation Genetics; BIOL 467, Evolution; FWCE 409, Introduction to Population Ecology.....	3

### MINOR: Human Biology

The Human Biology minor is intended to provide academic recognition for students who wish to focus a significant amount of attention on courses that deal with human beings from a wide variety of biological standpoints. Thus, course work may encompass topics representing a range of viewpoints such as biological function, human ecology, human origins, and psychology. Successful completion of this minor will provide students with a valuable interdisciplinary perspective on the human condition. This program consists of a minimum of 18 hours, that includes a minimum of 12 from within the Biology Department and a

minimum of 3 outside the department. Successful completion of the minor will be certified by the Biology Department. A grade of C, S or better is required of all minor courses.

#### Required Departmental Courses

BIOL 211/211L, Cell and Organismal Biology.....	4
BIOL 305, Principles of Genetics.....	3

#### Additional courses to total 18 credits from:

##### Within Department (minimum 6 credits)

BIOL 254, Human Physiology or BIOL 381, Animal Physiology.....	3
BIOL 305, Principles of Genetics.....	1
BIOL 330, Comparative Anatomy/Embryology.....	4
BIOL 385, An Introduction to Cancer.....	3
BIOL 441, Seminar in Comparative Physiology.....	3
BIOL 474, Immunology.....	3
BIOL 490, Neurobiology.....	3
BIOL 454, Biology of Respiration.....	3
HON 306V, Science, Ethics and Society.....	3

##### Outside Department (minimum 3 credits; maximum 6 credits)

ANTH 120G, Human Ancestors.....	3
ANTH 355, Physical Anthropology.....	3
ANTH 357V, Medical Anthropology.....	3
ANTH 458, Anthropology of Reproduction.....	3
HON 223G, Evolution of Human Sexuality.....	3
HON 232G, The Human Mind.....	3
PSY 374, Psychopharmacology and Toxicology.....	3
PSY 375, Introduction to Biopsychology.....	3

### MINOR: Microbiology

A student cannot earn a bachelor's degree in Biology or Microbiology and also earn a minor in Microbiology.

BCHE 341, Survey of Biochemistry, or BCHE 395, Biochemistry.....	3
BIOL 311, General Microbiology.....	3
BIOL 311L, General Microbiology Laboratory.....	2
At least 11 credits from among BIOL 412, Seminar in Microbiology, BIOL 451, Physiology of Microorganisms, BIOL 473, Ecology of Microorganisms, BIOL 474, Immunology, BIOL 475, Virology, BIOL 477, Applied and Environmental Microbiology, BIOL 478, Molecular Biology of Microorganisms, BIOL 479, Medical Microbiology, BIOL 479L, Medical Microbiology Laboratory, and/or BIOL 482, Microbial Systematics..... 11	

## CHEMISTRY and BIOCHEMISTRY

### Associate Professor William Quintana, interim department head

**Professors** Arterburn, Eiceman, Gopalan, Herndon, M. Johnson, Kuehn, Rayson, Smirnov, H. Wang, Zoski; **Associate Professors** Lyons, J. Smith, Quintana, D. Smith; **Assistant Professors** Houston, Lara, Lusetti, Maio, Rowland; **Adjunct Professors** Reed; **College Professors** Dunlavy, D. Johnson, Richens

Phone: (575) 646-2505

<http://www.chemistry.nmsu.edu/>

**DEGREE: Bachelor of Science**

**MAJOR: Chemistry**

**MAJOR: Biochemistry**

**DEGREE: Bachelor of Arts**

**MAJOR: Chemistry**

**MINORS: Biochemistry**

**Chemistry**

**Environmental Chemistry**

A degree in chemistry or biochemistry enables a student to pursue a wide variety of careers in: research, production, sales, management, and teaching. These degrees are also an excellent preparation for professional studies in medicine, dentistry, forensics, veterinary science, optometry, pharmacology, pharmacy, and law.



Chemistry majors who have completed the requirements for the Bachelor of Science degree may receive American Chemical Society certification if they take one additional one-semester course which includes 1 credit of laboratory.

Students who complete a B.S. in Biochemistry and wish to complete the B.A. in Chemistry must complete 3 additional upper division chemistry credits that are not counted in the B.S. in Biochemistry.

All departmental and nondepartmental requirements may not be taken S/U and must earn a C or better final grade.

This department does not have a foreign language requirement for any of its degrees.

**DEGREE: Bachelor of Science**

**MAJOR: Chemistry**

**Nondepartmental Requirements**

MATH 191G, 192, Calculus and Analytic Geometry I, II	6
MATH 291G, Calculus, and Analytic Geometry III	3
MATH 391, MATH 392, C S 172, or STAT 371	3-4
PHYS 213, 213L, Mechanics and Experimental Mechanics	4
PHYS 214, 214L, Electricity and Magnetism and Lab	4
PHYS 315, Modern Physics	3

**Departmental Requirements**

BCHE 395 or BCHE 341, Introductory Biochemistry	3 or 4
CHEM 115, 116, Principles of Chemistry I, II, or CHEM 111G, 112G, 217, General Chemistry I, II, III	8-11
CHEM 242, Explorations in Chemistry	1
CHEM 313, 314, 315, Organic Chemistry I, II, and Lab	8
CHEM 356, Descriptive Inorganic Chemistry	3
CHEM 357, Synthetic Inorganic Laboratory	2
CHEM 371, Analytical Chemistry	4
CHEM 433, 434, Physical Chemistry I, II	6
CHEM 435, Physical Chemistry Laboratory	2
CHEM 443, Senior Seminar	1
CHEM 456, Inorganic Structure and Bonding	3
CHEM 471, Instrumental Analysis	4
Electives: Sufficient to bring total credits to 128, including 48 upper-division.	

Note: Students should work closely with their advisors and review carefully the prerequisites for and the sequential nature of courses required for the Bachelor of Science. There is no foreign language requirement for any baccalaureate degree from this department.

**DEGREE: Bachelor of Science**

**MAJOR: Biochemistry**

**Nondepartmental Requirements**

A ST 311, Statistical Applications	3
BIOL 211G, Cellular and Organismal Biology	3
BIOL 211L, Cellular and Organismal Biology Laboratory	1
BIOL 311, General Microbiology	3
BIOL 311L, General Microbiology Laboratory	2
BIOL 305, Principles of Genetics	3
BIOL 377, Cell Biology	3
C S 110, Computer Literacy	3
MATH 191G, 192G, Calculus and Analytical Geometry	6
PHYS 213, Mechanics, and PHYS 214, Electricity and Magnetism, or PHYS 211G, General Physics I, and PHYS 212G, General Physics II, or PHYS 215 Engineering Physics I and PHYS 216 Engineering Physics II, or PHYS 221G, General Physics for Life Sciences I, and PHYS 222G, General Physics for Life Sciences II	6
PHYS 213L, Experimental Mechanics, and PHYS 214L, Electricity and Magnetism Lab, or PHYS 211GL, General Physics I Lab, and PHYS 212L, General Physics II Lab	2

**Departmental Requirements**

CHEM 115, 116 or CHEM 111G, 112G, 217	8-11
CHEM 313, 314, 315, Organic Chemistry I, II, and Lab	8
CHEM 371, Analytical Chemistry	4
CHEM 433 and 434, or CHEM 431 and 456, or CHEM 431 and 356, or CHEM 431 and BCHE 432	6
BCHE 140, Introduction to Biochemistry (S/U)	1
BCHE 395, Biochemistry I	3
BCHE 396, Biochemistry II	3

BCHE 397, Experimental Biochemistry	3
BCHE 440, Biochemistry Seminar (S/U)	1
BCHE 446, Biochemistry III	3
BCHE 494, Techniques in Genetic Engineering	4
Electives: Sufficient other courses to bring total credits to 128, including 48 upper division. CHEM 310V will not count.	

**DEGREE: Bachelor of Arts**

**MAJOR: Chemistry**

The Bachelor of Arts curriculum is designed to provide flexibility with less depth in chemistry, physics, and mathematics. The program may be used by students planning extensive study in other areas and requires emphasis in a second field of study.

**Nondepartmental Requirements**

MATH 191G, 192, Calculus and Analytic Geometry I, II	6
PHYS 211G, 212, General Physics I, II, or PHYS 221G, 222G, General Physics for Life Sciences I, II	6
PHYS 211GL, 212L, General Physics Laboratory I, II	2
Emphasis area	18
(Nine credits must be upper-division. See advisor for approval.)	

**Departmental Requirements**

CHEM 115, 116, Principles of Chemistry I, II, or CHEM 111G, 112G, 217, General Chemistry I, II, III	8-11
CHEM 313, 314, 315, Organic Chemistry I, II, and Lab	8
CHEM 356, Descriptive Inorganic Chemistry	3
CHEM 357, Synthetic Inorganic Laboratory	2
CHEM 371, Analytical Chemistry	4
CHEM 431, Physical Chemistry	3
CHEM 443, Senior Seminar	1
Three additional chemistry credits (BCHE 341 or BCHE 395 can be used for electives but CHEM 310V will not count.)	
Electives: sufficient to bring total credits to 128, including 48 upper-division.	

**MINOR: Biochemistry**

BCHE 395, Biochemistry	3
CHEM 111G, General Chemistry I, or CHEM 115, Principles of Chemistry I	4
CHEM 112G, General Chemistry II, or CHEM 116, Principles of Chemistry II	4
CHEM 313, Organic Chemistry I	3
CHEM 314, Organic Chemistry II	3
One additional Biochemistry or Chemistry credit, but not including BCHE 341, Survey of Biochemistry	1

The following courses do not count towards minor: CHEM 100, Basic Chemistry; CHEM 110G, Principles and Applications of Chemistry; CHEM 217, General Chemistry III; CHEM 241, Introduction to Research; CHEM 310V, Chemistry and Society; CHEM 351, Special Topics; CHEM 442, Glass Blowing; CHEM 443, Senior Seminar; BCHE 341, Survey of Biochemistry. Toxicology and supplemental instruction (SI) courses are not accepted. Course provisionally allowed: CHEM 441, Advanced Research (3 credits maximum); CHEM 451, Special Topics (by petition only.)

**MINOR: Chemistry**

CHEM 111G, General Chemistry I, or CHEM 115, Principles of Chemistry	4
CHEM 112G, General Chemistry II, or CHEM 116, Principles of Chemistry II	4
CHEM 211, Organic Chemistry, or CHEM 313, Organic Chemistry I	3-4
CHEM 314, Organic Chemistry II	3
Sufficient additional upper division CHEM/BCHE credits to bring total upper division CHEM/BCHE credits to at least 9. Recommendations are below	2-6
Recommended courses for Physical/Analytical Chemistry emphases:	
CHEM 356, Descriptive Inorganic Chemistry	3
CHEM 371, Analytical Chemistry	4
CHEM 431, Physical Chemistry	3
Recommended courses for Biochemical emphasis:	
CHEM 313, Organic Chemistry I	3
CHEM 314, Organic Chemistry II	3
BCHE 341, Survey of Biochemistry	4

The following courses do not count towards a minor in Chemistry: CHEM 100, Basic Chemistry; CHEM 110G, Principles and Applications of Chemistry; CHEM 217, General Chemistry III; CHEM 241, Introduction to Research; CHEM 310V, Chemistry and Society; CHEM 351, Special Topics; CHEM 442, Glass Blowing; CHEM 443, Senior Seminar; No BCHE courses except BCHE 341, Survey of Biochemistry. Toxicology and supplemental instruction (SI) courses are not accepted. Course provisionally allowed: CHEM 441, Advanced Research (3 credits maximum); CHEM 451, Special Topics (by petition only.)

#### MINOR: Environmental Chemistry

Students must pass the courses listed below. Check the undergraduate catalog for prerequisites.

BIOL 477, Applied and Environmental Microbiology.....	4
C E 256, Environmental Science. ....	3
C E 355V, Technology and the Global Environment. ....	3
C E 356, Fundamentals of Environmental Engineering .....	3
CHEM 111G, General Chemistry I, or CHEM 115, Principles of Chemistry I. ....	4
CHEM 112G, General Chemistry II, or CHEM 116, Principles of Chemistry II. ....	4
CHEM 211, Organic Chemistry (4) or CHEM 313, Organic Chemistry I; CHEM 314, Organic Chemistry II and CHEM 315, Organic Chemistry Laboratory .....	8
CHEM 371, Analytical Chemistry, or CHEM 471, Instrumental Methods of Analysis. ....	4
CHEM 422, Environmental Chemistry .....	3
CHEM 424, Soil Chemistry. ....	3
CHEM 451, Special Topics (as appropriate) .....	1-3
I E 411, Occupational Safety .....	3
TOX 361, Basic Toxicology .....	3
B.A. or B.S. majors in Chemistry or Biochemistry must pass an additional 9 credits from these courses:	

The following courses **do not** count toward a minor in Environmental Chemistry: CHEM 100, Basic Chemistry; CHEM 110G, Principles and Applications of Chemistry; CHEM 310V, Chemistry and Society; CHEM 442, Glass Blowing. Supplemental instruction (SI) courses are not accepted.

## COMMUNICATION STUDIES

#### Associate Professor Anne P. Hubbell, department head

**Professor** Hacker; **Associate Professors** Flora, Morgan; **Assistant Professors** Armfield, Dylko; **College Associate Professor** Brown  
(575) 646-2801  
<http://web.nmsu.edu/~nmsucomm/>

#### DEGREE: Bachelor of Arts

#### MAJOR: Communication Studies

#### MINOR: Communication Studies

#### MINOR: Communication and National Security

The communication studies program is designed to enhance students' interpersonal skills, presentational skills, and critical thinking skills. Thus the successful graduate should be able to work effectively with people, assimilate, organize and analyze information, solve problems, make effective presentations, and show potential for leadership. The program prepares students for careers in several professions, such as training and development, public relations, law, advertising and sales, government service, mediation, customer relations, human resources, international service, fund raising, and the ministry.

#### MAJOR: Communication Studies

In addition to completing the general education requirements of the university and the college, students majoring in communication studies are required to complete 21 credits of core COMM courses and 15 credits of COMM electives for a total of 36 credits. Any exception to these policies requires department head approval.

All COMM courses must be completed with a grade of C or better.

#### Communication Studies Core Courses (21 credits)

COMM 265G, Principles of Human Communication .....	3
COMM 285, Survey of Communication Theory .....	3
COMM 305, Communication Research Methods .....	3
COMM 351, Persuasion Theory and Practice .....	3

COMM 370, Organizational Communication .....	3
COMM 376, Communication and Culture.....	3
COMM 384, Interpersonal Communication.....	3

#### Communication Studies Elective Courses (15 credits)

To reach a total of 36 credits, students must complete successfully an additional 15 COMM credits of their choosing.

**Students are required to complete a second language. Please see the Arts & Sciences College Degree Requirements for specifics.**

#### MINOR: Communication Studies

A minor in Communication Studies consists of 18 credits; at least 9 of those credits must be in courses numbered 300 or above. All courses must be completed with grades of "C" or better.

COMM 265G, Principles of Human Communication. ....	3
Two of COMM 370, Organizational Communication; COMM 376, Communication and Culture; and COMM 384, Interpersonal Communication .....	6
Three of COMM 253G, Public Speaking; COMM 285, Survey of Communication Theory; COMM 305, Communication Research Methods; COMM 351, Persuasion Theory and Practice; COMM 353, Advanced Public Speaking; COMM 377, Conflict Management; COMM 425, Small Group Communication; COMM 440, Political Communication; COMM 450, Technologies of Human Communication; COMM 465, Nonverbal Communication; COMM 470, Leadership Communication; COMM 475, International Communication; COMM 480, Health Communication; COMM 490, Independent Study; COMM 491, Selected Topics.....	9

#### MINOR: Communication and National Security

A minor in Communication and National Security consists of 18 credits, 12 credits of required course and 6 credits of electives. All courses must be completed with grades of "C" or better.

COMM 455 Fundamentals of Communication & National Security .....	3
COMM 456 Communication & the Intelligence Cycle .....	3
COMM 457 Strategic Communication & Public Diplomacy.....	3
COMM 458 Intercultural Communication & National Security .....	3
Total of 12 required credits	

Two additional courses (6 credit hours) from the following courses:

C J 380 Introduction to Terrorism.....	3
C J 412 Introduction to Security Technology & Loss Prevention.....	3
C J 482 Transnational Terrorism .....	3
GEOG 281 Map Use and Analysis .....	3
GEOG 362 Geography of International Development.....	3
GEOG 363 Cultural Geography .....	3
GOVT 464 National Security Policy.....	3
GOVT 477 Sociology of Development and the World System .....	3
GOVT 485 Fundamentals of Intelligence Studies .....	3
SOC 362 Urban Society in a Global World: Problems, Prospects, and Promises	3
SOC 478 Sociology of Development and the World System.....	3
SOC 489 Globalization .....	3

## COMPUTER SCIENCE

#### Professor Enrico Pontelli, department head

**Professors** Leung, Tran; **Associate Professors** Cook, Pivkina, Song; **Assistant Professors** Cao, Jin, Misra, Villaverde; **College Professor** Steiner  
(575) 646-3723  
<http://www.cs.nmsu.edu>

#### DEGREE: Bachelor of Science

#### MAJOR: Computer Science

#### DEGREE: Bachelor of Arts

#### MAJOR: Computer Science

#### MINORS: Algorithm Theory Bioinformatics

## Computer Systems Software Development

The undergraduate computer science program prepares students for graduate study in computer science and for employment in positions involving the design, construction, and application of computer systems. Students should review their programs of study in consultation with their advisors each semester, preferably using the most recent Undergraduate Catalog. The department also offers a minor degree, with specialized tracks in algorithm theory, bioinformatics, computer systems, and software development. For more information on the Department of Computer Science, please visit the web site [www.cs.nmsu.edu](http://www.cs.nmsu.edu).

### DEGREE: Bachelor of Science MAJOR: Computer Science

The Bachelor of Science in Computer Science is the traditional undergraduate degree in Computer Science. It is rigorously focused on educating the student in the fundamental disciplines of Computer Science. It prepares the student for any technological field in industry, and also provides the preparation for advanced graduate studies in Computer Science. It is the main undergraduate degree in the Computer Science department, and should be the choice of a single-major Computer Science student.

#### General Requirements Exception

A grade of at least C must be earned in each of the courses taken to satisfy the departmental and nondepartmental requirements. No course may be counted as satisfying both a departmental and a nondepartmental requirement. No course taken to satisfy either a departmental or a nondepartmental requirement may be taken S/U.

#### Departmental Requirements (54-56 credits)

C S 172, Computer Science I	4
C S 271, Object-Oriented Programming	4
C S 272, Introduction to Data Structures	4
C S 273, Machine Programming and Organization	4
C S or MATH 278, Discrete Mathematics for Computer Science	4
C S 370, Compilers and Automata Theory	4
C S 371, Software Development	4
C S 372, Data Structures and Algorithms	4
C S 448, Senior Project, or C S 449, Senior Thesis	4
C S 471, Programming Language Structure I	3
C S 473, Architectural Concepts I	3
C S 474, Operating Systems I	3
Two of the following: C S 470, Functional Programming; C S 472, Logic and Constraint Logic Programming; C S 475, Artificial Intelligence I; C S 476, Computer Graphics I; C S 478, Computer Security; C S 480, Linux System Administration; C S 481, Visual Programming; C S 482, Database Management Systems I; C S 483, Introduction to Robotics; C S 484, Computer Networks I; C S 485, User Interface Design; C S 486, Bioinformatics; C S 491, Parallel Programming; C S 492, Computer Systems Modeling and Simulation	6*
One of the following: C S 470, Functional Programming; C S 472, Logic and Constraint Logic Programming; C S 475, Artificial Intelligence I; C S 476, Computer Graphics I; C S 478, Computer Security; C S 480, Linux System Administration; C S 482, Database Management Systems I; C S 483, Introduction to Robotics; C S 484, Computer Networks I; C S 485, User Interface Design; C S 486, Bioinformatics; C S 491, Parallel Programming; MATH 291G, Calculus and Analytical Geometry; C S 492, Computer Systems Modeling and Simulation; MATH 377, Introduction to Numerical Methods; MATH 430, Combinatorial Mathematics; MATH 454, Mathematical Logic; MATH 480, Vector Spaces and Matrix Algebra; E E 469, Communications Networks; BIOL 111G/111L, Natural History of Life/Lab; BIOL 211G/211L, Cellular and Organismal Biology/Lab; CHEM 111G, General Chemistry I; CHEM 112G, General Chemistry II; CHEM 114, General Chemistry for Engineers; GEOG 111G, Geography of the Natural Environment; GEOL 111G, Survey of Geology; HON 205G, Life, Energy, and Evolution; HON 219G, Earth, Time, and Life; PHYS 211G/211GL, General Physics I/Lab; PHYS 212G/212GL, General Physics II/Lab; PHYS 215G/215GL, Engineering Physics I/Lab; PHYS 216G/216GL, Engineering Physics II/Lab	3-5*

#### Nondepartmental Requirements (30-31 credits)

COMM 253G, Public Speaking, or COMM 265G, Principles of Human Communication, or HON 265G, Principles of Human Communication	3
ENGL 218G, Technical and Scientific Communication, or ENGL 311G, Advanced Composition, or ENGL 318G, Advanced Technical and Professional Communication	3
MATH 280, Introduction to Linear Algebra, or MATH 480, Vector Spaces and Matrix Algebra	3
MATH 191G-192G, Calculus and Analytic Geometry I, II	8

One of the following: MATH 331, Introduction to Modern Algebra; MATH 332, Introduction to Analysis; MATH 377, Introduction to Numerical Methods; MATH 392, Introduction to Ordinary Differential Equations; MATH 430, Combinatorial Mathematics; MATH 431, Algebraic Coding Theory; MATH 454, Mathematical Logic; MATH 455, Elementary Number Theory

One of the following: A ST 311, Statistical Applications; STAT 371, Statistics for Engineers and Scientists I; STAT 470, Probability: Theory and Application

Two of the following lab science courses: ASTR 110G, Introduction to Astronomy; BIOL 111G/111L, Natural History of Life/Lab; BIOL 211G/211L, Cellular and Organismal Biology/Lab; CHEM 111G, General Chemistry I; CHEM 112G, General Chemistry II; CHEM 114, General Chemistry for Engineers; GEOG 111G, Geography of the Natural Environment; GEOL 111G, Survey of Geology; HON 205G, Life, Energy, and Evolution; HON 219G, Earth, Time, and Life; PHYS 211G/211GL, General Physics I/Lab; PHYS 212G/212GL, General Physics II/Lab; PHYS 215G/215GL, Engineering Physics I/Lab; PHYS 216G/216GL, Engineering Physics II/Lab

\*A course can satisfy only one requirement.

#### A Suggested Plan of Study for Students

The following plan applies to students who qualify to take MATH 191G.

##### Freshman Year (30 credits)

C S 172, Computer Science I	4
C S 272, Introduction to Data Structures	4
C S 273, Machine Programming and Organization	4
ENGL 111G, Rhetoric and Composition	4
MATH 191G, Calculus I	4
MATH 192G, Calculus II	4
AREA IV: Social/ Behavioral Sciences**	3
AREA V: Humanities and Fine Arts**	3

##### Sophomore Year (34 credits)

C S 271, Object Oriented Programming	4
C S 278, Discrete Mathematics for Computer Science	4
C S 370, Compilers and Automata Theory	4
C S 372, Data Structures and Algorithms	4
ENGL 218G, Technical and Scientific Communication	3
MATH 280, or MATH 480	3
A ST 311, STAT 371, or STAT 470	3
AREA IV: Social/Behavioral Sciences**	3
AREA V: Humanities and Fine Arts**	3

##### Junior Year (33 credits)

C S 371, Software Development	4
C S 471, Programming Language Structure I	3
C S 473, Architectural Concepts I	3
Computer Science 400-level Elective*	3
MATH elective (upper division)*	3
Lab Science Elective*	4
Lab Science Elective*	4
AREA IV & AREA V**	3
Viewing a Wider World**	3
Viewing a Wider World**	3

##### Senior Year (31 credits)

C S 448, Senior Project	4
C S 474, Operating Systems I	3
C S / MATH / E E / Science Elective* (upper division)	3
Computer Science 400-level Elective*	3
Upper division electives to bring total upper division to 48	
Additional electives as needed to bring total credits to 128	

\* See Lists Above

\*\* New Mexico State Common Core Requirements

Students planning to undertake graduate work in computer science are encouraged to consult with their advisor regarding the possibility of taking other computer science electives to satisfy their departmental requirements.

### DEGREE: Bachelor of Arts MAJOR: Computer Science

The Bachelor of Arts in Computer Science is an open, flexible degree plan that offers the student both a rigorous undergraduate degree program in Computer Science and an extensive open credit hour allotment to pursue knowledge in other domains. It is an excellent choice to combine into a double major



program, and is an option for the student who has an interest in learning both domain knowledge in some areas outside of Computer Science, and in acquiring a Computer Science background sufficient to pursue a strong technology career.

Students planning to undertake graduate work in Computer Science are encouraged to pursue the Bachelor of Science degree rather than the Bachelor of Arts degree. Students interested in graduate work should consult with their advisor regarding the possibility of taking other computer science electives to satisfy their departmental requirements.

#### General Requirements Exception

A grade of at least C must be earned in each of the courses taken to satisfy the departmental and nondepartmental requirements. No course may be counted as satisfying both a departmental and a nondepartmental requirement. No course taken to satisfy either a departmental or a nondepartmental requirement may be taken S/U.

#### Departmental Requirements (47-48 credits)

C S 172, Computer Science I	4
C S 271, Object Oriented Programming	4
C S 272, Introduction to Data Structures	4
C S 273, Machine Programming and Organization	4
C S or MATH 278, Discrete Mathematics for Computer Science	4
C S 370, Compilers and Automata Theory	4
C S 371, Software Development	4
C S 448, Senior Project, or C S 449, Senior Thesis	4
C S 482, Database Management Systems I	3
Two of the following: C S 372, Data Structures and Algorithms; C S 470, Functional Programming; C S 472, Logic and Constraint Logic Programming; C S 471, Programming Language Structure I; C S 473, Architectural Concepts I; C S 474, Operating Systems I; C S 475, Artificial Intelligence I; C S 476, Computer Graphics I; C S 478, Computer Security; C S 480, Linux System Administration, C S 481, Visual Programming; C S 483, Introduction to Robotics; C S 484, Computer Networks; C S 485, User Interface Design; C S 486, Bioinformatics; C S 491, Parallel Programming; C S 492, Computer Modeling and Simulation 6-7*	4
Two of the following: C S 470, Functional Programming; C S 472, Logic and Constraint Logic Programming; C S 475, Artificial Intelligence I; C S 476, Computer Graphics I; C S 478, Computer Security; C S 480, Linux System Administration; C S 481, Visual Programming; C S 483, Introduction to Robotics; C S 484, Computer Networks I; C S 485, User Interface Design; C S 486, Bioinformatics; C S 491, Parallel Programming; C S 492, Computer Systems Modeling and Simulation	6*

#### Nondepartmental Requirements (18-22 credits)

COMM 253G, Public Speaking, or COMM 265G, Principles of Human Communication, or HON 265G, Principles of Human Communication	3
ENGL 218G, Technical and Scientific Communication, or ENGL 311G, Advanced Composition, or ENGL 318G, Advanced Technical and Professional Communication	3
MATH 142G, Calculus for the Biological and Management Sciences I, or MATH 235, Calculus for the Technical Student I, or MATH 191G, Calculus and Analytical Geometry I	3-4
STAT 251G, Statistics for Business and the Behavioral Sciences, or STAT 271G, Statistics for Psychological Sciences, or STAT 371, Statistics for Engineers and Scientists I, or STAT 470, Probability: Theory and Application, or A ST 251G, Statistics for Business and the Behavioral Sciences, or A ST 311, Statistical Applications	3-4
Two upper-division courses in any one department except Computer Science 6-8*	

Upper division electives to bring total upper division to 48: varied

Additional electives as needed to bring total credits to 128: varied

\*A course can satisfy only one requirement.

#### A Suggested Plan of Study for Students

##### Freshman Year (29 credits)

MATH 121G, College Algebra	3
ENGL 111G, Rhetoric and Composition	4
AREA V: Humanities and Fine Arts	3
MATH 190, Trigonometry and Precalculus	4
ENGL 218, Technical Writing	3
AREA IV: Social/Behavioral Sciences	3
Open Electives	9

##### Sophomore Year (33 credits)

C S 172, Computer Science I	4
MATH 142G, 235, or 191G, Calculus	4
C S 272, Intro to Data Structures	4

C S 273, Machine Programming and Organization	4
C S 278 or MATH 278, Discrete Math for Computer Science	4
COMM 253G, or COMM 265G, HON 265G	3
AREA V: Humanities and Fine Arts**	3
AREA IV: Social/Behavioral Sciences**	3
AREA III: Laboratory Sciences	4

##### Junior Year (34-37 credits)

C S 271, Object Oriented Programming	4
C S 371, Software Development	4
C S 370, Compiler Construction	4
C S 482, Database Management I	3
C S elective, List 1	3-4
STAT 251G, STAT 271G, STAT 371, STAT 470, A ST 251G, or A ST 311	3-4
AREA IV: Social/Behavioral Sciences** or AREA V: Humanities and Fine Arts**	3
AREA III: Laboratory Science	4
Viewing a Wider World**	3
Upper division from another department	3-4

##### Senior Year (varied credits)

C S 448, Senior Project	4
C S elective, List 1	3
Two C S electives, List 2	6
Viewing a Wider World**	3
Upper division from another department	3-4
Electives as needed to meet minimum credit requirements	

\* See Lists Above

\*\* New Mexico State Common Core Requirements

#### MINOR: Algorithm Theory (22-23 credits)

C S 172, Computer Science I	4
C S 272, Introduction to Data Structures	4
C S 278, Discrete Mathematics for Computer Science; or any of MATH 278, Discrete Mathematics for Computer Science; MATH 279, Introduction to Finite Mathematics; or MATH 330, Discrete Mathematics	3-4
C S 370, Compilers and Automata Theory	4
C S 372, Data Structures and Algorithms	4
One of the following: C S 470, Functional Programming; C S 472, Logic and Constraint Logic Programming; C S 475, Artificial Intelligence I; C S 476, Computer Graphics I; C S 492, Computer Systems Modeling and Simulation; MATH 377, Introduction to Numerical Methods; MATH 430, Combinatorial Mathematics; MATH 431, Algebraic Coding Theory.	

#### MINOR: Bioinformatics (26-27 credits)

BIOL 211G and BIOL 211GL, Cellular and Organismal Biology	4
C S 172, Computer Science I	4
C S 272, Introduction to Data Structures	4
C S 370, Compilers and Automata Theory, or C S 371, Software Development	4
C S 372, Data Structures and Algorithms	4
C S 486, Bioinformatics	3
One of: C S 472, Logic Programming; C S 482, Database Management Systems I; C S 491, Parallel Programming; BIOL 305, Principles of Genetics; CHEM 433, Physical Chemistry I; MATH 331, Introduction to Modern Algebra; MOLB 470, Bioinformatics and Genome Analysis; or PHYS 315, Modern Physics	3-4

#### MINOR: Computer Systems (25-26 credits)

C S 172, Computer Science I	4
C S 271, Object-Oriented Programming, or C S 272, Introduction to Data Structures	4
C S 273, Machine Programming and Organization	4
C S 278, Discrete Mathematics for Computer Science; or any of MATH 278, Discrete Mathematics for Computer Science; MATH 279, Introduction to Finite Mathematics; or MATH 330, Discrete Mathematics	3-4
C S 370, Compilers and Automata Theory, or C S 371, Software Development	4
C S 473, Architectural Concepts I, or C S 474, Operating Systems I	3
C S 476, Computer Graphics I, or C S 484, Computer Networks I, C S 480 Linux System Administration, or C S 491, Parallel Programming	3

#### MINOR: Software Development (21-23 credits)

C S 172, Computer Science I	4
-----------------------------	---



C S 271, Object-Oriented Programming, or C S 272, Introduction to Data Structures.....	4
C S 278, Discrete Mathematics for Computer Science; or any of MATH 278, Discrete Mathematics for Computer Science; MATH 279, Introduction to Finite Mathematics; or MATH 330, Discrete Mathematics.....	3-4
C S 371, Software Development .....	4
Two of: C S 370, Compilers and Automata Theory; C S 470, Functional Programming; C S 472, Logic and Constraint Logic Programming; C S 474, Operating Systems I; C S 475, Artificial Intelligence I; C S 476, Computer Graphics I; C S 482, Database Management Systems I; C S 484, Computer Networks I; C S 485, User Interface Design; C S 491, Parallel Programming.....	6-7

Note: A student cannot earn more than one of these minors unless he/she passes at least 6 credits in the second minor beyond the requirements of the first minor. The maximum number of these minors that a student may earn is two. Most courses for the minors listed above have prerequisites. Please check the undergraduate catalog for individual course prerequisites.

Students interested in pursuing a computer science minor are encouraged to pick up more information at the departmental office.

## CREATIVE MEDIA

**Dr. Lisa Bond-Maupin, interim department head**

**Professor** Lewis; **Assistant Professors** Fisher, Lanasa; **College Assistant Professors** Fowler, Lau; **College Instructors** Bakshi, Gorell, Nirmalakhandan.  
(575) 646-5671

<http://cmi.nmsu.edu/>

**DEGREE: Bachelor of Creative Media**

**MAJORS: Animation and Visual Effects  
Digital Film Making**

**MINORS: Animation and Visual Effects  
Digital Film Making**

### Creative Media Institute

New Mexico State University's Creative Media Institute (CMI) prepares students to become digital storytellers using state of the art, industry-standard tools. The Creative Media Institute is dedicated to developing and nurturing the artistic endeavors of student filmmakers through industry-standard education, research, and collaboration in the art, craft, and production of the moving image through storytelling, resulting in a Bachelor's of Creative Media degree. The program provides learning opportunities for newly admitted NMSU students, and provides some credit transfer opportunities for students with an associate degree from a NMSU community college or other two-year degree granting institution. The Bachelor of Creative Media provides a liberal arts background that will enable the student to pursue further education, professional training, or employment in a digital media-based industry. Study in the CMI program fosters collaborative expression based on a clear understanding of media culture, history, design and practice. CMI also offers students the opportunity for internships in digital video, animation, visualization and simulation, industrial, and educational video at varied production facilities on and off campus.

The Bachelor of Creative Media offers majors in either Digital Film Making or Animation and Visual Effects. Students choose an area of emphasis but study all aspects of digital filmmaking whether they are aspiring animators, cinematographers, directors, editors, or writers. Theory and practice are integrated at every step as students manipulate text, sound, and images using industry-standard technology. CMI houses a state of the art digital projection system screening room, post-production lab, animation lab, production space, motion capture laboratory and THX sound mixing theatre.

Due to limited capacity, students wishing to continue in the CMI program after their freshman year will be required to fill out an application. A limited number of students will be permitted to continue their film studies into their sophomore year. The quality of the student's work as demonstrated in the application and in their first year course work will be the determining factors. Exact details and procedures for applying to the CMI program can be found on the CMI website at [cmi.nmsu.edu](http://cmi.nmsu.edu).

**DEGREE: Bachelor of Creative Media**

### MAJOR: Digital Film Making

Students must complete a minimum of 128 credits in the following areas: 63 credits in CMI/CMT\*\*/ENGL/THTR/ART with a grade of C or better; 35 credits of Common Core; 6 credits of Viewing a Wider World; 24 credits of electives

#### Digital Film Making Foundation Courses

42 total credits total required (of which 15 credits are 300 level and above)

CMI 100, Introduction to the Creative Media Industry.....	3
CMI 101, History of Cinema.....	3
CMI 200, Sound Design I or CMT 206, Principles of Sound.....	3
CMI 205, Cinematography I or CMT 205, Cinematography.....	3
CMI 216*, Editing I or CMT 195, Digital Video Editing I.....	3
CMI 230, Developing the Animated Project.....	3
CMI 305, Business of Filmmaking/Animation or CMI 496, Media Law and Ethics.....	3
CMI 498, Final Yr. Senior Project : Production and Post Production.....	9
ENGL 303, Theory and Criticism: Film, Media, and Culture or ENGL 326, Cultural Identity and Representation Across the Media .....	3
ENGL/CMI 232, Storyboarding .....	3
ENGL/CMI 235, Principles of Story Across the Media.....	3
THTR 105, Acting for Non-Majors.....	3

#### Digital Film Making Elective Course

Choose 21 total credits from the following (of which 15 credits must be 300 level and above):

CMI 214, Acting for Film.....	3
CMI 301, Sound Design II .....	3
CMI 303, Cinema Review and Criticism.....	3
CMI 308, Writing for Animation.....	3
CMI/ENGL 309/THTR 306, Screenwriting .....	3
CMI 310, Cinematography II .....	3
CMI 311, Editing II.....	3
CMI 315, Adventures in Genre .....	3
CMI 318, Documentary Production I .....	3
CMI 319, Documentary Production II.....	3
CMI 328, Producing.....	3
CMI 329, Studies in Drama.....	3
CMI 395, Directing I.....	3
CMI 396, Directing II .....	3
CMI 397, Practicum.....	1-9
CMI 398, Special Topics .....	3-9
CMI 400, Directed Studies.....	3-9
CMI 420, Short Film Production .....	6
CMI/ENGL 480, Screenwriting II.....	3
CMI/ENGL 490, Advanced Screenwriting.....	3
CMI 495, Internship .....	3
CMI 496, Media Law/Ethics.....	3
CMI 497, Portfolio Design and Development .....	3
CMT 126**, Film Crew Training I .....	9
CMT 156**, Film Crew Training II .....	9
CMT 190**, Digital Video Production I.....	3
CMT 210**, Digital Video Production II .....	3
CMT 215**, Digital Video Editing II.....	3
CMT 222**, Pre-Production Management.....	3
ENGL 336, Studies in Film .....	3
ENGL 427, Advanced Studies in Film & Digital Media .....	3-9
ENGL 436, Advanced Studies in Film & Digital Media History & Culture .....	3-9
ENGL 437, Advanced Studies in Film & Digital Media Theory & Criticism .....	3-9

\*Course may be taken at an NMSU community college

\*\*see course descriptions in back of this catalog for designated community college campuses

### MAJOR: Animation and Visual Effects

Students must complete a minimum of 128 credits in the following areas: 66 credits in CMI/CMT\*\*/OCAN\*\*/ENGL/THTR/ART with a grade C or better; 35 credits of Common Core; 6 credits of Viewing a Wider World; 21 credits of electives.

#### Creative Media Animation and Visual Effects Emphasis Foundation Courses

45 total credits required (of which 12 credits are 300 level and above)

ART 150, Drawing I or CMI 280, Modeling .....	3
CMI 100, Introduction to CMI .....	3

CMI 216*, Editing I.....	3
CMI 231, History of Animation.....	3
CMI/ENGL 232, Storyboarding.....	3
CMI 233, Light, Shade, Render or CMI 361, After Effects: 2-D Compositing and Effects.....	3
CMI/ENGL 235, Principles of Story Across the Media.....	3
CMI 250, Beginning 2-D Animation.....	3
CMI 260, Foundations of 3-D Animation .....	3
CMI 290, 3-D Animation or CMI 350 Intermediate 2-D Animation.....	3
CMI 348, Acting & Directing for Voiceover or THTR 110*, Acting I or THTR 105, Acting for Non-Majors or CMI 214, Acting For Film .....	3
CMI 498, Final Yr. Senior Project I: Production and Post Production.....	6
CMI 499, Final Yr. Senior Project II: Production and Post Production .....	6

**Choose 21 total credits from the following (of which 15 must be 300 level and above)**

ART 150, Drawing I.....	3
ART 151, Drawing II .....	3
ART 250, Drawing III .....	3
ART 265, Sculpture I .....	3
CMI 214, Acting For Film.....	3
CMI 230, Developing the Animated Project.....	3
CMI 233, Light,Shade, Render.....	3
CMI 270, Rigging for 3-D Animation.....	3
CMI 271, Rigging for 2-D Animation.....	3
CMI 280, Modeling .....	3
CMI 290, 3-D Animation .....	3
CMI 301, Sound Design II .....	3
CMI 303, Cinema Review and Criticism.....	3
CMI 308, Writing for Animation.....	3
CMI 311, Editing II.....	3
CMI 323, Texture and Matte Painting .....	3
CMI 328, Production Management.....	3
CMI 332, 3-D Character Design .....	3
CMI 341, Film Techniques for Animators .....	3
CMI 350, Intermediate 2-D Animation.....	3
CMI 360, Previsualization .....	3
CMI 361, After Effects: 2-D Compositing & Effects.....	3
CMI 365, Personnel Character Design .....	3
CMI 397, Practicum.....	1-3
CMI 398, Special Topics .....	3-9
CMI 400, Directed Studies.....	3-9
CMI 401, Motion Capture Techniques .....	3
CMI 433, 3-D Sets and Environments.....	3
CMI 441, Advanced Visual Effects.....	3
CMI 450, Advanced 2-D Animation.....	3
CMI 451, Effects Animation and Dynamic Simulation .....	3
CMI 460, Technical Direction for Animators .....	3
CMI 470, Short 2-D Animation Production.....	3
CMI 495, Internship.....	3
CMI 496, Media Law and Ethics .....	3
CMI 497, Portfolio Design and Development .....	3
ENGL 303, Theory and Criticism: Film, Media, and Culture.....	3
ENGL 326, Cultural Identity and Representation Across the Media .....	3
THTR 105, Acting for Non-Majors.....	3

**MINOR: Digital Film Making**

Take 18 credits from the CMI, CMI/ENGL, CMI/THTR courses as listed in the Digital Film Making major. A minimum of 9 credits must be upper division.

**MINOR: Animation and Visual Effects:**

Take 18 credits of CMI, CMI/ENGL, CMI/THTR courses as listed in the Animation and Visual Effects major. A minimum of 9 credits must be upper division.

## CRIMINAL JUSTICE

**Professor Jim Maupin, department head**

**Professors** Maupin, Mays (Emeritus), Winfree; **Associate Professor** Bejarano, Keys; **Assistant Professors** Crowley, Duran, Greene, Maratea, Posadas; **Assistant College Professors** Akins, Corbett, DiMatteo, Dimitrijevic, Joseph, Ryan. (575) 646-3316  
<http://crimjust.nmsu.edu>

**DEGREE: Bachelor of Criminal Justice**

**MINORS: Forensic Science**

The criminal justice degree plan is broadly interdisciplinary in nature embracing the study of the humanities, law, natural, behavioral and social sciences. The curriculum seeks to balance theoretical inquiry with applied knowledge.

Students are prepared for careers in law enforcement, corrections, probation and parole, work with juveniles, victim services, non- and not-for profit organizations connected and the related field of forensics. Graduates have also been successful in law school and graduate programs in the social sciences. The undergraduate major consists of at least 36 credits in the major field, 21 of which must be numbered 300 or above (excluding C J 393, Internship in Criminal Justice).

The department offers an interdisciplinary minor in Forensic Sciences. Students interested in the minor should consult with the department head.

**DEGREE: Bachelor of Criminal Justice**

**Lower Division (100- and 200-level) Departmental Requirements**

C J 101G, Introduction to Criminal Justice.....	3
C J 205, Criminal Law I .....	3
C J 210, The American Law Enforcement Systems.....	3
C J 230, Introduction to Corrections .....	3
C J 250, Courts and the Criminal Justice System.....	3
NOTE: Prior to enrolling in upper division courses, lower division courses must be completed or final courses must be in progress.	

**Upper-Division (300- and 400-level) Departmental Requirements:**

One course from the following: C J 300, Introduction to Criminal Justice Research; GOVT 300, Political Research Skills; PSY 310, Experimental Methods; SOC 352, Social Research: Methods; S WK 467, Social Work Research I.....	3
C J 301, Advanced Research Methods (or any statistics class).....	3
C J 449, Senior Seminar.....	3
Criminal Justice electives: 4 upper-division criminal justice courses (not to include C J 393, Internship in Criminal Justice, or any criminal justice required course).....	12

**Nondepartmental Requirements**

Students seeking the BC J degree must complete the College of Arts and Sciences second language requirement (see second language requirement under "College Degree Requirement" section of this catalog) or MATH 191G, and two Viewing a Wider World courses, one each from two different colleges other than the College of Arts and Sciences.

A student must earn a C or better to receive credit for any departmental and nondepartmental requirement for the BC J degrees.

General Electives: Sufficient to bring the total credits to 128, including 48 upper-division credits.

**MINOR: Forensic Science**

Forensic Science is the application of principles and techniques of scientific analysis in a legal context. Forensic scientists study physical evidence to resolve issues involving criminal investigations, environment analyses and similar areas of research.

A student must pass 18 credits with a grade of C or higher from the following curriculum to earn the Forensic Science minor. No courses may be taken S/U. Students must take at least 6 credits from departments outside their major(s). At least 9 credits in any minor must be upper division. Courses marked with\*asterisks\* have prerequisites, and students should check the catalog to ensure that they have taken prerequisites before enrolling in these courses. Stu-

dents must register in the minor before enrolling in any upper division Criminal Justice courses.

The following curriculum represents minimum requirements for a minor. Students interested in a career in Forensic Science are encouraged to take additional courses from those listed below.

**I. CORE COURSES:** Five credits from among the following courses: C J 306, Criminal Procedural Law; C J 321, Criminal Investigation and Intelligence; C J 424, Forensic Law; PHYS 304, Forensic Physics; and/or TOX 453, Regulatory Toxicology

**II. TRACKS:** Students must complete 9 credits from ONE of the following tracks; (A) Laboratory Analysis, (B) Human Forensic Analysis, or (C) Forensic Psychology.

**TRACK A.** Laboratory Analysis (9 credits from the following):

\*BIOL 221/221L, General Microbiology/Lab, or \*BIOL 311/331L, General Microbiology/Lab; \*BIOL 330, Comparative Anatomy and Embryology; \*BIOL 354/354L, Physiology of Humans; \*B CHE 395, Biochemistry; \*B CHE 396, Biochemistry and Biotechnology; \*CHEM 371, Analytical Chemistry; \*CHEM 421, Instrumental Analysis; \*TOX 361, Basic Toxicology; \*TOX 423, Environmental Toxicology; PHYS 211/GL, General Physics I/ General Physics Lab..... 4

**TRACK B.** Human Forensic Analysis (9 credits from the following):

Take 9 credits from: ANTH 315, Introduction to Archeology; ANTH 355, Physical Anthropology; ANTH 357V, Medical Anthropology; ANTH 388, Intermediate Field Session; ANTH 398, Intermediate Historical Field Archaeology; ANTH 451, Practical Forensic Anthropology (1 credit); \*BIOL 330, Comparative Anatomy and Embryology; ANTH 474\*, Human Osteology; ANTH 477, Fauna Analysis..... 9

Honors, Special Topics, or Independent Studies courses if approved by Academic Head, Department of Criminal Justice.

**TRACK C.** Forensic Psychology (9 credits from the following):

Principles of Behavior: \*PSY 317, Social Psychology; \*PSY 321, Psychology of Personality; \*PSY 324, Sexual Behavior; \*PSY 330, Psychology and the Law; \*PSY 358, Individual and Group Differences; \*PSY 376, Evolutionary Psychology ..... 9

Psychological Treatment: \*PSY 302, Abnormal Psychology; \*PSY 303, Community Psychology; \*PSY 374, Psychopharmacology and Toxicology; \*PSY 445, Clinical Psychology; C J 346 Psychology and the Justice System ..... 9

**TRACK D.** General Track (9 credits from the following):

ANTH 370, Forensic Anthropology; \*ANTH 474, Human Osteology; C J 306, Criminal Procedure; C J 307, Law of Evidence; C J 321, Criminal Investigation; C J 346, Psychology and the Justice System; C J 424, Forensic Law; \*PSY 330, Psychology and the Law; PHYS 304, Forensic Physics ..... 9

### III. ADDITIONAL COURSE

Complete one course from areas I or II above not already completed.

## ECONOMICS and INTERNATIONAL BUSINESS

The Department of Economics in the College of Business offers an economics major to Bachelor of Arts candidates in the College of Arts and Sciences. (Additional information may be found under the Economics and International Business section in the College of Business chapter later in this catalog).

(575) 646-2113

<http://business.nmsu.edu/academics/economics-ib/>

**DEGREE:** Bachelor of Arts

**MAJOR:** Economics

**MINOR:** Economics

The study of economics can lead to career positions in economics and related managerial and technical specialties in businesses, financial institutions, government, and education. Qualified students are also prepared for graduate study in economics, business administration including management, and law. Students who plan to pursue graduate work in economics or to become professional economic analysts should consider taking supplementary courses in accounting, computer science, mathematics, quantitative economics and/or statistics, in addition to those listed below as required.

A student must earn a grade of C or better in both the departmental and nondepartmental requirements.

**Nondepartmental Requirements**

ACCT 251, Management Accounting; or ACCT 252, Financial Accounting..... 3

MATH 120, Intermediate Algebra ..... 3  
MATH 142G, Applied Mathematics for the Biological and Social Sciences I..... 3  
MATH 121G, College Algebra, or MATH 230, Matrices and Linear Programming ..... 3  
STAT 251G, Statistics for Business and the Behavioral Sciences, or A ST 311, Statistical Applications..... 3

### Departmental Requirements

ECON 251G, Principles of Macroeconomics; and 252G, Principles of Microeconomics..... 6  
ECON 304, Money and Banking..... 3  
ECON 371, Intermediate Microeconomic Theory..... 3  
ECON 372, Intermediate Macroeconomic Theory ..... 3  
ECON 405, Economic Statistics ..... 3  
ECON 489, Senior Economics Seminar ..... 3  
Nine additional credits numbered 300 or above to bring total upper-division in major to 24.  
Electives: Sufficient to bring total credits to 128, including 48 upper-division.

### MINOR: Economics

A minor in economics consists of 18 or more credit hours of approved course work in economics of which at least 12 are numbered 300 or higher, all completed with a grade of "C" or higher.

Required courses: ECON 251G, Principles of Macroeconomics; and ECON 252G, Principles of Microeconomics (ECON 201G, Introduction to Economics, may be substituted for one of these with the approval of the department head)..... 6

One of the following: ECON 304, Money and Business; ECON 372, Intermediate Macroeconomic Theory; or ECON 454, Business Fluctuations and Forecasting ..... 3

One of the following: ECON 401, Managerial Economics; or ECON 371, Intermediate Microeconomic Theory ..... 3

The remaining 6 credits may be satisfied with any upper-division economics courses (numbered 300 or higher)..... 6

## ENGLISH

**Mónica F. Torres, department head**

**Professors** Burnham, Linkin; **Associate Professors** Garay, Miller-Tomlinson, Rourke, Schirmer, Sheppard, Thatcher, Torres, Valentine, Voisine, Wojahn; **Assistant Professors** Almjeld, Bradburd, Cull, Greenfield, Hagelin, Hoang, Smith, Stolte; **College Professors** Churchill, LaPorte, Murrell; **College Assistant Professors** LaTorra, Treon; **College Instructor** Conley

(575) 646-3931

<http://www.nmsu.edu/~english/>

**DEGREE:** Bachelor of Arts

**MAJOR:** English

**EMPHASIS:** English

**EMPHASIS:** Creative Writing

**EMPHASIS:** Literature, Language, and Culture

**EMPHASIS:** Rhetoric, Digital Media, and Professional Communication

**MINORS:** English

**Creative Writing**

**Literature**

**Rhetoric and Professional Communication**

**Medieval and Early Modern Studies**

The Department of English offers the B.A. in English as the cornerstone of studies in the humanities. This rich and versatile major provides students with a source of personal enrichment as well as verbal, analytical, and cultural skills that are readily adaptable to a variety of careers. The English curriculum includes courses in literature, language, creative writing, technical and professional communication, rhetoric, cultural studies, digital media and film. Our majors go on to succeed in a wide range of professions, including secondary and post-secondary education, business, government, publishing, and law. We offer four different major emphases that students can tailor to their individual needs, in (1) English,

(2) Creative Writing, (3) Literature, Language, and Culture, and (4) Rhetoric, Digital Media, and Professional Communication. The department provides strong and personalized advising designed to help students reach their full academic potential and future career goals.

The department also offers minors in English, creative writing, literature, medieval and early modern studies, and rhetoric and professional communication. Further information about career opportunities, emphases, and minors is available from the Department of English. Students who wish to pursue English as a double major may eliminate one elective from the departmental requirements.

**DEGREE: Bachelor of Arts**

**MAJOR: English**

**EMPHASIS: English**

**Departmental Requirements**

In addition to meeting the English basic skills requirement (see basic academic skills in the index), the student majoring in English must complete 42 credits in English beyond ENGL 111G, Rhetoric and Composition, satisfying the following requirements:

A. Twelve credits from the following courses:\*

ENGL 220G, Introduction to Creative Writing.....	3
ENGL 243, The Bible as Literature.....	3
ENGL 251, Survey of American Literature I.....	3
ENGL 252, Survey of American Literature II.....	3
ENGL 261, Masterpieces of Western European Literature, Beginnings to the Renaissance.....	3
ENGL 262, Masterpieces of Western European Literature, Post-Renaissance to Modern.....	3
ENGL 263, History of Argument.....	3
ENGL 271, Survey of English Literature I.....	3
ENGL 272, Survey of English Literature II.....	3

\*Students may make 1 or 2 of the following substitutions: HON 229G for ENGL 243; HON 220G, 231G, 234G, or 239G for ENGL 271; HON 220G, 234G, or 239G for ENGL 261; HON 231G for ENGL 272

B. Three credits of ENGL 310, Critical Writing

C. Three credits from ENGL 301, Theory and Criticism: Rhetoric and Culture; ENGL 302, Theory and Criticism: Literature and Culture; or ENGL 303, Theory and Criticism: Film, Media, and Culture

D. Six additional credits from English courses numbered 298-399\*\*

\*\* Students may count 1 or 2 of the following Honors courses towards the requirement of 6 hours of 300-level electives: HON 325V, 345V, 348V, 365V, 366V, 369V, 376V, 379V, and 382V. Students may not take both ENGL 325V and HON 325V or ENGL 392V and HON 348V.

E. Three credits from ENGL 469, Advanced Study in American Literature or ENGL 438, Literature of the American Renaissance; ENGL 439, American Realism and Naturalism; ENGL 440 Harlem Renaissance and Modernism; ENGL 441 Modern and Contemporary American Fiction; ENGL 442 Modern and Contemporary American Poetry; ENGL 456, Ethnic Studies in US Literature and Culture; ENGL 457, American Indian Literatures; ENGL 458, Latino/a Literature and Culture; ENGL 459, Black Literatures and Culture in the US.

F. Three credits from ENGL 405, Chaucer or ENGL 407, Milton.

G. Three credits from ENGL 408, Shakespeare I or ENGL 409, Shakespeare II.

H. Nine additional credits from English courses numbered 400-499

**EMPHASIS: Creative Writing**

**Departmental Requirements**

In addition to meeting the English basic skills requirement (see basic academic skills in the index), the student majoring in Creative Writing must complete 42 credits in English beyond ENGL 111G, Rhetoric and Composition, satisfying the following requirements:

A. Nine credits from the following courses:

ENGL 243, The Bible as Literature.....	3
ENGL 251, Survey of American Literature I.....	3
ENGL 252, Survey of American Literature II.....	3
ENGL 261, Masterpieces of Western European Literature, Beginnings to the Renaissance.....	3
ENGL 262, Masterpieces of Western European Literature, Post-Renaissance to Modern.....	3
ENGL 263, History of Argument.....	3

ENGL 271, Survey of English Literature I.....	3
ENGL 272, Survey of English Literature II.....	3

\*Students may make 1 or 2 of the following substitutions: HON 229G for ENGL 243; HON 220G, 231G, 234G, or 239G for ENGL 271; HON 220G, 234G, or 239G for ENGL 261; HON 231G for ENGL 272.

B. Three credits of ENGL 310, Critical Writing

C. Three credits from ENGL 301, Theory and Criticism: Rhetoric and Culture; ENGL 302 Theory and Criticism: Literature and Culture; or ENGL 303, Theory and Criticism: Film, Media, and Culture

*These 15 credits should be completed before the student enrolls in 400 level courses.*

D. Six credits in Creative Writing workshops (minimum of two different courses): ENGL 304, Creative Writing: Prose; ENGL 306, Creative Writing: Poetry; ENGL 307, Creative Writing: Creative Nonfiction; ENGL 308, Creative Writing: Playwriting; ENGL 309, Screenwriting I

E. Six credits in advanced Creative Writing Workshops: ENGL 413, Advanced Creative Writing: Prose; ENGL 414: Advanced Creative Writing: Poetry; ENGL 415, Advanced Creative Writing: Playwriting; ENGL 480, Screenwriting II  
Students should complete a total of twelve credit in workshop courses.

F. Six credits of ENGL 354, Form and Technique in Fiction, ENGL 356, Form and Technique in Poetry, or ENGL 358, Form and Technique in Playwriting

G. Nine additional credits from English courses numbered 400-499.

**EMPHASIS: Literature, Language, and Culture**

**Departmental Requirements**

In addition to meeting the English basic skills requirement (see basic academic skills in the index), the student pursuing an emphasis in Literature, Language, and Culture must complete 42 credits in English beyond ENGL 111G, Rhetoric and Composition, satisfying the following requirements:

A. Twelve credits from the following courses:\*

ENGL 220G, Introduction to Creative Writing.....	3
ENGL 243, The Bible as Literature.....	3
ENGL 251, Survey of American Literature I.....	3
ENGL 252, Survey of American Literature II.....	3
ENGL 261, Masterpieces of Western European Literature, Beginnings to the Renaissance.....	3
ENGL 262, Masterpieces of Western European Literature, Post-Renaissance to Modern.....	3
ENGL 263, History of Argument.....	3
ENGL 271, Survey of English Literature I.....	3
ENGL 272, English Literature II.....	3

\*Students may make 1 or 2 of the following substitutions: HON 229G for ENGL 243; HON 220G, 231G, 234G, or 239G for ENGL 271; HON 220G, 234G, or 239G for ENGL 261; HON 231G for ENGL 272.

B. Three credits of ENGL 310, Critical Writing

C. Three credits from ENGL 301, Theory and Criticism: Rhetoric and Culture; ENGL 302, Theory and Criticism: Literature and Culture [Recommended]; or ENGL 303, Theory and Criticism: Film, Media, and Culture

*These 18 credits should be completed before the student enrolls in 400 level courses.*

D. Six credits from English courses numbered 298-399, selected from the following:

ENGL 321V, Modern European Drama.....	3
ENGL 323, American Drama.....	3
ENGL 325V, Contemporary International Literature.....	3
ENGL 326, Cultural Identity and Representation Across the Media.....	3
ENGL 327V, Shakespeare around the Globe.....	3
ENGL 328V, Literature of Science Fiction and Fantasy.....	3
ENGL 329, Studies in Drama.....	3
ENGL 330, Studies in Poetry.....	3
ENGL 335V, Studies in the Novel.....	3
ENGL 336, Studies in Film.....	3
ENGL 339V, Chicano Literature.....	3
ENGL 340, Studies in American Literature.....	3
ENGL 341V, American Indian Literature.....	3
ENGL 342, Studies in British Literature.....	3
ENGL 349, The Short Story.....	3
ENGL 351, Folklore.....	3
ENGL 361, Southwest Folklore.....	3
ENGL 363, Literature for Children and Young Adults.....	3



ENGL 380V, Women Writers .....	3
ENGL 390V, The Arthurian Tradition.....	3
ENGL 392V, Mythology.....	3
ENGL 394V, Southwestern Literature.....	3
ENGL 399, Special Topics (with advisor approval).....	3
<i>**Students may count 1 or 2 of the following honors courses towards the requirement of 6 hours of 300-level electives: HON 325V, 348V, 365V, 366V, 376V, 379V, and 382V. Students may not take both ENGL 325V and HON 325V or ENGL 392V and HON 348V.</i>	
E. Eighteen credits distributed as follows:	
Three credits from ENGL 469, Advanced Study in American Literature; ENGL 438, Literature of the American Renaissance; ENGL 439, American Realism and Naturalism; ENGL 440, Harlem Renaissance and Modernism; ENGL 441, Modern and Contemporary American Fiction; ENGL 442, Modern and Contemporary American Poetry; ENGL 456, Ethnic Studies in US Literature and Culture; ENGL 457, American Indian Literatures; ENGL 458, Latino/a Literature and Culture; ENGL 459, Black Literature and Culture in the US.	
Three credits from ENGL 405 Chaucer or 407 Milton	
Three credits from ENGL 408 Shakespeare I or 409 Shakespeare II	
Nine additional credits from English courses numbered 400-499, selected from the following:	
ENGL 400, Independent Study (with advisor approval).....	1-3
ENGL 405, Chaucer .....	3
ENGL 406, Early Modern Poetry and Prose .....	3
ENGL 407, Milton .....	3
ENGL 408, Shakespeare I.....	3
ENGL 409, Shakespeare II.....	3
ENGL 417, Advanced Study in Critical Theory .....	3
ENGL 421, Advanced Study in a Literary Period or Movement.....	3
ENGL 422, Advanced Study in a Literary Form or Genre.....	3
ENGL 423, Advanced Study in a Major Author .....	3
ENGL 424, Advanced Study in a Major Text.....	3
ENGL 425, Advanced Study in Comparative Literature .....	3
ENGL 426, Special Topics in Critical Theory.....	3
ENGL 427, Advanced Study in Film and Digital Media.....	3
ENGL 428, Drama from the Renaissance to the Restoration.....	3
ENGL 429, British Romanticism .....	3
ENGL 432, Gothic Literature.....	3
ENGL 433, Victorian Literature .....	3
ENGL 436, Advanced Study in Film and Digital Media: History and Culture .....	3
ENGL 437, Advanced Study in Film and Digital Media: Theory and Criticism.....	3
ENGL 438, Literature of the American Renaissance .....	3
ENGL 439, American Realism and Naturalism.....	3
ENGL 440, Harlem Renaissance and Modernism.....	3
ENGL 441, Modern and Contemporary American Fiction.....	3
ENGL 442, Modern and Contemporary American Poetry.....	3
ENGL 444, Modern British Fiction .....	3
ENGL 445, Postmodern Fiction.....	3
ENGL 451, Practicum in the Grammar of American English.....	3
ENGL 452, History of the English Language.....	3
ENGL 453, World Literatures .....	3
ENGL 454, Postcolonial Literature.....	3
ENGL 456, Ethnic Studies in US Literature and Culture .....	3
ENGL 457, American Indian Literature.....	3
ENGL 458, Latino/a Literature and Culture.....	3
ENGL 459, Black Literature and Culture in the United States .....	3
ENGL 463, Advanced Study in English Literature.....	3
ENGL 469, Advanced Study in American Literature.....	3
ENGL 481, Women's Literature.....	3
ENGL 482, Gender and Popular Culture.....	3
ENGL 483, Gender and Language .....	3
ENGL 484, Gender and Literature.....	3
ENGL 486, Hollywood and Film .....	3
ENGL 487, Modernist and Experimental Film .....	3
ENGL 488, Film and Literature .....	3
ENGL 489, Cultural Studies; Literature and Theory.....	3
ENGL 492, Old English .....	3
ENGL 493, Middle English Textual Cultures.....	3
ENGL 494, Shakespeare for Educators.....	3

### Emphasis: Rhetoric, Digital Media, and Professional Communication

#### Departmental Requirements

In addition to meeting the English basic skills requirement (see basic academic skills in the index), the student pursuing an emphasis in Rhetoric, Digital Media, and Professional Communication must complete 42 credits in English beyond ENGL 111G, Rhetoric and Composition, satisfying the following requirements:

A. Twelve credits from the following courses:\*

ENGL 220G, Introduction to Creative Writing.....	3
ENGL 243, The Bible as Literature.....	3
ENGL 251, Survey of American Literature I .....	3
ENGL 252, Survey of American Literature II.....	3
ENGL 261, Masterpieces of Western European Literature, Beginnings to the Renaissance.....	3
ENGL 262, Masterpieces of Western European Literature, Post-Renaissance to Modern .....	3
ENGL 263, History of Argument.....	3
ENGL 271, Survey of English Literature I .....	3
ENGL 272, English Literature II .....	3

\*Students may make 1 or 2 of the following substitutions: HON 229G for ENGL 243; HON 220G, 231G, 234G, or 239G for ENGL 271; HON 220G, 234G, or 239G for ENGL 261; HON 231G for ENGL 272.

B. Three credits of ENGL 310, Critical Writing

C. Three credits from ENGL 301, Theory and Criticism: Rhetoric and Culture [Recommended]; ENGL 302, Theory and Criticism: Literature and Culture; or ENGL 303, Theory and Criticism: Film, Media, and Culture [Recommended]

*These 18 credits should be completed before the student enrolls in 400 level courses.*

*Under D, E, F, students must take a total of 12 credit hours at the 400 level or above.*

D. Six credits from the following courses in Rhetoric and Composition:

ENGL 418, History of Rhetoric .....	3
ENGL 419, Modern Rhetorical Theory .....	3
ENGL 447, Rhetorical Invention .....	3
ENGL 448, Research in Written Composition.....	3
ENGL 449, Advanced Study in Writing.....	3
ENGL 451, Practicum in the Grammar of American English.....	3
ENGL 452, History of the English Language.....	3
ENGL 466, Writing Arguments .....	3
ENGL 470, Approaches to Composition.....	3
ENGL 473, Writing Assessment and Evaluation .....	3

E. Six credits from the following courses in Professional Communication:

ENGL 318, Advanced Technical and Professional Communication .....	3
ENGL 412, Writing in the Workplace .....	3
ENGL 431, Technical Editing.....	3
ENGL 449, Advanced Study in Writing.....	3
ENGL 460, Proposal Writing.....	3
ENGL 462, Interdisciplinary, Client-Based Project Practicum.....	3
ENGL 497, Internship .....	3

F. Six credits from the following courses in Digital Rhetoric and Design:

ENGL 315, Writing for the Web .....	3
ENGL 326, Cultural Identity and Representation Across the Media .....	3
ENGL 427, Advanced Study in Film and Digital Media (advisor approval required).....	3
ENGL 436, Advanced Study in Film and Digital Media: History and Culture (advisor approval required) .....	3
ENGL 437, Advanced Study in Film and Digital Media: Theory and Criticism (advisor approval required) .....	3
ENGL 449, Advanced Study in Writing.....	3
ENGL 478, Document Design .....	3
ENGL 479, Computers and Writing.....	3

G. Six credits of 300-400 level advisor-approved English courses relevant to program of study.

#### MINOR: English

Students not earning a bachelor's degree in English are eligible to pursue a minor in English. Students must earn 18 credits from the approved course lists below. Students may request approval for other courses clearly related to the minor from the undergraduate advisor in the Department of English.

A. Six credits from the following courses:

ENGL 220G, Introduction to Creative Writing.....	3
ENGL 243, The Bible as Literature.....	3
ENGL 251, Survey of American Literature I.....	3
ENGL 252, Survey of American Literature II.....	3
ENGL 261, Masterpieces of Western European Literature, Beginnings to the Renaissance.....	3
ENGL 262, Masterpieces of Western European Literature, Post-Renaissance to Modern.....	3
ENGL 263, History of Argument.....	3
ENGL 271, Survey of English Literature I.....	3
ENGL 272, Survey of English Literature II.....	3

\*Students may make 1 or 2 of the following substitutions: HON 229G for ENGL 243; HON 220G, 231G, 234G, or 239G for ENGL 271; HON 220G, 234G, or 239G for ENGL 261; HON 231G for ENGL 272

B. Three credits from the following courses:

ENGL 301, Theory and Criticism: Rhetoric and Culture.....	3
ENGL 302, Theory and Criticism: Literature and Culture.....	3
ENGL 303, Theory and Criticism: Film, Media and Culture.....	3
ENGL 310, Critical Writing.....	3
ENGL 311G, Advanced Composition.....	3

C. Six credits from English courses numbered 300-499.

D. Three additional credits from English courses numbered 400-499.

### MINOR: Creative Writing

Students not earning a bachelor's degree in English are eligible to pursue a minor in Creative Writing. Students must earn 18 credits from the approved course lists below. At least 12 credits must be upper division. Students may request approval for other courses clearly related to the minor from the undergraduate advisor in the Department of English. Students earning a B.A. in English must earn at least 6 credits approved by the Department of English undergraduate advisor beyond those earned for the major in order to earn a minor in Creative Writing. Students who major in English with an emphasis in Creative Writing may not earn a minor in Creative Writing.

A. Six credits from the following courses:\*

ENGL 220G, Introduction to Creative Writing.....	3
ENGL 243, The Bible as Literature.....	3
ENGL 251, Survey of American Literature I.....	3
ENGL 252, Survey of American Literature II.....	3
ENGL 261, Masterpieces of Western European Literature, Beginnings to the Renaissance.....	3
ENGL 262, Masterpieces of Western European Literature, Post-Renaissance to Modern.....	3
ENGL 263, History of Argument.....	3
ENGL 271, Survey of English Literature I.....	3
ENGL 272, Survey of English Literature II.....	3

\*Students may make 1 or 2 of the following substitutions: HON 229G for ENGL 243; HON 220G, 231G, 234G, or 239G for ENGL 271; HON 220G, 234G, or 239G for ENGL 261; HON 231G for ENGL 272.

B. Six credits from ENGL 304, Creative Writing: Prose; ENGL 306, Creative Writing: Poetry; ENGL 307, Creative Writing: Creating Nonfiction; ENGL 308, Creative Writing: Playwriting; ENGL 309, Screenwriting I; ENGL 413, Advanced Creative Writing in Prose Workshop; ENGL 414, Advanced Creative Writing in Poetry Workshop; ENGL 415, Advanced Creative Writing in Playwriting Workshop, and ENGL 480, Screenwriting II. All Creative Writing workshops may be taken more than once.

C. Three credits from ENGL 413, Advanced Creative Writing in Prose Workshop; ENGL 414, Advanced Creative Writing in Poetry Workshop; ENGL 415, Advanced Creative Writing in Playwriting Workshop, and ENGL 480, Screenwriting II. All Creative Writing workshops may be taken more than once.

D. Three additional credits from English literature courses numbered 300 and above.

### MINOR: Literature

Students not earning a bachelor's degree in English are eligible to pursue a minor in Literature. Students must earn 18 credits from the approved course lists below. At least 12 credits must be upper division. Students may request approval for other courses clearly related to the minor from the undergraduate advisor in the Department of English. Students earning a B.A. in English must earn at least 6 credits approved by the Department of English undergraduate advisor beyond those earned for the major in order to earn a minor in Literature. Students who

major in English with an emphasis in Literature, Language, and Culture may not earn a minor in Literature.

**A. Six credits from the following courses:\***

ENGL 243, The Bible as Literature.....	3
ENGL 251, Survey of American Literature I.....	3
ENGL 252, Survey of American Literature II.....	3
ENGL 261, Masterpieces of Western European Literature, Beginnings to the Renaissance.....	3
ENGL 262, Masterpieces of Western European Literature, Post-Renaissance to Modern.....	3
ENGL 263, History of Argument.....	3
ENGL 271, Survey of English Literature I.....	3
ENGL 272, Survey of English Literature II.....	3

\*Students may make 1 or 2 of the following substitutions: HON 229G for ENGL 243; HON 220G, 231G, 234G, or 239G for ENGL 271; HON 220G, 234G, or 239G for ENGL 261; HON 231G for ENGL 272.

**B. Three credits from the following courses:**

ENGL 301, Theory and Criticism: Rhetoric and Culture.....	3
ENGL 302, Theory and Criticism: Literature and Culture.....	3
ENGL 303, Theory and Criticism: Film, Media and Culture.....	3
ENGL 310, Critical Writing.....	3

**Note: ENGL 302 is recommended**

**C. Three credits from the following courses:\***

ENGL 321V, Modern European Drama.....	3
ENGL 323, American Drama.....	3
ENGL 325V, Contemporary International Literature.....	3
ENGL 326, Cultural Identity and Representations Across the Media.....	3
ENGL 327V, Shakespeare Around the Globe.....	3
ENGL 328V, Literature of Science Fiction and Fantasy.....	3
ENGL 329, Studies in Drama.....	3
ENGL 330, Studies in Poetry.....	3
ENGL 335V, Studies in Novel.....	3
ENGL 336, Studies in Film.....	3
ENGL 339V, Chicano Literature.....	3
ENGL 340, Studies in American Literature.....	3
ENGL 341V, American Indian Literature.....	3
ENGL 342, Studies in British Literature.....	3
ENGL 349, The Short Story.....	3
ENGL 351, Folklore.....	3
ENGL 361, Southwest Folklore.....	3
ENGL 363, Literature for Children and Young Adults.....	3
ENGL 380V, Women Writers.....	3
ENGL 390V, The Arthurian Tradition.....	3
ENGL 392V, Mythology.....	3
ENGL 394V, Southwestern Literature.....	3
ENGL 399, Special Topics (with advisor approval).....	3

\*Note: Substitutions allowed: HON 325V, 345V, 348V, 365V, 366V, 369V, 376V, and 382V.

**D. Six credits from the following courses:**

ENGL 405, Chaucer.....	3
ENGL 406, Early Modern Poetry and Prose.....	3
ENGL 407, Milton.....	3
ENGL 408, Shakespeare I.....	3
ENGL 409, Shakespeare II.....	3
ENGL 417, Advanced Study in Critical Theory.....	3
ENGL 421, Advanced Study in a Literary Period or Movement.....	3
ENGL 422, Advanced Study in Literary Form or Genre.....	3
ENGL 423, Advanced Study in Major Author.....	3
ENGL 424, Advanced Study in a Major Text.....	3
ENGL 425, Advanced Study in Comparative Literature.....	3
ENGL 426, Special Topics in Critical Theory.....	3
ENGL 427, Advanced Study in Film and Digital Media.....	3
ENGL 428, Drama from the Renaissance to the Restoration.....	3
ENGL 429, British Romanticism.....	3
ENGL 432, Gothic Literature.....	3
ENGL 433, Victorian Literature.....	3
ENGL 436, Advanced Study in Film and Digital Media: History and Culture.....	3
ENGL 437, Advanced Study in Film and Digital Media: Theory and Criticism.....	3
ENGL 438, Literature of the American Renaissance.....	3
ENGL 439, American Realism and Naturalism.....	3

ENGL 440, Harlem Renaissance and Modernism.....	3
ENGL 441, Modern and Contemporary American Fiction.....	3
ENGL 442, Modern and Contemporary American Poetry.....	3
ENGL 444, Modern British Fiction.....	3
ENGL 445, Postmodern Fiction.....	3
ENGL 451, Practicum in the Grammar of American English.....	3
ENGL 452, History of the English Literature.....	3
ENGL 453, World Literatures.....	3
ENGL 454, Postcolonial Literature.....	3
ENGL 456, Ethnic Studies in US Literature and Culture.....	3
ENGL 457, American Indian Literature.....	3
ENGL 458, Latino/a Literature and Culture.....	3
ENGL 459, Black Literature and Culture in the United States.....	3
ENGL 463, Advanced Study in English Literature.....	3
ENGL 469, Advanced Study in American Literature.....	3
ENGL 481, Women's Literature.....	3
ENGL 482, Gender and Popular Culture.....	3
ENGL 483, Gender and Language.....	3
ENGL 484, Gender and Literature.....	3
ENGL 486, Hollywood and Film.....	3
ENGL 487, Modernist and Experimental Film.....	3
ENGL 488, Film and Literature.....	3
ENGL 489, Cultural Studies: Literature and Theory.....	3
ENGL 492, Old English.....	3
ENGL 493, Middle English Textual Cultures.....	3
ENGL 494, Shakespeare for Educators.....	3

#### MINOR: Rhetoric and Professional Communication

Students not earning a bachelor's degree in English are eligible to pursue a minor in Rhetoric and Professional Communication. Students must earn 18 credits from the approved course lists below. Students may request approval for other courses clearly related to the minor from the undergraduate advisor in the Department of English. Students earning a B.A. in English must earn at least 6 credits approved by the Department of English undergraduate advisor beyond those earned for the major in order to earn a minor in Rhetoric and Professional Communication. Students who major in English with an emphasis in Rhetoric, Digital Media and Professional Communication may not earn a minor in Rhetoric and Professional Communication.

##### A. Three credits from the following courses:

ENGL 220G, Introduction to Creative Writing.....	3
ENGL 243, The Bible as Literature.....	3
ENGL 251, Survey of American Literature I.....	3
ENGL 252, Survey of American Literature II.....	3
ENGL 261, Masterpieces of Western European Literature, Beginnings to the Renaissance.....	3
ENGL 262, Masterpieces of Western European Literature, Post-Renaissance to Modern.....	3
ENGL 263, History of Argument.....	3
ENGL 271, Survey of English Literature I.....	3
ENGL 272, English Literature II.....	3

\*Students may make 1 or 2 of the following substitutions: HON 229G for ENGL 243; HON 220G, 231G, 234G, or 239G for ENGL 271; HON 220G, 234G, or 239G for ENGL 261; HON 231G for ENGL 272.

##### B. Three credits from the following courses:

ENGL 203G, Business and Professional Communication.....	3
ENGL 211G, Writing in the Humanities and Social Sciences.....	3
ENGL 218G, Technical and Scientific Communication.....	3
ENGL 311G, Advanced Composition.....	3
ENGL 318G, Advanced Technical and Professional Communication.....	3

##### C. Twelve additional credits from:

ENGL 301, Theory and Criticism: Rhetoric and Culture; ENGL 315, Writing for the Web; ENGL 318G, Advanced Technical and Professional Communication; ENGL 319, Introduction to Scientific Research and Writing; ENGL 326, Cultural Identity and Representation Across the Media; ENGL 412, Writing in the Workplace; ENGL 418; History of Rhetoric; ENGL 431, Technical Editing; ENGL 436, Advanced Study in Film and Digital Media History and Culture; ENGL 437, Advanced Study in Film and Digital Media Theory and Criticism; ENGL 447, Rhetorical Invention; ENGL 448, Advanced Study in Empirical Research; ENGL 449, Advanced Study in Writing; ENGL 451, Practicum in the Grammar of American English; ENGL 452,

History of the English Language; ENGL 460, Proposal Writing; ENGL 462, Interdisciplinary, Client- Based Project Practicum; ENGL 466, Writing Arguments; ENGL 470, Approaches to Composition; ENGL 473, Writing Assessment and Evaluation; ENGL 478, Document Design; ENGL 479, Computers and Writing; ENGL 497, Internship.

#### MINOR: Medieval and Early Modern Studies

Students must earn 18 credits from the approved course lists below. At least 9 credits must be upper division. No more than 9 credits may be taken under faculty in any department. Students may request approval for other courses clearly related to Medieval and/or Early Modern Studies from the undergraduate advisor in the Department of English in consultation with faculty in medieval and early modern studies. Courses marked by asterisks(\*) are approved for the minor only when their topics are appropriate. Students must seek approval to count these courses for the minor from the undergraduate advisor in the Department of English.

ART 295G, Introduction to Art History I; ART 315, Introduction to Art History II; \*ART 300, Special Topics in Art History; ART 328, Baroque Art and Architecture in Northern Europe; ART 333, Baroque Art and Architecture in Spain, Italy, and Spanish Latin America; \*ART 477, Independent Research Problems in Art History; \*ART 478, Seminar: Selected Topics in Art History; ENGL 242, Introduction to Shakespeare; ENGL 243, The Bible as Literature; ENGL 261, Masterpieces of Western European Literature, Beginnings to the Renaissance; ENGL 271, Survey of English Literature I; \*ENGL 380, Women Writers; ENGL 390V, The Arthurian Tradition; ENGL 392V, Mythology; ENGL 405, Chaucer; ENGL 406, Early Modern Poetry and Prose; ENGL 407, Milton; ENGL/THTR 408, Shakespeare I; ENGL/THTR 409, Shakespeare II; \*ENGL 421, Advanced Study in a Literary Period or Movement; \*ENGL 422, Advanced Study in a Literary Form or Genre; \*ENGL 423, Advanced Study in a Major Author; \*ENGL 424, Advanced Study in a Major Text; \*ENGL 425, Advanced Study in Comparative Literature; ENGL 428, Drama from the Renaissance to the Restoration; ENGL 452, History of the English Language; ENGL 463, Advanced Study in English Literature I; \*ENGL 481/W S 484, Women's Literature; \*ENGL 484, Gender and Literature; ENGL 492, Old English; ENGL 493, Middle English Textual Cultures; ENGL 494, Shakespeare for Educators; FREN 381, Survey of French Literature I; \*FREN 451, Special Topics in French; GER 391, History of the German Language; GER 431, German Lyric Poetry; HIST 101G, Roots of Modern Europe; HIST 211G, East Asia to 1600; HIST 221G, Islamic Civilization to 1800; HIST 311V, Colonial Latin America; HIST 323, Cultural History of Later Imperial China; HIST 372, The Roman World; HIST 375, Europe and the New World; HIST 381V, Early Russia; HIST 383, Germany; HIST 387, Spain; HIST 388, Women in Europe I; HIST 392, Virgin Queen: Elizabeth of England; HIST 392, Stuart England: Century of Revolutions; \*HIST 400, Special Topics; HIST 433, United States Labor History Since 1877; HIST 434, Age of Absolutism and the Baroque; HIST 442/542, Art and Life in Renaissance Italy; HIST 471, China through the Ming Dynasty; HON 220G, The World of the Renaissance: Discovering the Modern; HON 222G, Foundations of Western Culture; HON 224G, God and Nature; HON 229G, The New Testament as Literature; HON 234G, The Worlds of Arthur; HON 239G, Medieval Understandings: Literature and Culture in the Middle Ages; HON 326V, Art and Mythology; HON 355V, Sexuality in Christianity and Islam; \*HON 400, Thesis; MUS 302, History and Literature of Music to 1750; MUS 420, Music of the Middle Ages and Renaissance; MUS 421, Music of the Baroque Era; PHIL 342, Medieval Philosophy; PHIL 344, Modern Philosophy; \*PHIL 363/463, Directed Readings; \*SPAN 306, Special Topics; SPAN 386, Survey of Spanish Peninsular Literature through the Seventeenth Century; THTR 312, Acting Shakespeare; \*W S 250, Special Topics..... 18

## GEOGRAPHY

#### Dr. Christopher Brown, department head

**Professors** DeMers, Wright; **Professor Emeritus** Czerniak; **Associate Professors** Brown, Campbell; **Assistant Professors** Buenemann, Dugas; **Adjunct Faculty** Rango, Stein, Whitford; **College Instructor** Huck  
(575) 646-3509

<http://www.nmsu.edu/~geoweb/>

**DEGREE: Bachelor of Science**

**MAJOR: Geography**

**CONCENTRATION: Geographic Information Systems and**



**Technology (GIS&T)****CONCENTRATION: Human/ Environment Relationships (HER)****MINORS: Geography  
Geographic Information Systems**

The Geography Program emphasizes the interaction of humans with the environment, and the program prepares students for professional positions in the public and private sectors, as well as for graduate work. The Department offers two concentrations for the major: the Geographic Information Science and Technology (GIS&T) Concentration emphasizes the acquisition of knowledge and skills in geographic information systems and remote sensing tools and concepts; the Human- Environment Relationships (HER) Concentration focuses on the analysis and interpretation of the coupled and complex interactions between people and the environment. As detailed below, the Department also offers minors in Geography and GIS&T.

The requirements for teaching fields in earth sciences are listed under the Department of Curriculum and Instruction in the College of Education chapter.

**Note: A grade of "C-" or better is required for all courses taken for the major. Students may not take any of these courses S/U.**

**MAJOR: Geography  
CONCENTRATION: Geographic Information Systems and Technology (GIS&T)**

The Geographic Information Science and Technology (GIS&T) Concentration offers a solid foundation in geographic thought and human and physical geography, and provides students with advanced knowledge and skills in spatial analysis and modeling through the use of geographic information systems and remote sensing tools and concepts. Preparation for advanced studies is also provided.

**Departmental Requirements (45 or 46 credits)**

GEOG 111G, Geography of the Natural Environment .....	4
GEOG 112G, World Regional Geography, <b>OR</b> GEOG 120G, Culture and Environment .....	3
GEOG 281, Map Use and Analysis .....	3
GEOG 373, Introduction to Remote Sensing .....	3
GEOG 381, Cartography and Geographic Information Systems.....	4
GEOG 382, Aerial Photo Interpretation .....	3
GEOG 481, Fundamentals of Geographic Information Systems.....	4
GEOG 482, Geodatabase Design.....	3

**TWO** of the following courses:

GEOG 441, GIS Design.....	3
GEOG 473, Advanced Remote Sensing .....	4
GEOG 487, Geographic Information Systems Capstone .....	3
GEOG 492, GIS Applications and Modeling.....	3

**THREE** of the following course, including either one physical geography (PG) class and two human geography (HG) classes, **OR** two physical geography (PG) classes and one human geography (HG) class:

GEOG 351, Fundamentals of Biogeography (PG) .....	3
GEOG 353, Geomorphology (PG) .....	3
GEOG 357, Climatology (PG).....	3
GEOG 452, Landscape Ecology (PG).....	3
GEOG 361V, Economic Geography (HG).....	3
GEOG 363V, Cultural Geography (HG) .....	3
GEOG 365V, Urban Geography (HG) .....	3
GEOG 467, Transportation Geography (HG) .....	3

**ONE** of the following Regional Geography courses:

GEOG 325V, New Mexico and the American West.....	3
GEOG 326, U.S. National Parks .....	3
GEOG 328V, Geography of Latin America .....	3
GEOG 331V, Europe.....	3
GEOG 483, Field Explorations in Geography .....	3

**Nondepartmental Requirements (9 credits)**

A ST 311, Statistical Applications <b>OR</b> STAT 251G/A ST 251G, Statistics for the Behavioral Sciences.....	3
ENGL 218G, Technical and Scientific Communication <b>OR</b> ENGL 318G, Advanced Technical and Professional Communication.....	3

MATH 142G, Calculus for Biological and Management Sciences <b>OR</b> MATH 190G, Trigonometry and Precalculus.....	3
---	---

**Second Language Requirement**

- Option 1: Complete 112 (for non- native speakers; this course may require a 111 course as a prerequisite); or 113 (for heritage speakers)
- Option 2: Complete six additional upper division credits in Geography beyond the major requirements.

**Electives:** Total classes taken must be sufficient to total 128 credits, including 48 upper-division credits.

**MAJOR: Geography  
CONCENTRATION: Human/ Environment Relationships (HER)**

The Human Environment Relationships Concentration offers a solid foundation in geographic thought and geospatial analysis and provides students with advanced knowledge and skills for assessing human and environmental systems and the coupled and complex interactions between people and the environment. Preparation for advanced graduate studies is also provided.

**Departmental Requirements (41 credits)**

GEOG 111G, Geography of the Natural Environment .....	4
GEOG 112G, World Regional Geography.....	3
GEOG 120G, Culture and Environment.....	3
GEOG 281, Map Use and Analysis .....	3
GEOG 381, Cartography and Geographic Information Systems.....	4
GEOG 382, Aerial Photo Interpretation .....	3
GEOG 455, Southwest Environments .....	3

**TWO** of the following human geography courses:

GEOG 361V, Economic Geography .....	3
GEOG 363V, Cultural Geography .....	3
GEOG 365V, Urban Geography .....	3
GEOG 467, Transportation Geography.....	3

**TWO** of the following physical geography courses:

GEOG 351, Biogeography .....	3
GEOG 353, Geomorphology.....	3
GEOG 357, Climatology.....	3
GEOG 452, Landscape Ecology.....	3

**TWO** of the following Regional Geography courses:

GEOG 325V, New Mexico and the American West.....	3
GEOG 326, U.S. National Parks .....	3
GEOG 328V, Geography of Latin America .....	3
GEOG 331V, Europe.....	3
GEOG 483, Field Explorations in Geography .....	3

**Non-Departmental Requirements (9 credits)**

ENGL 218G, Technical and Scientific Communication, <b>OR</b> ENGL 318G, Advanced Technical and Scientific Communication.....	3
A ST 311, Statistical Applications, <b>OR</b> STAT 251G/ A ST 251G, Statistics for the Behavioral Sciences.....	3
MATH 121G, College Algebra .....	3

**Second Language Requirement**

- Option 1: Complete 112 (for non- native speakers; this course may require 111 as a prerequisite); **OR** 113 (for heritage speakers)
- Option 2: Complete six additional upper division credits in Geography beyond the major requirements.

**Electives:** Total classes taken must be sufficient to total 128 credits, including 48 upper-division credits.

**MINOR: Geography**

The Department of Geography offers a minor in Geography to interested undergraduate students from the departments outside of Geography. To earn a minor in Geography, the following courses are required. **Note: A grade of "C-" or better is required for all courses taken for the minor. Students may not any of these courses S/U.**

**Departmental Requirements (19 credits)**

GEOG 111G, Geography of the Natural Environment.....	4
GEOG 112G, World Regional Geography, <b>OR</b> GEOG 120G, Culture and Environment.....	3



GEOG 281, Map Use and Analysis **OR** GEOG 381, Cartography and Geographic Information Systems **OR** GEOG 382, Aerial Photo Interpretation.....3

**THREE** of the following course, including either one physical geography (PG) class and two human geography (HG) classes, **OR** two physical geography (PG) classes and one human geography (HG) class:

GEOG 351, Fundamentals of Biogeography (PG) .....3

GEOG 353, Geomorphology (PG) .....3

GEOG 357, Climatology (PG).....3

GEOG 452, Landscape Ecology (PG).....3

GEOG 361V, Economic Geography (HG).....3

GEOG 363V, Cultural Geography (HG).....3

GEOG 365V, Urban Geography (HG).....3

GEOG 467, Transportation Geography (HG) .....3

**MINOR: Geographic Information Systems**

The Department of Geography offers a minor in Geographic Information Science and Technology (GIS&T); this option applies for **non-geography majors only**. To earn a minor in GIS&T, the following courses are required. Note: A grade of "C-" or better is required for all courses taken for the minor. Students may not take any of these courses S/U.

**Departmental Requirements (20 or 21 credits)**

GEOG 373, Introduction to Remote Sensing.....3

GEOG 381, Cartography and Geographic Information Systems.....4

GEOG 481, Fundamentals of Geographic Information Systems.....4

GEOG 482, Geodatabase Design.....3

**TWO** of the following courses:

GEOG 441, GIS Design.....3

GEOG 473, Advanced Remote Sensing .....4

GEOG 487, GIS Capstone.....3

GEOG 492, GIS Applications and Modeling .....3

**GEOLOGICAL SCIENCES****Professor Nancy J. McMillan, department head**

**Professors** Amato, Lawton, McMillan; **Assistant Professor** Ramos; **Adjunct Professors** Hawley, Powers, Witcher  
(575) 646-2708  
<http://www.nmsu.edu/~geology/>

**DEGREE: Bachelor of Science****MAJOR: Geology****OPTION: Geological Sciences****OPTION: Earth and Environmental Systems****OPTION: Earth Science Education****MINOR: GEOLOGY**

Students earning the BS Geology, any option, may also earn the Undergraduate Research Certificate in the Department of Geological Sciences. Completion of the Undergraduate Research Certificate includes completion of an undergraduate research project, participation in the department's undergraduate research meetings, and one of the following: 1) a senior thesis; 2) a manuscript submitted for a publication; or 3) an oral or poster presentation at a national or regional meeting. Undergraduate Research Certificates are presented at the department's annual awards ceremony.

The Department of Geological Sciences also cooperates with the Department of Physics in offering a B.S. degree in physics with an emphasis in geophysics. Requirements are listed in the Department of Physics section of this catalog.

**MAJOR: Geology****OPTION: Geological Sciences**

The option in geological sciences is a broad field of study that prepares students for employment by energy and mineral industries, environmental and water resource companies, federal, state, and local governments, and service

companies that utilize earth resources. Qualified students are also prepared for graduate study in the geological sciences.

**Nondepartmental Requirements (33 credits)**

(May not be taken S/U and a grade of C or better must be earned.)

CHEM 111, General Chemistry I, or CHEM 115 (preferred), Principles of Chemistry I.....4

CHEM 112, General Chemistry II, or CHEM 116 (preferred), Principles of Chemistry II.....4

MATH 191-192, Calculus and Analytic Geometry I, II.....6

PHYS 211, General Physics I, or PHYS 215, Engineering Physics I.....3

PHYS 212, General Physics II, or PHYS 216, Engineering Physics II.....3

PHYS 211L, General Physics Laboratory I, or PHYS 215L, Engineering Physics Laboratory I.....1

PHYS 212L, General Physics Laboratory II, or PHYS 216L, Engineering Physics Laboratory II.....1

One of: C S 167, C Programming, C S 187, Java Programming, C E 151, Introduction to Civil Engineering, G EN 151, Introduction to Geologic Engineering, E E 161, Computer Aided Problem Solving, GEOG 381, Cartography and Geographic Information Systems, STAT 271G, Statistics for Psychological Sciences, STAT 371 Statistics for Engineers and Scientists I.....3

Two semesters of a foreign language (111, 112) or high school equivalent (2 years).....8

**Departmental Requirements (36 credits)**

(May not be taken S/U and a grade of C or better must be earned.)

GEOL 111G, Survey of Geology OR HON 219G, Earth, Time, and Life.....4

GEOL 305V, Fossils and the Evolution of Life.....3

GEOL 310, Mineralogy.....3

GEOL 312, Optical Mineralogy.....3

GEOL 360, General Geochemistry.....3

GEOL 399, Igneous and Metamorphic Petrology.....3

GEOL 420, Stratigraphy and Sedimentology.....3

GEOL 449, The Geological Profession.....1

GEOL 470, Structural Geology.....3

GEOL 490, Field Geology.....3

GEOL 491, Tectonic Evolution of North America.....3

GEOL 495, Geology Field Camp.....4

**Elective Requirements (12 credits)**

Students must obtain a C or better in any four of the following courses:

C E 357, Soil Mechanics.....3

GEOL 216, Geology of the Colorado Plateau.....3

GEOL 295, Environmental Geology.....3

GEOL 335V, Earthquakes, Volcanoes, Hurricanes, and Floods.....3

GEOL 353, Geomorphology.....3

GEOL 424, Soil Chemistry, or GEOL 479, Environmental Soil Chemistry.....3

GEOL 452, Geohydrology.....3

GEOL 454, Advanced Stratigraphic Concepts.....3

GEOL 465, Introduction to Isotope Geology.....3

GEOL 474, Ground Water Geology.....3

GEOL 475, Geology of Mineral Resources.....3

GEOL 476, Marine Paleogeology.....3

GEOL 478, Petroleum Geology.....3

GEOL 480, Seminar (with subtitle).....3

GPHY 330, Introduction to Geophysics.....3

GPHY 451, Principles of Geophysics I.....3

GPHY 452, Principles of Geophysics II.....3

SOIL 252, Soils.....3

Other electives, including those selected to satisfy the college and university requirements, must bring the total credits to 128, of which 48 must be upper-division (300 or above).

Students must work closely with their advisors in order to plan programs that allow them to meet all requirements and earn sufficient upper-division credit.

**MAJOR: Geology****OPTION: Earth and Environmental Systems**

The option in geological sciences provides students with scientific insight as a foundation for careers in environmental earth science, environmental policy, and resource management. Qualified students are also prepared for graduate study in these areas. This option does not prepare students for gradu-

ate study in the geological sciences; these students should follow the curriculum in the Geological Sciences Option.

#### Nondepartmental Requirements (41 credits)

(May not be taken S/U and a grade of C or better must be earned.)

A ST 311, Statistical Applications .....	3
AG E 337V, Natural Resource Economics, or AG E 2884V, Water Resources Economics .....	3
BIOL 111G, Natural History of Life.....	4
CHEM 111G, General Chemistry I.....	4
ECON 252G, Principles of Microeconomics.....	3
GEOG 120G, Culture and Environment.....	3
GEOG 381, Cartography and Geographic Information Systems.....	3
PHYS 211, General Physics I.....	3
PHYS 211L, General Physics Laboratory I.....	1
Two of: GOVT 324, Environmental Policy, GOVT 340, American State and Local Govt, or GOVT 343, Congress and the Legislative Process .....	6
Two semesters of a foreign language (111, 112) or high school equivalent (2 years).....	8

#### Departmental Requirements (29 credits)

(May not be taken S/U and a grade of C or better must be earned.)

GEOL 111G, Survey of Geology OR HON 219G, Earth, Time, and Life.....	4
GEOL 305V, Fossils and the Evolution of Life .....	3
GEOL 310, Mineralogy.....	3
GEOL 335V, Earthquakes, Volcanoes, Hurricanes, and Floods.....	3
GEOL 360, General Geochemistry.....	3
GEOL 399, Igneous and Metamorphic Petrology.....	3
GEOL 420, Stratigraphy and Sedimentology.....	3
GEOL 449, The Geological Profession.....	1
GEOL 470, Structural Geology.....	3
GEOL 491, Tectonic Evolution of North America.....	3

#### Elective Requirements (9 credits)

Students must obtain a C or better in any three of the following courses:

C E 357, Soil Mechanics.....	3
GEOL 216, Geology of the Colorado Plateau.....	3
GEOL 295, Environmental Geology.....	3
GEOL 312, Optical Mineralogy.....	3
GEOL 353, Geomorphology.....	3
GEOL 424, Soil Chemistry, or GEOL 479, Environmental Soil Chemistry.....	3
GEOL 452, Geohydrology.....	3
GEOL 454, Advanced Stratigraphic Concepts.....	3
GEOL 465, Introduction to Isotope Geology.....	3
GEOL 474, Ground Water Geology.....	3
GEOL 475, Geology of Mineral Resources.....	3
GEOL 476, Marine Paleoecology.....	3
GEOL 478, Petroleum Geology.....	3
GEOL 480, Seminar (with subtitle).....	3
GEOL 490, Field Geology.....	3
GEOL 495, Geology Field Camp.....	4
GPHY 330, Introduction to Geophysics.....	3
GPHY 451, Principles of Geophysics I.....	3
GPHY 452, Principles of Geophysics II.....	3
SOIL 252, Soils.....	3

Other electives, including those selected to satisfy the college and university requirements, must bring the total credits to 128, of which 48 must be upper-division (300 or above).

Students must work closely with their advisors in order to plan programs that allow them to meet all requirements and earn sufficient upper-division credit.

#### MAJOR: Geology

##### OPTION: Earth Science Education

The option in earth science education is a collaboration between the Department of Geological Sciences and the Department of Curriculum and Instruction in the College of Education. In this option, students earn a Secondary Licensure as well as a B.S. in Geology, and become qualified to teach the Broad Sciences at the middle and high school levels. Students take one year of graduate classes in the College of Education to complete the Secondary Licensure.

#### Nondepartmental Requirements (51 credits)

(May not be taken S/U and a grade of C or better must be earned.)

ASTR 105G, The Planets, OR ASTR 110G, Introduction to Astronomy.....	3
BIOL 111G, Natural History of Life.....	3
BIOL 111GL, Natural History of Life Laboratory.....	1
BIOL 313, Structure and Function of Plants, OR BIOL 322, Zoology.....	3
C EP 110G, Human Growth and Behavior.....	3
C EP 201, Educational Psychology.....	3
CHEM 111, General Chemistry I, or CHEM 115 (preferred), Principles of Chemistry I.....	4
CHEM 112, General Chemistry II, or CHEM 116 (preferred), Principles of Chemistry II.....	4
EDLT 368, Educational Technology.....	3
EDUC 315, Multicultural Education.....	3
EDUC 381, Field Experience.....	2
PHYS 211, General Physics I, or PHYS 215, Engineering Physics I.....	3
PHYS 212, General Physics II, or PHYS 216, Engineering Physics II.....	3
PHYS 211L, General Physics Laboratory I, or PHYS 215L, Engineering Physics Laboratory I.....	1
PHYS 212L, General Physics Laboratory II, or PHYS 216L, Engineering Physics Laboratory II.....	1
SPED 350, Introduction to Special Education in a Diverse Society.....	3
Two semesters of a foreign language (111, 112) or high school equivalent (2 years).....	8

#### Departmental Requirements (29 credits)

(May not be taken S/U and a grade of C or better must be earned.)

GEOL 111G, Survey of Geology OR HON 219G, Earth, Time, and Life.....	4
GEOL 305V, Fossils and the Evolution of Life .....	3
GEOL 310, Mineralogy.....	3
GEOL 335V, Earthquakes, Volcanoes, Hurricanes, and Floods.....	3
GEOL 360, General Geochemistry.....	3
GEOL 399, Igneous and Metamorphic Petrology.....	3
GEOL 420, Stratigraphy and Sedimentology.....	3
GEOL 449, The Geological Profession.....	1
GEOL 470, Structural Geology.....	3
GEOL 491, Tectonic Evolution of North America.....	3

Other electives, including those selected to satisfy the college and university requirements, must bring the total credits to 128, of which 48 must be upper-division (300 or above).

Students must work closely with their advisors in order to plan programs that allow them to meet all requirements and earn sufficient upper-division credit.

After completing the B.S. in Geology, Option Earth Science Education, students should apply and be admitted to the Graduate School in the Department of Curriculum and Instruction, and be admitted to the Teacher Education Program (TEP). For additional details, see the Curriculum and Instruction portion of the NMSU Graduate Catalog.

To earn the Secondary Teaching Licensure, students must complete these courses and pass the NMTA Basic Skills, NMTA General Knowledge, and NMTA Content Knowledge Licensure Exams:(21 credits)

EDUC 505, Classroom Management.....	3
EDUC 509, Teaching Methods Lab.....	3
EDUC 510, Internship/Student Teaching.....	6
EDUC 563, Teaching Science at the Middle School and High School Level.....	3
RDG 514, Content Area Literacy.....	3
SPED 480, Secondary Curriculum, Methods, and Materials for Special Education in a Diverse Society.....	3

#### MINOR: Geology

A student cannot earn a B.S. in Geology and also earn a minor in Geology.

GEOL 111G, Survey of Geology, or HON 219G, Earth, Life and Time.....	4
GEOL 305V, Fossils and the Evolution of Life .....	3

Eleven credits from among the following courses (courses with Geology prerequisites other than GEOL 111G or HON 219G are asterisked): GEOL 295, Environmental Geology; GEOL 310, Mineralogy; \*GEOL 312, Optical Mineralogy; GEOL 335G, Earthquakes, Volcanoes, Hurricanes, and Floods; GEOL 353, Geomorphology; GEOL 360 General Geochemistry; \*GEOL 399, Igneous and Metamorphic Petrology; \*GEOL 420, Stratigraphy and Sedimentology; \*GEOL 465, Introduction to Isotope Geology; \*GEOL 470, Structural Geology; \*GEOL 475, Geology of Mineral Resources; \*GEOL 477, Special Problems (variable credit); \*GEOL 476, Marine Paleocology; \*GEOL 478, Petroleum Geology; \*GEOL 480, Seminar (variable credit); \*GEOL 490 Field Geology; \*GEOL 491, Tectonic Evolution of North America; and \*GEOL 495, Geology Field Camp. . . . . 11

## GOVERNMENT

### Professor Neil Harvey, department head

**Professors** Baker, Harvey, Lapid, Taggart; **Associate Professors** Ackleson, Butler, Garcia; **Assistant Professors** Medina, Scheller; **College Professor** Seckler; **Emeritus Professor** Winn  
(575) 646-4935; (575) 646-2052 (fax)  
<http://www.nmsu.edu/~govdept/>

**DEGREE: Bachelor of Arts**

**MAJOR: Government**

**SUPPLEMENTARY MAJOR: Law and Society**

**MINORS: Government**

**American Government and Politics**

**Comparative Politics**

**International Relations**

**Public Administration**

**Political Theory**

**Public Law**

**Contemporary Social Studies**

The study of government (political science) blends the strengths of a liberal arts education in public affairs with a preparation for careers in federal, state, and local government, in public administration and public service, in public policy analysis, in electoral politics and for general opportunities for college graduates.

The government major program calls for a thorough preparation in the study of government as described below with the opportunity for those interested in specific careers to concentrate in one of the subfields: American government and politics, public law, public administration and policy, comparative politics, political theory and international relations.

The department also offers a supplementary major in law and society, which is supportive of law-related careers.

A government minor program involving 18 credits of course work is also offered. A disciplinary field minor or a general minor may be selected. In addition, the department participates in an interdisciplinary minor in Contemporary Social Studies.

**DEGREE: Bachelor of Arts**

**MAJOR: Government**

### Departmental Requirements

GOVT 100G, American National Government (or HON 249G American Politics in a Changing World) ..... 3  
GOVT 101, Introductory Government Seminar ..... 1  
GOVT 110G, Introduction to Political Science (or HON 248G The Citizen and the State: Great Political Issues) ..... 3  
GOVT 300, Political Research Skills, or another social science research methods course (a list of approved options is available in the department office) ..... 3  
GOVT 415 Senior Seminar ..... 1

One upper-division course in four of the six subfields. Subfields are identified by the middle course numbers: public administration and policy (20/30 series), American government and politics (40/50 series), international relations (60 series, may include HON 304V), comparative politics (70 series, may include HON 307V), political theory (80 series, may include GOVT 380V), and public law (90 series). Additional credits in government to bring total credits in major to 33, including 20 upper-division.

Note: Majors should complete lower level requirements before registering for upper division government credits. Students may not count S/U grades taken in their major unless the particular course is regularly graded S/U. All courses must be passed with grades of C or better. In addition, while research methods courses taken outside of the department may count toward the methods requirement, only GOVT 300 counts toward the 33 credits in the major.

Up to twelve hours of internship credit are available. However, only three hours count toward the major. Internship guidelines are available in the department office and on the Government Department web page, <http://www.nmsu.edu/~govdept/>.

Students are required to fulfill a Second Language. Please refer to the Arts & Sciences College Degree Requirements for specifics.

### SUPPLEMENTARY MAJOR: Law and Society

The Department of Government also coordinates a supplementary major in law and society that may be taken in addition to a regular major. The program is designed to provide a multidisciplinary preprofessional education for undergraduates who plan to attend law school or who contemplate careers in fields closely related to the legal profession, such as government, social work and law enforcement.

### Departmental Requirements

The supplementary major consists of 24 credits chosen from the courses listed below. At least 18 credits must be earned in upper-division courses and 6 credits must be earned from listed courses outside the student's primary major. Candidates for the Law and Society degree must declare their supplementary major prior to completing the last 9 credits of the program.

### Core Courses (select three of the five options)

1. C J 205, Criminal Law I ..... 3  
2. GOVT 395, Law and Society ..... 3  
3. GOVT 391, Constitutional Law ..... 3  
4. GOVT 394, Judicial Process ..... 3  
5. One of the following three courses: C J 306, Criminal Procedural Law; GOVT 392, Civil Liberties; JOUR 493/HON 377V, Freedom of Speech and the Law (same as GOVT 493) ..... 3

### Communication Skills (select one)

COMM 351, Persuasion Theory and Practice ..... 3  
COMM 353, Advanced Public Speaking ..... 3  
ENGL 311G, Advanced Composition ..... 3  
PHIL 448, Writing Philosophy ..... 3

### Critical Thinking Skills (select one)

GOVT 382, Classical Political Thought ..... 3  
PHIL 211G, Informal Logic ..... 3  
PHIL 312, Formal Logic ..... 3

### Jurisprudence (select one)

C J 307, Law of Evidence ..... 3  
C J 424, Forensic Law ..... 3  
GOVT 385, American Political Thought ..... 3  
PHIL 376, Philosophy of Law ..... 3  
PSY 330, Psychology and the Law ..... 3  
SOC 391, Crime and Society ..... 3  
SOC 485, Sociology of Law ..... 3

### Legal Policy Issues (select two)

BLAW 316, Legal Environment of Business ..... 3  
BLAW 385V/HON 385V, Consumers and the Law ..... 3  
C J 250, Courts and the Criminal Justice System ..... 3  
C J 332, Correctional Law ..... 3  
C J/GOVT/HIST/JOUR/SOC 399, New Mexico Law ..... 3  
GOVT 345, The Supreme Court ..... 3  
GOVT 387, Religion and Politics ..... 3  
GOVT 390, Special Topics in Public Law ..... 3  
GOVT 396, International Law ..... 3  
GOVT 397, Law and Sex ..... 3  
HIST 407, American Social and Cultural History to 1900 ..... 3  
HL S 489, Ethics and Jurisprudence for Health Personnel ..... 3  
HON 335V, Legal Issues in Modern Society ..... 3  
HON 350V, Law, Culture, and Conflict ..... 3  
HON 352V, Crime, Justice, and Society ..... 3

HRTM 304, Hospitality and Travel Law.....	3
PHIL 100G, Philosophy, Law, and Ethics.....	3
PHIL 320, Social and Political Philosophy.....	3
PLAN 301, Legal Aspects of Planning.....	3
SOC 392, Juvenile Delinquency.....	3
SOC 475, Advanced Social Stratification.....	3

### MINORS

The Department of Government offers a general Government minor and specialized sub field minors. In addition, the department participates in a minor in Contemporary Social Studies with History and other departments.

A student can not earn both a B.A. in Government and a general minor in Government. Government majors may pursue a subfield minor in the department, however, they can not double count any upper division courses in Government.

#### GENERAL MINOR: Government

GOVT 100G, American National Government (or HON 249G American Politics in a Changing World) .....	3
GOVT 110G, Introduction to Political Science (or HON 248G The Citizen and the State: Great Political Issues) .....	3

Twelve additional credits, of which at least 9 are upper division, including 3 upper division courses from different subfields. The subfield series include courses in the 20/30 series (public administration and policy), 40/50 series (American government and politics), 60 series and HON 304V (international relations), 70 series and HON 307V (comparative politics), 80 series, including GOVT 380V (political theory), and 90 series (public law) .....

#### SUBFIELD MINORS: American Government and Politics

**Comparative Politics**  
**International Relations**  
**Political Theory**  
**Public Administration and Policy**  
**Public Law**

Students pursuing a subfield minor may count a maximum of 3 credits in an independent studies course or an internship. Students may request permission to substitute courses between subfields, subject to approval of the Department of Government undergraduate committee.

GOVT 100G, American National Government, (or HON 249G, American Politics in a Changing World) .....	3
GOVT 110G, Introduction to Political Science, (or HON 248G, The Citizen and the State: Great Political Issues) .....	3

Twelve additional credits, of which at least 9 are upper division, including 3 upper division courses from the same subfield. The subfield series include courses in the 20/30 series (public administration and policy), 40/50 series (American government and politics), 60 series and HON 304V (international relations), 70 series and HON 307V (comparative politics), 80 series, including GOVT 380V (political theory), and 90 series (public law)

#### MINOR: Contemporary Social Studies

This minor focuses on world issues since 1900. See requirements for this minor under Department of History.

## HISTORY

### Professor Jon Hunner, department head

**Professors** Bronstein, Eamon, K. Hammond, Malamud **Associate Professors** Brooks, Garcia-Bryce, Horodowich, Orzoff; **College Professors** Tollefson; Pitcaithley, Schneider- Hector; **College Assistant Professors** E. Hammond, Milliern (575) 646-4601

**DEGREE: Bachelor of Arts**

**MAJOR: History**

**MINORS: History**

**Contemporary Social Studies**

A knowledge of history prepares students for careers in teaching, law, public service, management, journalism, religious education, communications, travel counseling, and library, museum, and archival staff work.

**DEGREE: Bachelor of Arts**

**MAJOR: History**

The undergraduate history major consists of at least 42 credits in the major field, 24 credits of which must be numbered 300 or above. All courses must be passed with grades of C or higher, and none may be taken on an S/U basis. Electives must be carefully selected by the student and approved by a Department of History advisor so that the student's program is well tailored to individual goals. All majors must be advised prior to registration.

Among the upper-division courses that majors take, one or more (in addition to HIST 398) must require a research-based paper or papers. In fulfilling their research requirements, majors must write one research-based paper or papers which together total at least 20 pages.

#### Departmental Requirements

- Students must pass at least 18 credits from the list below, including courses from at least two complete pairs of these courses: HIST 101G-102G, HIST 111G-112G, HIST 201G-202G, HIST 211G-212G, HIST 221G-222, and HIST 311-312.
 

HIST 101G, Roots of Modern Europe.....	3
HIST 102G, Modern Europe .....	3
HIST 111G, Global History to 1500 .....	3
HIST 112G, Global History since 1500.....	3
HIST 201G, Introduction to Early American History.....	3
HIST 202G, Introduction to Recent American History .....	3
HIST 211G, East Asia to 1600 .....	3
HIST 212G, East Asia since 1600.....	3
HIST 221G, Islamic Civilizations to 1800.....	3
HIST 222, Islamic Civilizations since 1800 .....	3
HIST 311, Colonial Latin America .....	3
HIST 312, Modern Latin America .....	3

- HIST 398, Historians and History\* .....

\*Should be taken in junior year after consultation with advisor. Course prerequisite is English 311G.

- At least one of the following courses: HIST 401, Environmental History; HIST 413, Native American History; HIST 415, Western American History; HIST 420, History of Women and Gender; HIST 424, History of Art, Thought and Literature; HIST 426, Social and Cultural History I; HIST 427, Labor History; HIST 431, Race and Ethnicity; HIST 432, United States Labor History to 1877; HIST 433, United States Labor History since 1877; HIST 434, Urban History; HIST 435, History of War and Revolution; HIST 436, Nations and Nationalism, HIST 437, Empire and Colonialism; HIST 438, Antiquity and Modernity; HIST 439, History of Science and Technology; HIST 440, History of Religion and Spirituality; HIST 443, The Cold War in Latin America; and HIST 445, History and Memory.
- Six additional 3-credit upper division History courses, at least 1 of which must be a course numbered 400 or above. No more than nine upper division credits (with exception of HIST 398) may be from any particular field of History. Students may count additional credits in a particular field of History if they pass more than the minimal number of required upper division credits for the degree.
- Majors must pass a total of 18 upper division History credits, (not including HIST 311, 312, and 398) with at least 6 at the 400 level.
- Majors must pass the second language requirement at the 212/214 level or the 300- level. Please see College of Arts and Sciences pages for discussion of the ways to pass this requirement.

**Electives:** Sufficient to bring total credits to 128, including 48 upper-division credits.

History majors who are planning on pursuing certification as public school teachers should take the following 6 courses in preparation. These 6 courses will complete approximately half of the course work necessary for students to earn teaching licensure in New Mexico. After completing the undergraduate degree in History with a grade point average of 2.5 or above, student should apply to the Graduate School for admission to the Department of Curriculum and Instruction and the Teacher Education Program in the College of Education to pursue the remaining courses needed to complete secondary licensure.

- |   |
|---|
| EDUC 315, Multicultural Education   |
| EDLT 368, Integrating Technology with Teaching  |
| SPED 350, Introduction to Special Education in a Diverse Society                          |
| EDUC 381, Field Experience III  |
| EDUC 530, Exploration in Education (recommended for senior year or as a graduate student) |



**MINOR: History**

A student may not earn both a bachelor's degree in the Department of History and a minor in History.

1. Students must pass 6 credits from among the following courses:  
HIST 101G, Modern Europe; HIST 102G, Modern Europe; HIST 111G, Global History to 1500; HIST 112G, Global History since 1500; HIST 201G, Introduction to Early American History; HIST 202G Introduction to Recent American History; HIST 211G, East Asia to 1600; HIST 212G, East Asia Since 1600; HIST 221G, Islamic Civilizations to 1800; HIST 222G, Islamic Civilizations since 1800

2. Students must pass at least 12 additional credits in History, of which at least 9 credits are numbered 300 and above.

Note: All courses must be passed with grades of C or above. No courses may be taken S/U.

**MINOR: Contemporary Social Studies**

This minor focuses on world issues since 1900. Students must pass one course taken from each of the five departments listed below, plus an additional course taken from any of the five areas or a course that is approved by the Department of History, with grades of C or higher. Courses must not be taken on an S/U basis unless they are automatically S/U for all students. Students may substitute an appropriate subtitled special topics course, an independent readings or projects course, or an Honors course in any area with the permission of the head of the department offering the courses in that area.

**A. Criminal Justice**

C J 322, Organized Crime.....	3
C J 451, Border Violence and Justice.....	3
C J 452, "Upper World" Crime.....	3
C J 453, Women and Justice.....	3

**B. Geography**

GEOG 325V, New Mexico and the American West.....	3
GEOG 328V, Geography of Latin America.....	3
GEOG 331V, Europe.....	3
GEOG 363V, Cultural Geography.....	3
GEOG 365V, Urban Geography.....	3

**C. Government**

GOVT 324, Environmental Policy.....	3
GOVT 343, Congress and the Legislative Process.....	3
GOVT 344, The American Presidency.....	3
GOVT 345, The Supreme Court.....	3
GOVT 354, American Indian Politics.....	3
GOVT 360, International Relations.....	3
GOVT 366, American Foreign Policy.....	3
GOVT 371, Latin American Politics.....	3
GOVT 378, U.S./Mexico Border Politics.....	3
GOVT 391, Constitutional Law.....	3
GOVT 392, Civil Liberties.....	3
GOVT 394, Judicial Process.....	3
GOVT 397, Law and Sex.....	3
GOVT 469, Globalization.....	3

**D. History**

HIST 302V, Science in Modern Society.....	3
HIST 327, History of the Modern Middle East.....	3
HIST 331, Rebels, Guerillas and Terrorists in Modern Latin America.....	3
HIST 338, World War I.....	3
HIST 339, World War II.....	3
HIST 349, The New Deal, 1920-1960.....	3
HIST 350, Recent United States, 1960-Present.....	3
HIST 356, The Mexican Revolution.....	3
HIST 362, Afro- American History II.....	3
HIST 364, Twentieth Century Europe.....	3
HIST 365, Cold War Europe.....	3
HIST 377, Nationalism, Ethnic Cleansing, and Genocide in 20th Century Europe.....	3
HIST 380, Modern Eastern Europe.....	3
HIST 382V, Modern Russia.....	3
HIST 383, Germany.....	3

HIST 390, The Holocaust.....	3
HIST 391, Twentieth Century World History.....	3
HIST 395, From Rule Britannia to 'Cool Britannia': Twentieth-Century Britain.....	3
HIST 414, U.S. Social and Cultural History Since 1900.....	3
HIST 433, United States Labor History Since 1877.....	3
HIST 443, The Cold War in Latin America.....	3
HIST 448, Nuclear Nation.....	3
HIST 481, Time Traveling Through New Mexico's Past (twentieth century topics only).....	3

**E. Sociology**

SOC 361V, Social Issues in the Rural Americas.....	3
SOC 371, Race and Ethnic Relations.....	3
SOC 372, Sociology of Multicultural Healthcare.....	3
SOC 374V, Comparative Family Systems.....	3
SOC 375, Social Inequality.....	3
SOC 376V, Social Change.....	3
SOC 381, Individual and Society.....	3
SOC 392, Juvenile Delinquency.....	3
SOC 430, Social Movement Theory.....	3
SOC 458V, Comparative Global Family Systems.....	3
SOC 459, Advanced Issues in Sex and Gender.....	3
SOC 465V, Environmental Sociology.....	3
SOC 470, Sociology of Latino/as in the United States.....	3
SOC 474, Sociology of Organizations.....	3
SOC 477, Sociology of Education.....	3
SOC 479, Sociology Perspectives on the U.S./Mexico Border.....	3
SOC 489, Globalization.....	3

## JOURNALISM and MASS COMMUNICATIONS

**Associate Professor Chung, interim department head**

**Professor** McCleneghan; **Associate Professor** M. Lamonica, Mellen; **Assistant Professors** Berman, Thayer; **College Assistant Professor** Porter; **Instructors** Bradford, Faivre, K. Lamonica, Nosbisch, Scholz; **News22 Director** Miller  
(575) 646-1034  
<http://journalism.nmsu.edu/>

**DEGREE: Bachelor of Arts**

**MAJOR: Journalism and Mass Communications**

**MINOR: Journalism and Mass Communications**

**DEGREE: Bachelor of Arts**

**MAJOR: Journalism and Mass Communications**

Study in Journalism and Mass Communications prepares students for careers in mass media, including print, broadcasting, advertising, public relations and photojournalism, and how these disciplines are converging on the Web. The curriculum emphasizes the skills of gathering, evaluating and disseminating information and related skills. Students also are instructed in the theory, law, history and professional guidelines of mass media.

Students are required to complete 12 hours of core courses, 13 hours of core courses if they do not meet the required english ACT or SAT scores (see below), then complete an additional 30 hours of courses in the department, bringing the allowable minimum of 42 hours. Students must complete at least 85 or 86 hours of courses outside the department, and must have at least 65 hours of credits in the liberal arts and sciences. Students are required to fulfill a Second Language equivalent to two years. Refer to the Arts & Sciences College Degree Requirements for specifics.

**Core Requirements (required of majors)**

JOUR 102, Grammar for Journalists (for those with ACT English score below 25 or SAT below 570).....	1
JOUR 105G, Media and Society.....	3
JOUR 110, Introduction to Mass Media Writing.....	3

JOUR 210, Newswriting for Print and Internet .....	3
JOUR 493, Mass Communications Law.....	3

\*Students must pass JOUR 102 or have an ACT score of 25+ or 570+ SAT score prior to enrolling in JOUR 110, Introduction to Mass Media Writing and higher writing-based JOUR courses and to earn a Journalism and Mass Communications Degree.

#### Advanced Requirements

Students must complete 30 hours of non-core courses, including at least one course from each category listed below. Entry into courses is subject to successful completion of appropriate prerequisites.

#### Category I: Intermediate Media Courses

JOUR 306, Feature Writing for Magazines and Newspapers.....	3
JOUR 310, Intermediate Print Reporting .....	3
JOUR 312, Advertising Copywriting.....	3
JOUR 314, Broadcast Reporting.....	3
JOUR 317, News Editing .....	3
JOUR 319, Introduction to Photography.....	3
JOUR 320, Advanced Photojournalism.....	3
JOUR 330, Electronic News Gathering.....	3
JOUR 374, Principles of Public Relations .....	3
JOUR 407, Media Internship.....	3
JOUR 408, Media Practicum .....	1-3

#### Category II: Advanced Media Courses

JOUR 307, Television Studio Directing .....	3
JOUR 412, Documentary Photojournalism .....	3
JOUR 414, RTV Scriptwriting and Performance.....	3
JOUR 423, Computer-Assisted News Reporting.....	3
JOUR 476, Public Relations Cases and Problems.....	3
JOUR 490, Advertising Campaigns .....	3

#### Category III: Mass Communications Courses

JOUR 300, Introduction to Advertising.....	3
JOUR 305, Visual Media .....	3
JOUR 321, Media Graphic Design.....	3
JOUR 350, History of Mass Media .....	3
JOUR 377V, Mass Media Ethics.....	3
JOUR 380, Women and the Mass Media.....	3
JOUR 425, Media Planning .....	3
JOUR 460, Public Relations Promotion in Sports .....	3
JOUR 484, Public Opinion.....	3
JOUR 489, Mass Media Research.....	3
JOUR 494, Special Topics (various topics).....	3
JOUR 495, Mass Communication Theory .....	3
JOUR 499, Independent Study in Mass Communications .....	1-3

#### Category IV: Multi Media Courses

JOUR 302, Video Production (recommended for students specializing in broadcasting).....	3
JOUR 422, Visual Convergence .....	3
JOUR 427, Multimedia Publishing.....	3

#### MINOR: Journalism and Mass Communications

Students may not earn both a Bachelor of Arts in Journalism and Mass Communications and minor in Journalism and Mass Communications

*JOUR 102, Grammar for Journalists (for those with English ACT score below 25 or SAT below 570).....	3
JOUR 105G, Media and Society.....	3
JOUR 110, Introduction to Mass Media Writing .....	3
JOUR 210, Newswriting for Print and Internet .....	3
Upper division JOUR courses totaling 9 upper division credits .....	9

\*Note: students must pass JOUR 102 or have an ACT score of 25+ or 570+ SAT score prior to enrolling in JOUR 110, Introduction to Mass Media Writing and higher writing-based JOUR courses and to earn a Journalism and Mass Communications Minor..

## LANGUAGES and LINGUISTICS

**Professors** Barquet, Fouillade, Garcia, MacGregor-Mendoza, Pollack, Villa, Wolf; **Assistant Professors** Deshors, Herrera, Waltermire; **College Professor** Longwell; **College Associate Professor** Buchenau; **College Assistant Professors** Calk, Pedersen  
(575) 646-3408

<http://www.nmsu.edu/~langling/>

**DEGREE: Bachelor of Arts**  
**MAJOR or DOUBLE MAJOR: Foreign Languages**  
**OPTION: French**  
**OPTION: German**  
**OPTION: Spanish**

**SUPPLEMENTARY MAJOR: Latin American Studies**  
**SUPPLEMENTARY MAJOR: Chicano Studies**  
**SUPPLEMENTARY MAJOR: Linguistics**

**MINORS: French**  
**German**  
**Linguistics**  
**Spanish**

Programs of study in the Department of Languages and Linguistics prepare students for a diverse number of professions and provide them with critical skills that compliment many careers in an increasingly interdependent, global marketplace. Students also increase their awareness of the important role language plays in human interaction, on individual and global levels.

The major curriculum plans in each language include balanced groups of courses in language, linguistics, literature, and culture. Students may choose to major, double major, or minor in French, German, or Spanish. Requirements involve 24 credits numbered 300 or above in the major field.

#### College Second Language Requirement

To meet the second language requirement, the student must do one of the following:

- Non-Heritage language speakers should complete the normal language course sequence: 111, 112, 211, 212. Students should enter the sequence at their proficiency level. Heritage language speakers should complete the 113, 213, 214 sequence. Students who successfully complete either SPAN 113 or 213 or 214 may not take SPAN 111, 112, 211 or 212 for credit.
- Challenge the 212 level of Arabic, Chinese, French, German, Japanese, Latin, or Spanish, or the 214 level of Portuguese, or Spanish for Heritage Speakers.
- Obtain college certification of completion of three consecutive years of one second language at the high school level with a grade of C or higher.
- Obtain, from the head of the Department of Languages and Linguistics, certification of a working knowledge of a second language if such language is not taught at New Mexico State University. The student must demonstrate reading, writing, listening, and speaking skills in the language at a minimum of the 212 or equivalent level through examination.
- Obtain certification of a working knowledge of a Native American language from the American Indian program director.
- Pass an upper-division course (numbered 300 or above- does not include directed reading, independent study, practicum or Viewing a Wider World courses) taught in a second language by the Department of Languages and Linguistics.
- Pass C D 476, American Sign Language III with a grade of C or better
- In the case of a foreign student who is required to take the TOEFL exam, the dean will automatically waive the second language requirement if the student scores 500 or above or the equivalent.
- ESL or English language may not be used to fulfill the language requirement.
- Students should satisfy the language requirement as soon as possible and take the necessary courses in the sequence indicated by the advisor.

**DEGREE: Bachelor of Arts**

**MAJOR or DOUBLE MAJOR: Foreign Languages****Departmental Requirements for Majors**

All Foreign Language majors (single) are required to take LING 200G and a second language through 212 (or 214 if in the Native Speaker Track of Spanish or taking Portuguese) or equivalent with the approval of the department. Students majoring in Spanish may take SPAN 340 in lieu of LING 200G.

An S grade in a foreign language course must correspond to a C grade or better.

Electives sufficient to bring total credits to 128, including 48 upper-division.

**Language Placement**

The language assessment is recommended for all students entering language courses. The language assessment may be taken online from your home or any of the campus computer labs. Please print your assessment results so you will have that information available. You will find the link for the language assessment on the department web page.

**Departmental Requirements for Double Majors**

Students can double major in Foreign Languages by completing an option in French, German, or Spanish while completing a different major in another department. The double major must be completed prior to or simultaneously with the Foreign Languages major.

Students who double major in Foreign Languages with an option in either French, German or Spanish are not required to take LING 200G or a second language.

Students who major in Foreign Languages only and who simultaneously fulfill both the French, German and/or Spanish options are not required to take an additional language or LING 200G. This is not a double major as the degree is in Foreign Languages with two options, French and Spanish.

An S grade in a foreign language course must correspond to a C grade or better.

Electives sufficient to bring total to 128, including 48 upper-division.

After completion of beginning and intermediate French, German, or Spanish (or their equivalent), students are eligible to take courses numbered 300 and above.

**OPTION: French****Requirements**

French courses numbered 300 or above—24 credits, one class each in the areas of language studies, culture, and literature. Must include FREN 313 or FREN 314.

Language Studies: FREN 301, 313, 314, 325, 352, 408, 425, 480

Culture: FREN 305, 306, 360, 362, 378, 385, 410, 462, 478, 485

Literature: FREN 302, 381, 382, 386, 471, 472, 486

One course required at the 400 level. Other courses selected with the aid of an advisor.

**OPTION: German****Requirements**

German courses numbered 300 or above—24 credits selected with the aid of an advisor.

**OPTION: Spanish****Requirements**

SPAN 312 or 313 and 314 or 315.

Spanish courses numbered 300 and 400—24 credits selected with the aid of an advisor. Required for the major, double major, or minor: SPAN 312 or SPAN 313, and SPAN 314 or SPAN 315.

Credit will not be given for both SPAN 312 and 313. Credit will not be given for both SPAN 314 and 315.

**SUPPLEMENTARY MAJOR: Latin American Studies**

This program consists of 24 credits drawn from the lists below of which 18 credits must be numbered 300 or above. In addition, students must satisfy the College of Arts and Sciences language requirement through course work, proficiency examinations, or by taking three years of the same language in high school. Advisor: Dr. Mark Milliorn, Languages and Linguistics.

**OPTIONS**

There are two options based on the section chosen by the student:

**Option 1:** Concentration in Latin American Language, Culture, and Literature (Spanish or Portuguese):

a) 12 credits from Section 1

b) 12 credits from Section 2, of which no more than 6 may be taken in a single department

**Option 2:** Concentration in one major (e.g., history, government, economics, health science, anthropology, sociology) included in Latin American Social Sciences and Art:

a) 12 credits in the chosen area of Section 2 (if the major is government, one of these courses may be ECON 325V)

b) 6 credits from another area (or areas) of Section 2

c) 6 credits from Section 1

Both options require that the student take at least two Spanish or Portuguese courses above 300-level, for which courses the student must pass either the language placement test or SPAN/PORT 212 or 214.

**Section 1: Latin American Language, Culture and Literature:****Spanish/Portuguese****Language\***

SPAN 325, Advanced Conversation ..... 3

SPAN 327, Conversation for Native Speakers of Spanish ..... 3

HL S 461, Health Communications with Hispanic Clients ..... 3

PORT 325, Portuguese Conversation ..... 3

\*Only 3 credits will count.

**Culture**

PORT 449, Special Problems ..... 3

SPAN 305, Topics in Hispanic Civilization ..... 3

SPAN 306, Special Topics ..... 3

SPAN 362, Hispanic Cultures and Civilizations ..... 3

SPAN 363, US-Hispanic Culture ..... 3

SPAN 450, Mexican Cultures ..... 3

SPAN 469, Gender and Sexuality in Hispanic Film ..... 3

SPAN 491, History of the Spanish Language ..... 3

**Literature**

SPAN 386, Hispanic Literature through the Seventeenth Century ..... 3

SPAN 387, Hispanic Literature: Eighteenth and Nineteenth Century ..... 3

SPAN 388, Contemporary Spanish Literature ..... 3

**Section 2: Latin American Social Sciences and Art**

ANTH 110, New World Prehistory ..... 3

ANTH 306V, Peoples of Latin America ..... 3

ANTH 307, People of Mexico and Guatemala ..... 3

ANTH 312, Ancient Maya ..... 3

ANTH 313, Ancient Mexico ..... 3

ANTH 361V, Social Issues in the Rural Americas ..... 3

ANTH 387, Field Work in Latin America ..... 3

ART 320, Art and Architecture in Pre-Columbian Meso-America ..... 3

ART 321, Pre-Columbian Art and Architecture of the Andes ..... 3

ECON 324V, Developing Nations ..... 3

ECON 325V, Economic Development of Latin America ..... 3

GEOG 328V, Geography of Latin America(s) ..... 3

GEOG 461, U.S.-Mexico Border Development ..... 3

GOVT 371, Latin American Politics ..... 3

GOVT 378, U.S.-Mexico Border Politics ..... 3

GOVT 379, Mexican Politics ..... 3

HIST 311V, Colonial Latin America ..... 3

HIST 312, Modern Latin America ..... 3

HIST 331, Rebels, Guerillas and Terrorism in Modern Latin America ..... 3

HIST 353, Colonial Mexico ..... 3

HIST 354, Modern Mexico ..... 3

HIST 356, The Mexican Revolution ..... 3

HIST 357, Central America ..... 3

HIST 358, Argentina ..... 3

HIST 387, Spain ..... 3

HIST 453, Cuba: Colony to Castro ..... 3

HIST 455, Brazil ..... 3

HIST 458, History of the U.S.-Mexican Border .....	3
HIST 459, Peru .....	3
HL S 462, Hispanic Health Issues .....	3
HL S 463, Interdisciplinary Seminar .....	3
HL S 465V, International Health Problems .....	3
HL S 469, U.S.-Mexico Border Health Issues.....	3
PORT 451, Special Topics in Luso-Brazilian Studies.....	3
PORT 453, Independent Luso-Brazilian Studies.....	3
SOC 361, Social Issues in the Rural Americas.....	3
SOC 479, Sociology Perspectives on the US-Mexico Border .....	3
SPAN 364V, Culture of Mexico .....	3
SPAN 365V, Culture of Latin America .....	3
SPAN 410, Mesoamerican Literature and Culture .....	3
SPAN 412, Spanish-American Poetry.....	3
SPAN 413, Mexican Literature .....	3
SPAN 415, Spanish-American Women Writers.....	3
SPAN 416, Nineteenth Century Spanish-American Literature.....	3
SPAN 417, Spanish-American Essay.....	3
SPAN 418, Spanish-American Short Story.....	3
SPAN 419, Spanish-American Theater .....	3
SPAN 421, Cuban Literature.....	3
SPAN 422, Literature of Mexican Revolution.....	3
SPAN 424, Spanish-Caribbean Literature.....	3
SPAN 425, Spanish-American Literature Through the Eighteenth Century.....	3
SPAN 426, Spanish-American Novel.....	3
SPAN 429, Northern Mexican Literature .....	3
SPAN 447, Hispanic Film .....	3

In both sections, independent studies, honors or special topics courses may be chosen with the approval of the Supplementary Major in Latin American Studies advisor, the head of the Department of Languages and Linguistics, and the College of Arts and Sciences. As departments add new courses they may be included in the program. For information, please consult with the Languages and Linguistics advisor.

#### SUPPLEMENTARY MAJOR: Chicano Studies

This program consists of 24 credits from the lists below. Advisor: Dr. Spencer R. Herrera, Languages and Linguistics.

##### Core Requirements - 9 credits from

ANTH 308, Peoples of the Southwest.....	3
COMM 445, Communication, Ethnicity and Prejudice.....	3
SPAN 327, Spanish in the Community .....	3
SPAN 448, U.S. Hispanic (Chicano Film) .....	3
GOVT 346, New Mexico Government and Politics .....	3
HIST 367, Mexican Americans in the United States .....	3
HIST 458, History of the U.S.-Mexican Border .....	3
SOC 270, Sociology of the Chicano Community I.....	3
SOC 470, Sociology of Latinos/as in the United States.....	3
SPAN 350, Introduction to Chicano Studies.....	3

##### Culture and Literature - 6 credits from

ART 320, Art/ Arch in Pre-Columbian Meso-America .....	3
ENGL 361, Southwest Folklore.....	3
ENGL 339V, Chicano Literature.....	3
ENGL 394V, Southwest Literature.....	3
ENGL 458, Latino/a Literature and Culture.....	3
SPAN 361, Mexican Border Culture.....	3
SPAN 385, Introduction to Chicano Literature.....	3
SPAN 427, Chicano/US Mexican-Literature .....	3
SPAN 450, Mexican Cultures .....	3
SPAN 451, Hispanic Cultures (Chicano/a Pop Culture).....	3
SPAN 428, Hispanic Literature of the U.S. ....	3
SPAN 470, Methods for Teaching Hispanic Children and Adolescents Literature .....	3
Applicable upper-division honors courses .....	3
Applicable upper-division "special topics" courses .....	3

##### Social Studies - 6 credits from

C J 414, Race, Crime and Justice .....	3
C J 451, Border Violence and Justice .....	3
ECON 331, The Border Economy.....	3

ECON 346, The New Mexico Economy.....	3
GOVT 346, New Mexico Government and Politics .....	3
GOVT 378, U.S. Mexican Border Politics.....	3
GOVT/C J/HIST/JOUR/SOC 399, New Mexico Law.....	3
GOVT 478, U.S.-Mexico Border Politics .....	3
HIST 261, New Mexico History.....	3
HIST 369, History of Latinos in the United States .....	3
HIST 400, New Mexico in Visual Culture.....	3
HIST 410, New Mexico History for Educators .....	3
HIST 416, History of Latinos in the U.S. ....	3
SOC 371, Race and Ethnic Relations .....	3
SPAN 353, Spanglish and Bilingualism in the United States .....	3
SPAN 361, U.S.- Mexican Border Culture.....	3
SPAN 493, Studies in U.S. and Borderland Spanish .....	3
Applicable upper-division honors courses .....	3
Applicable upper-division "special topics" courses .....	3

##### Electives - 3 credits from

ANTH 313, Ancient Mexico .....	3
ANTH 361V, Social Issues in the Rural Americas.....	3
BIL 355, Introduction to Bilingual/Multicultural Special Education.....	3
C EP 517, Psychology of Multiculturalism (only with prior written permission of instructor, department head, and course dean).....	3
EDUC 315, Multicultural Education.....	3
EDUC 341, Teaching Subject Matter in Spanish to Bilingual Teachers.....	3
EDUC 344, Issues in Schooling for Bilingual Leaders .....	3
ENGL 394V, Southwest Literature.....	3
GEOG 325V, New Mexico and the American West.....	3
GOVT/C J/HIST/JOUR/SOC 399, New Mexico Law.....	3
HIST 311V, Colonial Latin America.....	3
HIST 483, Historic Preservation.....	3
HL S 462, Hispanic Health Issues .....	3
HL S 469, U.S.-Mexico Border Health Issues.....	3
SPAN 457, Strategies for Teaching Spanish to Native Speakers.....	3
W S 454, Women and Borderlands .....	3

In both sections, independent study, honors or special topics courses may be chosen with the approval of the advisor for Supplementary Majors in Chicano Studies, the head of the Department of Languages and Linguistics, and the College of Arts and Sciences. As departments add new courses they may be included in the program. For information, please consult with the Languages and Linguistics advisor.

#### SUPPLEMENTARY MAJOR: Linguistics

This program consists of 24 credits drawn from the lists below. In addition, students must satisfy the College of Arts and Sciences language requirement through course work, proficiency exams, or by taking three years of the same language in high school. Advisor: Dr. Patricia MacGregor-Mendoza, Languages and Linguistics.

##### Core Requirements (12 credits)

LING 200G, Introduction to Language.....	3
LING/PSY 301, Introduction to Psycholinguistics .....	3
LING 302V, Language and Society.....	3
LING 303, Exploring Language Systems.....	3

##### Electives (12 credits)

Take 12 credits from the list below and follow these guidelines: (1) at least 3 hours must be at the 400 level, (2) no more than 6 hours may be from the department where the student is obtaining his/her major, (3) all special topic, independent study, or directed reading courses must be approved by the Department of Languages and Linguistics.

ANTH 320, Anthropological Linguistics.....	3
COMM 305, Communication Research Methods.....	3
COMM 351, Persuasion Theory and Practice .....	3
COMM 370, Organizational Communication .....	3
COMM 376, Communication and Culture.....	3
COMM 384, Interpersonal Communication.....	3
COMM 435, Psychology of Human Communication .....	3
COMM 440, Political Communication .....	3
COMM 445, Communication, Ethnicity and Prejudice.....	3



COMM 450, Technologies of Human Communication .....	3
COMM 460, Deception and Communication.....	3
COMM 463, Communication and Gender .....	3
COMM 465, Nonverbal communication.....	3
COMM 475, International Communication .....	3
COMM 480, Health Communication .....	3
COMM 484, Verbal Communication.....	3
COMM 490, Independent Study* .....	3
COMM 491, Selected Topics*.....	3
C D 360, Language Acquisition .....	3
C D 365, Language Acquisition for non-C D majors.....	3
C D 374, American Sign Language I .....	3
C D 375, American Sign Language II .....	3
C D 380, Speech Science .....	3
C D 390, Phonetics.....	3
C D 452, Speech Disorders .....	3
C D 453, Language Disorders.....	3
C D 476, American Sign Language III.....	3
C S 409, Independent Study*.....	1-3
C S 471, Programming Language Structure.....	3
C S 479, Special Topics*.....	1-3
EDUC 465, Special Topics in Bilingual Education/ESL*.....	1-6
EDUC 483, Second Language Acquisition .....	3
EDUC 495, Directed Study Courses in Education*.....	1-3
ENGL 451, Practicum in the Grammar of American English.....	3
ENGL 452, History of the English Language.....	3
FREN 352, French Phonetics .....	3
FREN 480, Contrastive Stylists of French English.....	3
GER 391, History of the German Language .....	3
GER 451, Special Topics in German* .....	3
GER 453, Independent Studies in German*.....	3
LING 451, Independent Studies in Linguistics* .....	1-3
PHIL 312, Formal Logic.....	3
PHIL 315, Philosophy of Language.....	3
PORT 453, Independent Luso-Brazilian Studies*.....	1-3
PSY 361, Language Processing.....	3
PSY 401, Directed Readings*.....	1-3
SPAN 340, Introduction to Spanish Linguistics .....	3
SPAN 352, Spanish in Social Contexts .....	3
SPAN 353, Spanglish and Bilingualism in the United States .....	3
SPAN 438, Strategies for Development of Spanish Proficiency .....	3
SPAN 439, Topics in Applied Spanish Linguistics .....	3
SPAN 453, Independent Studies in Hispanic Linguistics*.....	3
SPAN 460, Spanish Language Acquisition.....	3
SPAN 461, Introduction to Spanish Phonetics .....	3
SPAN 462, Spanish Phonology .....	3
SPAN 491, History of the Spanish Language .....	3
SPAN 492, Structure of Spanish.....	3
SPAN 493, Studies in U.S. and Borderland Spanish .....	3
SPAN 496, Methods for Teaching Proficiency.....	3

\*Special topics, independent studies, and directed readings must be approved by the Department of Languages and Linguistics.

#### Department Requirements for a Minor in French, German, or Spanish

A minor requires 18 hours of course work in the target language. FREN, GER or SPAN 211 and/or 212 (or SPAN 213 and/or 214) may count towards the 18 credits required. SPAN 312 or SPAN 313 and SPAN 314 or SPAN 315 required for Spanish minor.

#### MINOR: French

A student whose primary language for a B.A. in Foreign Languages is French may not also earn a minor in French. Students must pass at least 18 credits of which at least 12 credits are upper division. Students may not count FREN 111 or FREN 112, but may count FREN 211 and/or FREN 212.

A minor in French requires:

FREN 313, Composition and Grammar I, or FREN 314, Composition and Grammar II.....	3
One upper division course in French culture. Please see department for list of eligible courses .....	3

One upper division course in French language studies. Please see department for list of eligible courses. .... 3

One upper division course in French literature. Please see department for list of eligible courses. .... 3

Six additional French credits. Please see department for list of eligible courses.

#### MINOR: German

A student whose primary language for a B.A. in Foreign Languages is German may not also earn a minor in German. Students must pass at least 18 credits of which at least 12 credits are upper division.

Six credits from among GER 313, Intermediate Composition and Grammar; GER 325, German Conversation I; and GER 343, Building Reading Skills .....

Twelve additional German credits, of which at least 6 are upper division..... 12

#### MINOR: Linguistics

The department offers a minor in linguistics. Students will take LING 200G and two of the three core courses, LING 301, 302, 303. The remaining 9 credit hours will be chosen with the help of the advisor from related fields.

Topics in courses marked with asterisks must be approved by the component head for Linguistics in the Department of Languages and Linguistics in order to count in this minor. A student may not earn both a supplementary major in Linguistics and a minor in Linguistics.

LING 200G, Introduction to Language..... 3

Two of LING/PSY 301, Introduction to Psycholinguistics; LING 302V, Language and Society; and LING 303, Exploring Language Systems..... 6

Nine hours of electives from the approved list in consultation with the linguistics advisor (see list of elective for the supplementary major in linguistics)..... 9

#### MINOR: Spanish

A student whose primary language for a B.A. in Foreign Languages is Spanish may not also earn a minor in Spanish. Students must pass at least 18 credits of which at least 12 credits are upper division. Students may not count SPAN 364V or SPAN 365V because they are taught in English.

SPAN 312, Grammar for Native Speakers of Spanish, or SPAN 313, Spanish Grammar..... 3

SPAN 314, Spanish Composition or SPAN 315, Composition for Native Speakers of Spanish..... 3

The remaining 12 credits are electives, at least 6 of which must be taken at the 300 or 400 level. However, up to 6 of the 12 elective credits may be counted from courses passed at the 200 level..... 12

## MATHEMATICAL SCIENCES

#### Professor Joseph Lakey, department head

**Professors** Baggett, Barany, Bezhanishvili, DeBlassie, Finston, Harding, Kurtz, Lakey, Lodder, Morandi, Olberding, Staffeldt, Wang; **Associate Professors** Ballyk, Cohen, Giorgi, Salamanca-Riba, Smits, Stanford; **Assistant Professors** Fouli, Ramras; **College Associate Professors** Fulte, Mostafa, Stuart, Voges, Zimmerman; **College Assistant Professor** White-Hosford; **College Instructors** Bramlett, Reece, Train  
(575) 646-3901  
<http://math.nmsu.edu/>

#### DEGREE: Bachelor of Science

#### MAJOR: Mathematics

Emphasis: General

Emphasis: Actuarial Science and Insurance

Emphasis: Applied Mathematics

#### SUPPLEMENTARY MAJOR:

Applied Mathematics

#### MINOR: Mathematics

This department offers programs leading to a major or minor in mathematics. Courses in this department are listed as "Mathematics" (MATH) or as "Statistics" (STAT).

**DEGREE: Bachelor of Science**  
**MAJOR: Mathematics**

In addition to meeting University and College requirements, students earning a B.S. in Mathematics must fulfill the core departmental requirements and choose from one of three emphasis: General, Applied Mathematics or Actuarial Science and Insurance. Students must earn a grade of C or better in all departmental and nondepartmental courses for any degree in the Department of Mathematical Sciences.

**Core Departmental Requirements**

MATH 191G, Calculus and Analytic Geometry I.....	3
MATH 192G, Calculus and Analytic Geometry II.....	3
MATH 291G, Calculus and Analytic Geometry III.....	3
MATH 279, Introduction to Finite Mathematics.....	3
MATH 280, Introduction to Linear Algebra.....	3

**Notes**

Some students may be able to bypass one or more courses in the calculus sequence 191-192-291. The calculus sequence, finite mathematics, and linear algebra provide knowledge that is basic to further work, and students are advised to complete them or their equivalent as early as possible.

Students planning to enter a graduate program in Mathematics should select the General Emphasis. In any case, such students are strongly advised to take both MATH 331 and MATH 332, since these courses are required by most programs, and should take as many as possible of the courses MATH 481, 491, 492. Students planning to do graduate work in Mathematics are encouraged to take French or German to meet the requirement of a second language.

**Emphasis: General**

Students seeking a foundation in pure mathematics and flexibility in the curriculum are encouraged to pursue the General Emphasis. Students choosing this emphasis should work closely with a faculty advisor to select courses appropriate to their interests.

**Departmental Requirements**

MATH 331, Introduction to Modern Algebra.....	3
MATH 332, Introduction to Analysis.....	3

**Departmental Electives**

At least 18 additional upper-division credits of approved courses prefixed MATH or STAT, excluding MATH 300, 308, 313, 314, 315, 316, 400, 402, 459, and STAT 400. Any special topics course MATH or STAT 301 and MATH or STAT 401 must be approved by the department for credit towards the major. At least 12 of the MATH and STAT credits must be numbered higher than 400.

**Nondepartmental Requirements for the Major (A grade of C or better must be earned.)**

Foreign Language requirement as described in the College Degree Requirements for the College of Arts and Sciences.

C S 172, Computer Science I.....	3
C S 272, Introduction to Data Structures.....	3

**Note**

It is strongly recommended that mathematics majors in the General emphasis consider a minor or second major in an area that uses mathematics, such as physics or computer science. All programs should be planned with the guidance of a departmental advisor. A short brochure containing further suggestions is available from the Department of Mathematical Sciences, and information is available at [www.math.nmsu.edu](http://www.math.nmsu.edu)

**Emphasis: Actuarial Science and Insurance**

The emphasis in Actuarial Science and Insurance draws on courses from mathematics and business to prepare students for a mathematical career in insurance. The coursework in this emphasis focuses on the analysis of risk and its applications to insurance finance. Students fulfilling the requirements for the Actuarial Science and Insurance Emphasis earn a minor in insurance.

**Departmental Requirements**

MATH 331, Introduction to Modern Algebra, or MATH 332, Introduction to Analysis.....	3
STAT 371, Statistics for Engineers and Scientists I.....	3
STAT 470, Probability: Theory and Applications.....	3
STAT 480, Statistics: Theory and Applications.....	3

**Departmental Electives (9 credits)**

The Actuarial Science Emphasis requires also at least a 9 additional upper-division credit hours of approved courses prefixed MATH or STAT, excluding MATH 300, 308, 313, 314, 315, 400, 402, 459, and STAT 400. Any special topics course MATH or STAT 301 and MATH or STAT 401 must be approved by the department for credit towards the major. At least 6 of the MATH and STAT credit hours must be numbered higher than 400.

**Nondepartmental Requirements**

ACCT 251, Managerial Accounting.....	3
ACCT 252, Financial Accounting.....	3
BLAW 316, Legal Environment of Business; or BLAW 385V, Consumers and the Law.....	3
E E 161, Computer Aided Problem Solving.....	3
E T 360V, Technology in Business and Society.....	3
ECON 251G, Principles of Macroeconomics.....	3
ECON 252G, Principles of Microeconomics.....	3
FIN 322, Principles of Insurance.....	3
FIN 326, Business Risk Management; or FIN 323, Life/Health/Employee Benefits; or FIN 324, Property and Liability Insurance.....	3
FIN 341, Financial Analysis and Markets.....	3

**Insurance Electives (Pick 2 of 4)**

FIN 303V, Personal Financial Planning and Investing in a Global Economy; or FIN 421, Personal Financial Planning for Professionals.....	3
FIN 323, Life/Health/Employee Benefits.....	3
FIN 324, Property and Liability Insurance.....	3
FIN 392, Insurance Internship and Cooperative Education I.....	3

**Emphasis: Applied Mathematics**

The Applied Mathematics emphasis is intended to prepare students planning a mathematically oriented career upon graduation. The coursework in this emphasis provides a foundation in mathematics important in many scientific and engineering applications.

**Departmental Requirements**

MATH 377, Introduction to Numerical Methods.....	3
MATH 392, Introduction to Ordinary Differential Equations.....	3
MATH 471, Complex Variables.....	3
MATH 472, Fourier Series and Boundary Value Problems.....	3
STAT 371, Statistics for Engineers and Scientists I.....	3
STAT 470, Probability: Theory and Applications.....	3

**Departmental Electives**

The Applied Mathematics emphasis requires at least 6 additional upper-division credit hours of approved courses prefixed MATH or STAT, excluding MATH 300, 308, 313, 314, 315, 400, 402, 459, and STAT 400. Any special topics course MATH or STAT 301 and MATH or STAT 401 must be approved by the department for credit towards the major. At least 3 of the MATH and STAT credit hours must be numbered higher than 400.

**Nondepartmental Requirements**

Majors choosing an Applied Mathematics emphasis must select a minimum of 12 credit hours of elective courses to form a coherent cluster in an applied area. Students may propose clusters subject to departmental approval. Examples of acceptable clusters are given below. More examples can be found at [www.math.nmsu.edu](http://www.math.nmsu.edu). A cluster must contain either C S 172 or E E 161. A major or minor in any of the following fields (along with C S 172 or E E 161) will also fulfill the Cluster Electives requirement: Computer Science, Physics, Biology, Chemistry and Biochemistry, Chemical Engineering, Engineering Physics, Electrical and Computer Engineering, Industrial Engineering, Mechanical Engineering, Civil Engineering, Economics and Finance.

**Examples of acceptable clusters;**

**Signals:** E E 161, minimum of 9 hours chosen from E E 280, E E 312, E E 395, E E 496  
**Structures:** C S 172 or E E 161; minimum of 9 hours chosen from PHYS 215G, C E 233, C E 301, C E 315, C E 365

**Operations Research:** E E 161; minimum of 9 hours chosen from I E 311, I E 365, I E 413, I E 423, I E 460

**Algorithm Theory:** C S 172, C S 272, C S 370, C S 372

**Bioinformatics:** BIOL 211 and 211L, C S 486, and a minimum of 6 hours chosen from C S 172, C S 272, C S 370, C S 371, or C S 372

**Computer Systems:** C S 172, minimum of 9 hours chosen from C S 271 or C S 272, C S 371, two of C S 370, C S 451, C S 461, C S 474, C S 475, C S 476, C S 482, C S 484, C S 485, or C S 492

### SUPPLEMENTARY MAJOR: Applied Mathematics

The program consists of 24 credits in the designated list of courses. To earn a supplementary major in applied mathematics a student must earn 15 credits from Categories I.A and I.B of which at least 9 credits must be from Category I.B. A student must also earn 9 credits from the Category II list of related disciplines. The courses in Category II may be taken from any combination of areas. A student may not earn a bachelor's degree in mathematics with an emphasis in applied mathematics and also a supplementary major in applied mathematics.

#### Category I.A.— choose at most 6 credits

MATH 377, Introduction to Numerical Methods; MATH 391, Vector Analysis; MATH 392, Ordinary Differential Equations; STAT 371, Statistics for Engineers and Scientists I ..... 6

#### Category I.B. — choose at least 9 credits

MATH 331, Introduction to Modern Algebra; MATH 332, Introduction to Analysis; MATH 430, Combinatorial Mathematics; MATH 451, Introduction to Differential Geometry; MATH 453, Introduction to Topology; MATH 454, Mathematical Logic; MATH 471, Complex Variables; MATH 472, Fourier Series and Boundary Value Problems; MATH 473, Calculus of Variations and Optimal Control; MATH 480, Vector Spaces and Matrix Algebra; STAT 470, Probability-Theory and Applications; STAT 480, Statistics-Theory and Applications..... 9

#### Category II — related disciplines, choose any 9 credits

C E 315, Determinate Structural Analysis; C E 331, Hydraulic Engineering; C E 356, Fundamentals of Environmental Engineering; C E 382, Hydraulic Systems Design  
 CH E 305, Transport Operations I: Fluid Flow; CH E 412, Process Dynamics and Control; CH E 441, Chemical Kinetics and Reactor Engineering  
 C S 372, Data Structures and Algorithms; C S 476, Computer Graphics I; C S 486, Bioinformatics; C S 491, Parallel Programming; C S 492, Computer Systems Modeling and Simulation. For the next two courses, the student must be eligible to take 500-level courses: C S 510, Automata, Languages, Computability, and C S 570, Analysis of Algorithms.  
 ECON 405, Economic Statistics; ECON 457, Mathematical Economics; ECON 498, Independent Study (with approval)  
 E E 395, Introduction to Digital Signal Processing; E E 470, Physical Optics; E E 475, Control Systems II; EE 476, Computer Control Systems; E E 496, Introduction to Communication Systems I; E E 497, Introduction to Communications Systems II  
 I E 365, Quality Control; I E 413, Engineering Operations Research I; I E 415, Stochastic Processes Modeling; I E 423, Engineering Operations Research II; I E 460, Evaluation of Engineering Data; I E 466, Reliability  
 M E 332, Vibrations; M E 333, Intermediate Dynamics; M E 338, Fluid Mechanics; M E 341, Heat Transfer; M E 473, Compressible Flow  
 PHYS 451, Intermediate Mechanics I; PHYS 454, Intermediate Modern Physics I; PHYS 455, Intermediate Modern Physics II; PHYS 461, Intermediate Electricity and Magnetism I; PHYS 462, Intermediate Electricity and Magnetism II; PHYS 470, Physical Optics; PHYS 476, Computational Physics  
 SUR 351, Introductory Survey, Measurements, Analysis and Adjustments; SUR 451, Advanced Survey Measurements, Analysis and Adjustments; SUR 461, Introduction to Satellite Geodesy..... 9

### MINOR: Mathematics

A student must pass 18 or more credit hours in MATH and STAT courses, with at least 9 of the credits in upper division courses and 3 of those 9 credits in courses numbered above 400. The following courses are excluded from the minor: courses numbered below 190, MATH 200, MATH 210G, 300, 308, 311, 312, 313, 314, 315, 316, 400, 402, 459, 498 and STAT 400. At most, one of STAT 251G, STAT 271G, or STAT 371 may be included in a minor. Any special topics courses, MATH or STAT 301 and MATH or STAT 401, must be approved by the department for credit toward the minor. Any course taught outside the Department of Mathematical Sciences but cross-listed with a MATH or STAT course, must also be approved by the department for credit toward the minor. A student may not earn a bachelor's degree in mathematics or a supplementary major in applied mathematics and also earn a minor in mathematics.

## MILITARY SCIENCE

### LTC Andrew Taylor, department head

**Assistant Professors** Master Sergeant Walter Burleson, Command Sergeant Major William Dove; Captain Warren Maestas; Captain Carmelo Rodriguez  
**(575) 646-4030**

<http://www.nmsu.edu/~armyrotc/>

The Military Science program leads to a commission as an officer in the Army Reserve, National Guard, or Active Duty Army. The program consists of four parts: the student's academic major, nondepartmental courses of value to the military service, courses in military science, and a six-week Leader Development and Assessment course. The department offers a four-year program divided into two parts: the basic course (two years) and the advanced course (two years). Selected students may qualify for the two-year program with prior military service or successful completion of a six-week summer Leaders' Training Course. Financial assistance and scholarships are available for qualified individuals. Students should contact the Department of Military Science to obtain additional information.

### Requirements for Minor in Military Science

The minor in Military Science is administered by the Department of Military Science (Army ROTC) in the College of Arts and Sciences. To obtain a minor in Military Science a student must complete a total of 19 credits, all of which must be upper division. A grade of C or better must be obtained for each course. The only credits in which a grade of S will be accepted is MSC 350. Students should contact the Department of Military Science to obtain additional information.

### MILITARY SCIENCE PROGRAM

#### Basic Course—Freshman

M SC 110, Introduction to Military Science ..... 2  
 M SC 111, Introduction to Leadership..... 2

#### Basic Course—Sophomore

M SC 210, Self/Team Development..... 3  
 M SC 211, Leadership in Action and Team Building ..... 3  
 M SC 225, Directed Studies ..... 1-3  
 M SC 250, Leadership Internship I (summer only) ..... 4  
 Courses should be taken in sequence, normally one per semester.

#### Advanced Course—Junior

M SC 310, 310L, Leading Small Organizations I/Lab ..... 4  
 M SC 320, 320L, Leading Small Organizations II/Lab..... 4  
 M SC 325, Advanced Directed Studies..... 1-3  
 M SC 350, Leadership Internship II..... 6

#### Advanced Course—Senior

M SC 401, 401L, Leadership Challenges and Goal Setting/Lab ..... 4  
 M SC 402, 402L, Transition to Lieutenant/Lab ..... 4  
 M SC 425, Practicum ..... 1-4

The student's Military Science advisor will recommend course sequence. Military Science students must sign up for and attend courses plus laboratories. Departmental requirements may not be taken S/U.

### NONDEPARTMENTAL REQUIREMENTS

One course in Military History must be successfully completed to meet Professional Military Education requirements. See your Military Science advisor for specific courses.

## MUSIC

### Professor Lon W. Chaffin, department head

**Professors** Alt, Borchert, Kaplan, Klein, Romero, Shearer; **Associate Professors** Bugbee, Rowe, Spitzer; **Assistant Professors** Joy, Martinez-Rios, L. Van Winkle, Vega-Albela  
**(575) 646-2421**

<http://music.nmsu.edu/>

**DEGREE: Bachelor of Music Education**  
**OPTIONS: K-12, Vocal**  
**K-12, Instrumental**

**DEGREE: Bachelor of Music**  
**OPTIONS: Piano Performance**  
**Instrumental Performance**  
**Vocal Performance**  
**Music Business**

**MINOR: Music**

**Mission Statement**

The mission of the Music Department at NMSU is:

- 1) to prepare students for careers in music education, business, and/or performance;
- 2) to give the student body opportunities to perform, study, create, and experience music;
- 3) to enhance the cultural lives of our constituency by performance of superior music; and
- 4) to create an artistic environment which fosters the development of personal realizations we believe to be essential to the fabric of a healthy society.

All students are required to meet the State Common Core as well as the College of Arts and Sciences general education requirement as listed in earlier sections of this catalog. Please see a Music Department advisor for a specific list of courses.

**Departmental Requirements for all Bachelor's Degrees (Music Core)**

A student must earn a grade of C or better in all departmental requirements for any degree in the Department of Music. All students wishing to pursue a music degree must audition and take the theory placement exam. Contact the department for current audition requirements.

Students enrolled in this department's major(s) or minor(s) may count credits in required applied courses toward their degrees beyond the normal maximum of 9 credits allowed in the College of Arts and Sciences. However, if students change major(s) or minor(s) or do not complete the requirements for the minor at the time of graduation, they may only count a maximum of 9 credits of the applied/occupational credits toward graduation.

Students are required to study acoustics as part of their music degree. Please see a Music Department advisor for specific course options.

**DEGREE: Bachelor of Music Education**  
**OPTIONS: K-12, Instrumental**  
**K-12, Vocal**

The Bachelor of Music Education (B.M.E.) is a diversified four- to five- year degree program of teaching, performance, and specialized studies in music. The goal of this degree is to prepare the student for certification to teach music in the public schools, and serves as a foundation for advanced study toward master's and doctoral degrees: M.M., M.M.E., D.M.A., or Ph.D in music education.

**REQUIREMENTS: K-12 – Instrumental**

**Basic Music and Performance**

MUS 141, Class Voice I .....	2
MUS 202, Introduction to Music Literature .....	3
MUS 211/212, Ear Training I/II .....	2
MUS 213/214, Music Theory I/II .....	6
MUS 230, 330, 430, Applied Music (instrumental) .....	14
MUS 273, Music Technology .....	3
MUS 302, History and Literature of Music to 1750 .....	3
MUS 303, History and Literature of Music After 1750 .....	3
MUS 311/312, Ear Training III/IV .....	2
MUS 313/314 Music Theory III/IV .....	6
MUS 315/316, Brass Technique I/II .....	2
MUS 317/318, Woodwind Technique I/II .....	2
MUS 319/320, String Technique I/II .....	2
MUS 323/324, Percussion Technique I/II .....	2
MUS 325, Beginning Conducting .....	1
MUS 326, Instrumental Conducting, Techniques, and Literature .....	3
MUS 413, Form and Analysis .....	3
MUS 415, Orchestration .....	3
MUS 440, Senior Recital .....	2

Music ensemble band, orchestra .....	7
<i>Total Basic Music and Performance Credits</i> .....	71
Students must pass the piano proficiency exam before student teaching.	
Students must be admitted into the Teacher Education Program before taking MUS 346 or MUS 349.	

**Professional Education Courses**

C EP 210, Educational Psychology .....	3
EDUC 471, Secondary Student Teaching .....	9
EDUC 482, Middle and High School Student Teaching Seminar .....	3
MUS 250, Introduction to Music Education.....	1
MUS 346, Elementary Music Methods .....	2
MUS 349, Secondary Music Methods .....	2
SPED 350, Introduction to Special Education in a Diverse Society.....	3
RDG 414, Content Area Literacy .....	3
<i>Total Professional Education</i> .....	26

**REQUIREMENTS: K-12 –Vocal**

**Basic Music and Performance**

MUS 202, Introduction to Music Literature .....	3
MUS 211/212, Ear Training I/II .....	2
MUS 213/214, Music Theory I/II .....	6
MUS 230, 330, 430 Applied Music (instrumental) .....	14
MUS 262/263, Diction I and II .....	4
MUS 302, History and Literature to 1750 .....	3
MUS 303, History and Literature After 1750 .....	3
MUS 311/312, Ear Training III/IV .....	2
MUS 313/314, Music Theory III/IV .....	6
MUS 321, Instrumental Techniques for Vocal Music Education Majors .....	2
MUS 325, Beginning Conducting .....	1
MUS 327, Choral Conducting, Techniques, and Literature .....	3
MUS 386, Applied Music Pedagogy and Literature I .....	2
MUS 413, Form and Analysis .....	3
MUS 415, Orchestration .....	3
MUS 440, Senior Recital .....	2
MUS 486, Applied Music Pedagogy and Literature I .....	2
Music Ensemble Choir .....	7
<i>Total Basic Music and Performance Credits</i> .....	71
Students must pass the piano proficiency exam before student teaching.	
Students must be admitted into the Teacher Education Program before taking MUS 346 or MUS 349.	

**Professional Education Courses**

C EP 210, Educational Psychology .....	3
EDUC 471, Secondary Student Teaching .....	9
EDUC 482, Middle and High School Student Teaching Seminar .....	3
MUS 250, Introduction to Music Education.....	1
MUS 346, Elementary Music Methods .....	2
MUS 349, Secondary Music Methods .....	2
SPED 350, Introduction to Special Education in a Diverse Society.....	3
RDG 414, Content Area Literacy .....	3
<i>Total Professional Education</i> .....	26

**DEGREE: Bachelor of Music**  
**OPTIONS: Instrumental Performance**  
**Music Business**  
**Piano Performance**  
**Vocal Performance**

The Bachelor of Music (B.M.) curriculum is designed to prepare students for performance careers and private studio teaching. In addition, the B.M. degree may be obtained in any of several fields that can lead to positions as professional entertainers or teachers at the college and university levels, or lead to music-related work in the business world.

**REQUIREMENTS – Instrumental Performance**

**Music Core**

MUS 230, Applied Music I* .....	4
MUS 230, 330, 430, Applied Music I/II/III (instrumental) .....	28
MUS 440, Senior Recital .....	2
Music Ensemble Band, Orchestra, Choir .....	8
<i>Total Music Core</i> .....	42



**Supportive Courses in Music**

MUS 202, Introduction to Music Literature .....	3
MUS 211/212, Ear Training I/II .....	2
MUS 213/214, Music Theory I/II .....	6
MUS 273, Music Technology .....	3
MUS 302, History and Literature to 1750 .....	3
MUS 303, History and Literature After 1750 .....	3
MUS 311/312, Ear Training III/IV .....	2
MUS 313/314, Music Theory III/IV .....	6
MUS 325, Beginning Conducting .....	1
MUS 413, Form and Analysis .....	3
MUS 415, Orchestration .....	3
Two 400 level music history courses .....	6
<i>Total Supportive Courses .....</i>	<i>41</i>

Note: Students must pass piano proficiency before completing the Senior Recital

**Departmental Requirements**

Electives .....	6
Foreign Language or academic electives .....	8
<i>Total Departmental Requirements .....</i>	<i>14</i>

\*MUS 145, 146, 147, 261, Functional Piano I, II, III, IV may be substituted for MUS 230 App. Piano

**REQUIREMENTS – Music Business****Music Core**

MUS 202, Introduction to Music Literature .....	3
MUS 211/212, Ear Training I/II .....	2
MUS 213/214, Music Theory I/II .....	6
MUS 230, Applied Music I 2 or* .....	2
MUS 230, 330, 430, Applied Music I/II/III (instrumental) .....	12
MUS 273, Music Technology .....	3
MUS 302, History and Literature to 1750 .....	3
MUS 303, History and Literature After 1750 .....	3
MUS 311/312, Ear Training III/IV .....	2
MUS 313/314, Music Theory III/IV .....	6
MUS 325, Beginning Conducting .....	1
MUS 339, Survey of Music Business .....	3
MUS 413, Form and Analysis .....	3
MUS 415, Orchestration .....	3
MUS 440, Senior Recital .....	2
MUS 441, Supervised Studio Teaching .....	2
Music Ensemble Band, Orchestra, Choir .....	8
<i>Total Music Core .....</i>	<i>64</i>

**Courses Outside Field**

ACCT 251, Management Accounting .....	3
ACCT 252, Financial Accounting .....	3
BUSA 111, Business in a Global Society .....	3
ECON 252G, Principles of Microeconomics .....	3
FIN 341, Financial Analysis and Markets .....	3
MGT 309, Human Behavior in Organizations .....	3
MUS 455, Music Business Internship.....	3
<i>Total Outside Field .....</i>	<i>21</i>

**Electives**

Two 400-level music history courses .....	6
Advance MKTG course .....	3
<i>Total Electives .....</i>	<i>9</i>

\*MUS 145, 146, 147, 261, Functional Piano I, II, III, IV may be substituted for MUS 230, Applied Music I.

Must pass piano proficiency before completing the Senior Recital.

**REQUIREMENTS – Piano Performance****Music Core**

MUS 230, 330, and 430, Applied Music .....	32
MUS 386, 486, Applied Music Pedagogy and Literature I, II .....	4
MUS 440, Senior Recital .....	2
MUS 470, Special Topics III.....	2
Music Ensemble Chamber or Large Ensemble .....	4
<i>Total Major Area .....</i>	<i>44</i>

**Supportive Courses in Music**

MUS 202, Introduction to Music Literature .....	3
MUS 211/212, Ear Training I/II .....	2
MUS 213/214, Music Theory I/II .....	6
MUS 273, Music Technology .....	3
MUS 302, History and Literature to 1750 .....	3
MUS 303, History and Literature After 1750 .....	3
MUS 311/312, Ear Training III/IV .....	2
MUS 313/314, Music Theory III/IV .....	6
MUS 325, Beginning Conducting .....	1
MUS 413, Form and Analysis .....	3
MUS 415, Orchestration .....	3
History course.....	3
<i>Total Supportive Courses .....</i>	<i>38</i>

**Departmental Requirements**

Electives .....	11
<i>Total Dept. Requirements .....</i>	<i>11</i>

**REQUIREMENTS – Vocal Performance****Music Core**

MUS 230, Applied Music I* .....	4
MUS 230, 330, 430, Applied Music I/II/III (voice) .....	28
MUS 262/263, Vocal Diction I/II .....	4
MUS 386, Applied Music Pedagogy and Literature I .....	2
MUS 440, Senior Recital .....	2
Music Ensemble Choir .....	8
<i>Total Music Credits .....</i>	<i>48</i>

**Supportive Courses in Music**

MUS 202, Introduction to Music Literature .....	3
MUS 211/212, Ear Training I/II .....	2
MUS 213/214, Music Theory I/II .....	6
MUS 273, Music Technology .....	3
MUS 302, History and Literature to 1750 .....	3
MUS 303, History and Literature After 1750 .....	3
MUS 311/312, Ear Training III/IV .....	2
MUS 313/314, Music Theory III/IV .....	6
MUS 325, Beginning Conducting .....	1
MUS 413, Form and Analysis .....	3
MUS 415, Orchestration .....	3
MUS 429, Opera and Music Drama .....	3
One 400-level music history course .....	3
<i>Total Supportive Courses .....</i>	<i>41</i>

**Electives**

One semester each of French and German .....	8
Electives .....	3
<i>Total Electives .....</i>	<i>11</i>

\*MUS 145, 146, 147, 261, Functional Piano I, II, III, IV may be substituted for MUS 230, Applied Piano.

Must pass piano proficiency before completing the Senior Recital.

**MINOR: Music**

A student may not earn both a bachelor's degree in the Department of Music and a minor in Music. The minor requires 24 credits.

MUS 202, Introduction to Music Literature .....	3
MUS 211, Ear Training I .....	1
MUS 212, Ear Training II .....	1
MUS 213, Music Theory I .....	3
MUS 214, Music Theory II .....	3
Nine upper division elective credits.....	9
Applied music.....	2
Ensemble or additional applied music.....	2

**RECITAL REQUIREMENTS FOR ALL MUSIC DEGREES****Bachelor of Music Education**

Senior recital is required. All music education majors will give a half recital (30 minutes of music) in their major performance area.

**Bachelor of Music**

All performance majors are required to give a half recital (30 minutes of music) in the junior year and a full recital (60 minutes of music) in the senior year. Students taking the Music Business option will give a half recital in their major performance area.

**Applied Music Requirements for All Music Degrees**

All B.M.E. and B.M. degrees require that at least two semesters of the applied music study be at the 430 level.

All students enrolling in applied music will audition and obtain permission from an applied teacher before enrolling for applied music credit.

Obtain further information by contacting the instructor or the music department.

**Other Music Requirements, Fees, and Regulations**

1. A Piano Proficiency Examination is required of all music majors. The proficiency examination may be satisfied in one of two ways: (a) pass the Piano Proficiency examination; (b) complete MUS 145, 146, 147, and 261 with a grade of C or better. Detailed requirements may be obtained from the Department of Music office. Students must pass the piano Proficiency Exam before presenting a Senior Recital. If there are extenuating circumstances that prevent a student from taking the piano proficiency exam, then the student should schedule a meeting with the Head of the Department of Music to discuss alternatives.
2. Qualitative grade-point average for graduation in music is 2.0 or higher. All grades in required music courses must be C or better.
3. A Music Theory Placement Examination is required of all entering freshman and transfer students. All theory and ear training requirements will be completed before the music education major is permitted to student teach.
4. An instrument rental fee is charged each semester for students using university instruments. Consult the music department concerning these fees.
5. All applied students pay an additional fee. Consult the music department concerning these fees. Applied lessons (MUS 230, 330, 430) can be taken for either 2 or 4 credits only.
6. Outside groups and individuals must have special permission to use music department facilities. Contact the music office for additional information.

**Music Ensembles**

All students majoring or minoring in Music, with the exception of piano performance majors, must enroll and participate in the ensemble appropriate for their particular degree plan. The student must enroll each and every semester he/she is considered full-time until the degree requirements are met. Any student receiving any kind of financial assistance through the Music Department must enroll each and every semester while he/she is attending NMSU.

- 1) Vocal/ Choral Music Education Majors should enroll for MUS 160 or 161 (or the upper-level equivalent).
- 2) Vocal Performance Majors should enroll for MUS 160 (or the upper-level equivalent). Additional enrollment in MUS 351 (Opera Workshop) is expected.
- 3) Wind and Percussion Music Education Majors should enroll for MUS 172 in the Fall semester and MUS 170 in the Spring semester (or the upper-level equivalents). Additional enrollment in MUS 163 (Jazz Ensemble) (or the upper-level equivalent) is strongly encouraged.
- 4) String Music Education and Performance Majors should enroll for MUS 151 (or the upper-level equivalent). Enrollment in MUS 150 (Las Cruces Symphony) will be in addition to 151.
- 5) Wind and Percussion Performance Majors should enroll for MUS 170 (or the upper-level equivalent) every Spring semester. Additional hours, to meet degree requirements, can be in MUS 163 or 172 (or the upper-level equivalents).
- 6) Music Business Majors and Music Minors should enroll for an ensemble associated with their applied principal instrument from the following list: MUS 151, 160, 161, 163, 170, 172 (or the upper-level equivalents). MUS 350 may be substituted with permission from the ensemble director and Department Head.

Any other requests for substitutions can only be approved by the Department Head, in consultation with the ensemble director(s) and applied teacher.

**Music Scholarships and Awards**

A limited number of performance stipends and other music scholarships are available to any full-time registered student and are awarded through the department. Amounts awarded will reflect excellence and achievement in

performance, determined by audition—either in person or by a recording—and references. Participation in the Marching Band (fall semester), and Symphonic Winds (spring semester) is required for a band stipend. For an orchestra stipend, participation in the University Orchestra is required each semester an award is made. For a vocal stipend, participation in the University Singers is required each semester an award is made. For a music scholarship, applied music study and one or more of the following may be required: participation in one of the music ensembles, as accompanist or recital appearances. Students must have a 2.0 grade-point average to retain a band stipend, and a 2.5 grade-point average to retain a music scholarship; music scholarship students must have a 3.0 grade point average in their applied music study. Specific endowed Scholarships each have independent criteria.

For more information on performance stipends and other music scholarships and awards, write to: Academic Department Head, Department of Music, P O. Box 30001, MSC 3 F, Las Cruces, New Mexico 88003-8001 or e-mail music@nmsu.edu.

## PHILOSOPHY

**Professor Danny Scoccia, department head**

**Professors** Cleveland, Scoccia; **Associate Professor** Vessel; **Assistant Professors** Keleher, Walker; **College Assistant Professor** Noonan  
(575) 646-4616; 646-2358 (fax)  
<http://www.nmsu.edu/~philos/>

**DEGREE:** Bachelor of Arts

**MAJOR:** Philosophy

**MINORS:** Ethics  
Philosophy

A major in philosophy serves not only as preparation for further graduate study in philosophy but also as an area of concentration in a liberal arts program. A philosophy major is appropriate for students planning to attend medical school as well as for those students interested in a career that requires critical reading and argument analysis. Such careers include business, theology and above all, law.

While the course requirements for the major should meet the ends of the liberal arts student, those students interested in graduate study in philosophy or in a career in law are encouraged to seek advice from a faculty advisor as early in their career as possible.

A minor program in philosophy requiring 18 hours of course work is also offered as well as a minor in Ethics. For more information visit the Department of Philosophy's web page at [www.nmsu.edu/~philos/](http://www.nmsu.edu/~philos/).

**DEGREE:** Bachelor of Arts

**MAJOR:** Philosophy

**Departmental Requirements**

PHIL 201G, Introduction to Philosophy, or PHIL 101G, The Art of Wondering .....3  
PHIL 312, Formal Logic .....3  
PHIL 341, Ancient Philosophy, or PHIL 344, Modern Philosophy .....3

**Three credits in ethics from the following:**

PHIL 320, Social and Political Philosophy; PHIL 373, Ethical Theory; PHIL 376, Philosophy of Law .....3

**Three credits in applied ethics from the following:**

PHIL 302, Business Ethics; PHIL 321, Biomedical Ethics; PHIL 322, Environmental Ethics; PHIL 323V, Engineering Ethics; PHIL 324, Cyberethics; PHIL 327, Ethics and Sports; PHIL 328, Applied Ethics; PHIL 329, Sexual Ethics; PHIL 330, Ethics and Biomedical Research; PHIL 332 Ethics and Global Poverty .....3

**Six credits from the following core:**

PHIL 315, Philosophy of Language; PHIL 346, Philosophy of Mind; PHIL 350, Epistemology; PHIL 351, Philosophy of Science; PHIL 380, Metaphysics .....6

**Three credits in philosophical writing:**

PHIL 448, Writing Philosophy .....3

**At least 12 additional credits in philosophy, 6 of which are courses numbered**

300 or above.

**Additional credit may include:**

HON 225G, 226G, 227G or 228G ..... 3

**Second language requirement:**

Students are required to fulfill a Second Language (212 for Spanish, French, German, or Japanese, or 214 for Portuguese or Spanish for Heritage speakers, or the equivalent for any other language that is offered).

**Electives:**

Sufficient to bring total credits to 128, including 48 upper-division.

**MINOR: Ethics**

A student who earns a B.A. in Philosophy may not also earn a minor in Ethics.

PHIL 101G, The Art of Wondering, or PHIL 201G, Introduction to Philosophy ..... 3

PHIL 211G, Informal Logic or PHIL 312, Formal Logic..... 3

PHIL 373, Ethical Theory ..... 3

Three of the following courses, of which at least two must be upper division:

C J 425, Issues in Ethics, Law and Criminal Justice; HON 225G, History of Ethics; HON 304V, Dilemmas of War and Peace; HON 306V, Science, Ethics and Society; JOUR 377, Mass Media Ethics; PHIL 302, Business Ethics; 321 Biomedical Ethics; PHIL 322, Environmental Ethics; PHIL 323V, Engineering Ethics; PHIL 324, Cyberethics; PHIL 327, Ethics and Sports; PHIL 328, Applied Ethics; PHIL 329, Sexual Ethics; PHIL 330, Ethics and Biomedical Research; PHIL 332, Ethics and Global Poverty; PHIL 381, Human Nature and the Good Life; and SUR 401, Ethics and Professionalism in Surveying and Mapping. Students may earn up to 3 credits in this category from special topics or Honors courses approved by the head of the Department of Philosophy ..... 9

**MINOR: Philosophy**

A student who earns a B.A. in Philosophy may not also earn a minor in Philosophy.

PHIL 101G, The Art of Wondering, or PHIL 201G, Introduction to Philosophy ..... 3

PHIL 223G, Ethics, or PHIL 328, Applied Ethics, or PHIL 373, Ethical Theory..... 3

PHIL 211G, Informal Logic, or PHIL 312, Formal Logic..... 3

Nine additional Philosophy credits at the 300 or above level. .... 9

## PHYSICS

**Professor Stefan Zollner, department head**

*Professor* Matthias Burkardt, undergraduate program head

*Associate Professor* Vassilios Papavassiliou, graduate program head

*Professor* Heinz Nakotte, engineering physics program head

*Professors* Armstrong (emeritus), Burleson (emeritus), Matthias Burkardt, Daw (emeritus), Gibbs, Goedecke (emeritus), Ingraham (emeritus), Kyle (emeritus), Liefeld (emeritus), Nakotte, Ni, Pate, Zollner; *Associate Professors* Engelhardt, Hearn, Kanim, Kiefer, Papavassiliou, Stromberg (emeritus), Urquidí, Vasiliev; *College Associate Professors* Michaela Burkardt, DeAntonio

(575) 646-3831

<http://physics.nmsu.edu/>

**DEGREE: Bachelor of Arts**

**MAJOR: Physics**

**DEGREE: Bachelor of Science**

**MAJOR: Physics**

**CONCENTRATION: Applied Physics**

**CONCENTRATION: Computational Physics**

**CONCENTRATION: Geophysics**

**CONCENTRATION: Applied Optics**

**CONCENTRATION: Materials Science**

**DEGREE: Bachelor of Science in Engineering Physics**

**MINOR: Physics**

**DESIGNATED MINORS:**

**Computational Physics**

**Geophysics**

**Physics/Materials**

**Physics/Optics**

A bachelor's degree in physics provides the basis for careers in industry, teaching, the military, government, or for study toward advanced degrees in physics or engineering. It should also provide the skills that recipients of physics degrees have listed as among the most important in obtaining their current positions, including problem solving ability, computer skills, mathematical skills, and laboratory skills, as well as knowledge of physics.

The Physics Department requires Physics B.A. and Physics B.S. students to have some knowledge of a foreign language. To meet this requirement, the student must do one of the following:

- Complete the introductory foreign language course sequence, 111 and 112, for any language taught at NMSU. Students should enter the sequence at their proficiency level.
- Challenge the 112 level of any foreign language taught at NMSU.
- Obtain college certification of completion of two years of one foreign language at the high school level with a grade of C or higher in the second year level.
- Obtain, from the head of the Department of Languages and Linguistics, certification of a working knowledge of a foreign language if such language is not taught at NMSU.
- Obtain certification of a working knowledge of a Native American language from the American Indian program director.
- Successfully complete a regular university course taught in a language other than English. A student can receive credit only once for the same course taught in two languages.
- Pass a three-credit, upper-division course (numbered 300 or above) taught in a foreign language by the department of Languages and Linguistics.
- Pass C D 375, American Sign Language II with a grade of C or better.
- In the case of a foreign student who is required to take the TOEFL exam, the dean will automatically waive the foreign language requirement.

Further information about the department may be found on the web at [www.physics.nmsu.edu](http://www.physics.nmsu.edu).

**DEGREE: Bachelor of Arts**

**MAJOR: Physics**

The curriculum for the Bachelor of Arts degree is designed for students who would like to have a firm foundation in physics combined with study in another area and greater flexibility in choosing elective courses. The program requires a minor in a second field of study chosen by the student in consultation with an advisor.

**Nondepartmental Requirements (May not be taken S/U and must earn a grade of C or better.)**

MATH 191G, MATH 192G, MATH 291G, Calculus and Analytic Geometry I, II, III; and MATH 392, Introduction to Ordinary Differential Equations

Minor in a second field from another department (18 credits)

**Department Requirements**

PHYS 150, Elementary Computational Physics..... 3

PHYS 213/213L, Mechanics, and Experimental Mechanics ..... 4

PHYS 214/214L, Electricity and Magnetism, and Experimental Electricity and Magnetism..... 4

PHYS 217/217L, Heat, Light, and Sound, and Experimental Heat, Light, and Sound..... 4

PHYS 315 Modern Physics ..... 3

PHYS 315L, Experimental Modern Physics ..... 3

PHYS 395, Intermediate Mathematical Methods of Physics..... 3

PHYS 451, Intermediate Mechanics I ..... 3

PHYS 454, Intermediate Modern Physics I..... 3

PHYS 455, Intermediate Modern Physics II..... 3

PHYS 461, Intermediate Electricity and Magnetism I ..... 3

PHYS 462, Intermediate Electricity and Magnetism II ..... 3

PHYS 480, Thermodynamics ..... 3

**Electives:** Sufficient to bring total number of credits to 128, including 48 upper-division.

**Suggested Minors for the Bachelor of Arts Physics Major**

**Basic Science Minor**—A minor in a related scientific field broadens the overall knowledge of the student majoring in physics. Some departments which offer such minors are astronomy, chemistry, computer science, geology, and mathematics.

**Prehealth Minor**—Students wishing to attend a medical or dental post-graduate school are strongly encouraged to obtain a minor in a life science field such as biochemistry, biology, human biology, microbiology, and molecular biology.

**Prelaw Minor**—Students wishing to attend a post-graduate law school should obtain a minor in a law-related field, such as government, accounting, finance, international business, global political economy, or a Supplementary Major in Law and Society (24 credits).

#### DEGREE: Bachelor of Science

##### MAJOR: Physics

A Bachelor of Science degree in physics at NMSU prepares a student well for graduate study in physics, geophysics, or engineering or for a variety of careers in research and teaching. Specialization in one of the emphasis areas should increase employability at the B.S. level.

#### Nondepartmental Requirements (May not be taken S/U and must earn a grade of C or better)

MATH 191G, MATH 192G, MATH 291G, Calculus and Analytic Geometry I, II, III; MATH 392, Introduction to Ordinary Differential Equations.

CHEM 115, CHEM 116, Principles of Chemistry I, II, or higher-level courses.

#### Departmental Requirements

PHYS 150, Elementary Computational Physics.....	3
PHYS 213/213L, Mechanics, and Experimental Mechanics.....	4
PHYS 214/214L, Electricity and Magnetism, and Experimental Electricity and Magnetism.....	4
PHYS 217/217L, Heat, Light, and Sound, and Experimental Heat, Light, and Sound.....	4
PHYS 315, Modern Physics.....	3
PHYS 315L, Experimental Modern Physics.....	3
PHYS 395, Intermediate Mathematical Methods of Physics.....	3
PHYS 451, Intermediate Mechanics I.....	3
PHYS 454, Intermediate Modern Physics I.....	3
PHYS 455, Intermediate Modern Physics II.....	3
PHYS 461, Intermediate Electricity and Magnetism I.....	3
PHYS 462, Intermediate Electricity and Magnetism II.....	3
PHYS 480, Thermodynamics.....	3
Advanced laboratory (PHYS 471 or 475).....	2
Six additional credits in physics or geophysics numbered 300 or above.....	6

**Electives:** Sufficient to bring total number of credits to at least 128, including 48 upper-division.

Students who plan to pursue graduate study in physics or geophysics are strongly advised to take one or more senior-level courses in optics, nuclear physics, atmospheric physics, condensed matter physics, geophysics, or computational physics.

Students who plan to seek employment at the B.S. level are advised to take one of the following concentration area curricula in addition to the general and departmental requirements. The program of study should be chosen by the student in consultation with an advisor. Some recommended courses are listed below.

#### CONCENTRATION: Applied Physics

The program of study in applied physics is planned by the student and the physics advisor and includes classes in electrical and mechanical engineering along with classes in computer science.

#### CONCENTRATION: Applied Optics

PHYS 473, Introduction to Optics.....	3
PHYS 478, Optical Sources, Detectors, and Radiometry.....	3
PHYS 479, Lasers and Applications.....	3

#### CONCENTRATION: Materials Science

CH E 361, Engineering Materials.....	3
CHEM 461, Polymers, their Composites and Mechanical Behavior.....	3
PHYS 475, Advanced Physics Laboratory.....	3
PHYS 488, Condensed Matter Physics.....	3
PHYS 489, Introduction to Modern Materials.....	3

#### CONCENTRATION: Computational Physics

C S 157, Topics in Software Programming and Applications, or C S 167, C Programming.....	3
C S 171G, Introduction to Computer Science.....	4

MATH 279, Introduction to Finite Mathematics.....	3
PHYS 476, Computational Physics.....	3

#### CONCENTRATION: Geophysics

GEOL 111G, Survey of Geology.....	4
GPHY 340V, Planet Earth.....	3
GPHY 450, Selected Topics.....	3

Geophysics courses are offered by the Department of Physics and are listed under "Geophysics" in the course description chapter of this catalog.

#### DEGREE: Bachelor of Science in Engineering Physics

The Bachelor of Science in Engineering Physics is a joint degree program of the Department of Physics and the College of Engineering. This degree is ideal preparation for technical careers in high-tech industries, research laboratories, and the public sector. It also provides an excellent preparation for graduate studies in physics or engineering. A full description of the program requirements can be found in the College of Engineering section of this catalog.

#### MINOR: Physics

A student cannot earn a B.A. or a B.S. in Physics and a minor in Physics.

PHYS 213, Mechanics, or PHYS 215G, Engineering Physics I.....	3
PHYS 214, Electricity and Magnetism, or PHYS 216G, Engineering Physics II.....	3
PHYS 217, Heat, Light and Sound.....	3
PHYS 315, Modern Physics.....	3
Six additional Physics credits, not including PHYS 350, Special Topics; PHYS 400, Undergraduate Research, PHYS 450, Selected Topics; or any Physics General Education courses.....	6

#### Designated Minors

In addition to the regular minor, the department offers several special designated minors, listed under "Academic Majors and Minors" in the "General Information" chapter. Any of these, together with an appropriate degree in another field, should give the student a background that is adequate to pursue graduate study in physics, along with the skills that physics bachelor's degree recipients have rated as among the most important in obtaining their current positions. Further information may be obtained from the department or its web page at [www.physics.nmsu.edu](http://www.physics.nmsu.edu).

A student cannot earn a B.A. or B.S. in Physics and any designated minor.

To earn a designated minor, students must pass:

PHYS 213, Mechanics, or PHYS 215G, Engineering Physics I.....	3
PHYS 214, Electricity and Magnetism, or PHYS 216G, Engineering Physics II.....	3
PHYS 217, Heat, Light and Sound.....	3
PHYS 315, Modern Physics.....	3
Six credits as listed below for each designated minor.....	6

**Computational Physics:** PHYS 395, Intermediate Mathematical Methods of Physics, and PHYS 476, Computational Physics.

**Geophysics:** GPHY 340V, Planet Earth, and GPHY 450, Selected Topics

**Materials:** PHYS 488, Condensed Matter Physics; and PHYS 489, Introduction to Modern Materials

**Optics:** PHYS 473, Introduction to Optics, and one of the following: PHYS 478, Optical Sources, Detectors, and Radiometry; PHYS 479, Lasers and Applications

## PSYCHOLOGY

#### Associate Professor Dominic A. Simon, department head

**Professors** Cowie, Thompson, Trafimow; **Associate Professors** Guynn, Ketelaar, Kroger, Madson, Rice; **Assistant Professors** Dolgov, Marks, MacDonald; **Affiliated** Caplan, Ogden; **Emeriti** Johnston, McDonald, Stephan

(575) 646-2502

<http://www.psych.nmsu.edu/>

#### DEGREE: Bachelor of Arts



**MAJOR: Psychology****MINOR: Psychology**

Students may take a major in psychology either as an area of emphasis in a liberal arts program or in preparation for further graduate education leading to professional careers in psychology. A major in psychology may be appropriate for the liberal arts student who wishes to pursue a career involving extensive social interaction and requiring solutions to people-related problems. Such careers include law, business, parenting, government, education, and management. Professional careers in psychology generally require some postbaccalaureate education. These careers include provision of clinical and counseling services, conducting research, applying research findings in industrial or government settings, and doing teaching and research in colleges and universities. Students planning to apply to graduate school are encouraged to take PSY 310, Experimental Methods I, no later than the Spring semester of their junior year.

The requirements listed below should provide an adequate exposure to psychology for the liberal arts student and a basic foundation for students seeking a career in psychology. While all majors should consult with the department's advising center and with a faculty advisor, students wishing to prepare for a professional career in psychology are especially encouraged to work closely with an advisor, as early as possible. The advising center maintains several model programs that help prepare majors to fulfill various career goals.

**DEGREE: Bachelor of Arts****MAJOR: Psychology****General Requirements**

Students must receive a C or better in courses used to satisfy the departmental and nondepartmental requirements of the psychology major.

**Departmental Requirements**

PSY 201G, Introduction to Psychology, or  
HON 203G, Understanding the Science of Human Behavior.....3  
Three credits from the following core:

PSY 302, Abnormal Psychology; PSY 350, Developmental Psychology: Conception through Childhood; PSY 440, History and Systems of Psychology.....3

Eight credits in research methods:

PSY 310 (prerequisite of PSY 201G, and either STAT 251 or 271 or A ST 311, Statistical Applications; and PSY 311, Advanced Research Seminar ..... 8

The following requirements are to be met after the student has completed PSY 310 (which has prerequisites of PSY 201G, and either STAT 251 or 271 or A ST 311:

At least 3 credits in Basic Mechanisms from the following:

PSY 301, Introduction to Psycholinguistics; PSY 375, Introduction to Biopsychology; PSY 376, Evolutionary Psychology; PSY 380, Perception.....3-4

At least 3 credits in Acquisition and Use of Knowledge from the following:

PSY 320, Learning; PSY 340, Cognitive Psychology; PSY 383, Memory; PSY 442, Thinking ..... 3-4

At least 3 credits in Understanding Behavior from the following:

PSY 315, Emotion and Motivation; PSY 317, Social Psychology; PSY 321, Psychology of Personality; PSY 358, Individual and Group Differences ..... 3

Additional electives to bring total credits in psychology to at least 34, with at least 24 of those 34 credits being upper division.

**Nondepartmental Requirements**

STAT 251 or 271 or A ST 311 ..... 3

Three credits from any Philosophy course 300-level or above.....3

At least three credits of introductory biology. A course that includes a laboratory is highly recommended:

BIOL 101G, Human Biology, and BIOL 101L, Human Biology Laboratory, or BIOL 111G, Natural History of Life, and BIOL 111L, Natural History of Life Laboratory..... 3-4

BIOL 211G and 211L are also recommended (Prerequisite: CHEM 110G or CHEM 111G)

**Second Language**

Students seeking the B.A. in Psychology must meet the second language requirement by completing one of the following three skills requirements:

- **Option 1:** Traditional Language track (student must pass the second-language requirement as described in item 3 under "College Degree Requirements" under College of Arts & Sciences)
- **Option 2:** Computer science track (the student must complete the following courses:

C S 171, Introduction to Algorithmic Computation

C S 272, Introduction to Data Structures

C S 271, Introduction to Object-Oriented Programming

OR the student must complete MATH 190 and one of the following three courses: (C S 167 or C S 177 or 187)

- **Option 3:** Math/Statistics Track (the student must complete the following courses:

MATH 190, College Algebra

MATH 191, Calculus & Analytic Geometry I

MATH 192, Calculus & Analytic Geometry II

STAT 251, Statistics for Business and the Behavioral Sciences, or

STAT 271, Statistics for Psychological Science

**MINOR: Psychology**

A student must pass at least 18 credits in Psychology courses with grades of C or higher, and at least 9 of those credits must be upper division. A student may not earn both a B.A. in Psychology and a minor in Psychology.

## SOCIOLOGY

**Department Head to be determined**

**Professors** Loustaunau (Emeritus), Williams (Emeritus); **Assistant Professors** Newby, Rice, Steinkopf-Rice, Way, Wosick; **College Associate Professors** Hamilton, Hoffman; **College Instructor** Hovey; **Adjunct Assistant Professors** Giron, Pelak

(575) 646-3448; FAX (575) 646-7601

<http://artsci.nmsu.edu/sociology/>

**DEGREE: Bachelor of Arts****MAJOR: Sociology****MINORS: Sociology****Contemporary Social Studies****MAJOR: Sociology**

The undergraduate major in sociology is broad in scope. It prepares the student for a variety of public and private sector employment opportunities including market research, personnel management, human relations, law enforcement, and health services. Successful students often use their major as preprofessional preparation for advanced degrees in law, business, education, counseling, and other social science based careers. Courses are offered both online and in the classroom.

**Departmental Requirements**

SOC 101G, Introductory Sociology.....3

SOC 350, Sociological Foundations ..... 3

SOC 351, Sociological Theory ..... 3

SOC 352, Social Research: Methods.....3

SOC 353, Social Research: Analysis.....3

SOC 401, Introduction to Sociological Practice ..... 3

Electives in sociology to bring total credits in major to 33, including 24 upper-division of which 6 credits must be 400 level. Directed readings will not satisfy this requirement, however, a maximum of six credits of Directed Readings (SOC 449 or SOC 449H) is allowed.

Criminal Justice/Sociology double majors may be permitted to substitute C J 300 for SOC 352 and C J 301 for SOC 353. Government/Sociology double majors may be permitted to substitute GOVT 300 for SOC 352 upon approval of appropriate substitution/waiver forms. Other substitution/waivers for courses may be available upon consultation with the sociology undergraduate advisor. In all cases, the total number of sociology credits (courses with SOC prefix) must be a minimum of 33.

**Second Language**

A second language is not required.

**MINOR: Sociology**

Students who earn a B.A. in Sociology may not also earn a minor in Sociology. Students earning the minor must pass 18 credits with grades of C or higher. Nine of the credits must be upper division. Students may count S grades only in

courses in which all grades are S/U. Students may substitute an upper division social research methods course for the required SOC 352 from the Departments of Communication Studies, Criminal Justice, Government, or Psychology. However, students making this substitution must still pass 18 total credits in Sociology in order to earn this minor. Students may not count SOC 249 or SOC 449 towards the minor.

SOC 101G, Introductory Sociology.....	3
SOC 351, Sociological Theory.....	3
SOC 352, Social Research: Methods.....	3
Nine additional Sociology credits, of which at least 6 are upper division.....	9

**MINOR: Contemporary Social Studies**

See requirements for this minor under Department of History.

## THEATRE ARTS

**Professor Tom Smith, department head/managing director**

*Professor* Smith; *Associate Professor* Storm; *Assistant Professor* Chenard; *Professional Staff* J. Billings, Brunson, Hereford, McMahon, Wise; *College Associate Professor* C. Billings

(575) 646-4517

<http://theatre.nmsu.edu/nmsu/>

**DEGREE: Bachelor of Arts**

**MAJOR: Theatre Arts**

**EMPHASIS: Musical Theatre**

**MINOR: Theatre Arts**

A minimum of 54 credits in theatre arts is required for the major. With strong emphases in acting, directing, musical theatre and design/technical theatre, the program prepares students for graduate study or to work in the profession. Students gain practical experience in all phases of theatrical production. The faculty is augmented by nationally-renowned theatre artists-in-residence.

Students preparing to teach in the public schools may qualify for certification by completing the Bachelor of Science in Education degree with theatre arts as a teaching field. (See curricula in the "College of Education" section.)

Theatre majors will be required to complete a foreign language at the level of 112 or greater, or to complete 2 years of high school foreign language.

Students enrolled in this department's major or minor may count credits in required applied courses toward their degrees beyond the normal maximum of 9 credits allowed in the College of Arts and Sciences. However, if students change the major or minor or do not complete the requirements for the minor at the time of graduation, they may only count a maximum of 9 credits of the applied/occupational credits toward graduation.

**DEGREE: Bachelor of Arts**

**MAJOR: Theatre Arts**

**Departmental Requirements**

THTR 110, Acting I.....	3
THTR 130, The Art of Theatre.....	3
THTR 141 and 141L, Introduction to Stagecraft and Lab.....	3/1
THTR 142 and 142L, Introduction to Costume Crafts and Lab.....	3/1
THTR 149, Running Crew I.....	2
THTR 203, Theatre History I.....	3
THTR 204, Theatre History II.....	3
THTR 249, Running Crew II.....	1
THTR 345, Costume Practicum.....	1
THTR 346, Scenic Practicum.....	1
THTR 347, Lighting Practicum.....	1
THTR 348, Running Crew III.....	1
THTR 349, Running Crew IV.....	1
THTR 395, Directing I.....	3
THTR 396, Theatre Management.....	3
THTR 439, Senior Seminar.....	2
Select one from the following: THTR 321V, Modern European Drama or THTR 323, American Drama.....	3

Select one from the following: THTR 307V, Costume History; THTR 321V, Modern European Drama; THTR 323, American Drama; THTR 329, Studies in Drama; THTR 408, Shakespeare I; THTR 409, Shakespeare II (course from this category must not duplicate selection above).....

Select one from the following: THTR 352, Costume Design, THTR 353, Scene Design; or THTR 355, Lighting Design.....

THTR elective courses.....

Electives: Sufficient to bring total to 128, including 48 upper-division.

**DEGREE: Bachelor of Arts**

**MAJOR: Theatre Arts**

**EMPHASIS: Musical Theatre**

The musical theatre emphasis is designed to provide students with training in musical theatre performance, including singing, dancing and acting.

**Departmental Requirements**

All courses required for the Theatre Arts major must be met, except for the requirement of 9 THTR elective courses. Instead, students must take the following courses:

THTR 317, Musical Theatre.....

MUS 101G, An Introduction to Music.....

DANC 101G, Dance Appreciation.....

DANC 451V, World Dance.....

Two or more credits from DANC 124, Jazz Technique I; DANC 125, Introduction to Ballroom Dance; DANC 127, Tap Dance I; DANC 203, Performance and Production I; DANC 224, Jazz Technique II; DANC 225, Ballroom Dance I; DANC 227, Tap Dance II; DANC 324, Jazz Technique III; DANC 424, Jazz Technique IV

Four or more credits from MUS 110, Fundamentals of Music; MUS 130, Applied Music (Voice); MUS 141, Class Voice I; MUS 145, Functional Piano I; MUS 351, Opera Workshop

**MINOR: Theatre Arts**

The Department of Theatre Arts has one minor in Theatre Arts. Students must pass a minimum of 9 lower division credits and 9 upper division THTR credits with grades of C or higher to earn the minor. A student cannot earn both a B.A. in Theatre Arts and a minor in Theatre Arts.

## WOMEN'S STUDIES

**Department Head to be determined**

*Assistant Professors* M. Jonet, M. Hamzeh; *College Associate Professor* M. Benanti; *Adjunct Faculty* S. Judson, S. Flores; *Affiliated Faculty* N. Baker, C. Bejarano, J. Crowley, D. Greene, J. Haynes Writer, A. Joseph, J. Steinkopf-Rice, M. Torres, P. Wojahn, M. Wolf, K. Wosick, E. Schirmer  
(575) 646-3448; (575) 646-7601 (fax)  
<http://www.nmsu.edu/~wstudies/>

**DEGREE: Bachelor of Arts**

**MAJOR: Women's Studies**

**MINOR: Women's Studies**

Women's Studies focuses on women, gender and other diversity, multicultural learning, critical thinking, leadership development, advocacy for women's and community issues, and the integration of theory and practice. Students engage in community service through involvement in local organizations and advocacy programs. The benefits of a Women's Studies degree include strong critical-thinking and analytical skills developed in a student-centered environment that encourages independent thought; the experience of applying what students learn in the classroom to the world beyond, through practice; and insights into questions of gender, diversity, and power central to any workplace. Graduates of Women's Studies find successful careers in a range of fields including the arts, business, education, health care, media, politics and law, social work, psychology, and sports.

The Women's Studies program offers a major and a minor, described below.

**DEGREE: Bachelor of Arts****MAJOR: Women's Studies**

Degree requirements for the major include 12 credit hours of required Women's Studies courses, including one of either "W S 201G, Introduction to Women's Studies" or "W S 202, Representing Women Across Cultures" and the Women's Studies Practicum, a project-based seminar; 6 credit hours of Women's Studies electives; and 18 credit hours from a number of cross-listed courses offered both by Women's Studies and by other programs/departments. The total credit hour requirement for the major is 36 credit hours with 21 hours at the upper division level. All requirements must be completed with a grade of "C" or higher.

**Required core courses (9 credit hours):**

W S 201G, Introduction to Women's Studies, or W S 202G, Representing Women Across Cultures .....	3
W S 455, Feminist Research Methods.....	3
W S 471, Seminar in Feminist Theory.....	3

**Electives from the following (6 credit hours):**

W S 401, Women & Immigration .....	3
W S 402, Transnational Feminisms.....	3
W S 450, Special Topics .....	3
W S 453, Women and Politics.....	3
W S 454, Women Crossing Borders.....	3
W S 465, Sex, Gender and the Body.....	3

**Electives from upper division W S and cross-listed courses (18 credit hours):****MINOR: Women's Studies**

A minor in Women's Studies consists of 18 credit hours of approved course work in Women's Studies of which at least 12 are upper division (300 level or above).

Required core course (3 credit hours): W S 201G, Introduction to Women's Studies or W S 202G, Representing Women Across Cultures..... 3

Select one of the following (3 credit hours): W S 402, Transnational Feminisms; W S 455, Feminist Research Methods; or W S 471, Seminar in Feminist Theory..... 3

Twelve additional credits from the Women's Studies and cross-listed curriculum, of which at least 9 credits are upper division ..... 12

Note: A student may not earn a bachelor's degree in Women's Studies and also earn a minor in Women's Studies.

# COLLEGE of BUSINESS

Dean • *Garrey Carruthers*

Associate Dean • *Kathleen Brook*

Associate Dean • *Kevin Boberg*

Assistant Dean • *Andrea Tawney*

Academic Advisor • *Justine Adkisson*

Academic Advisor • *Debra Cardinali*

---

## Bachelor of Accountancy

## Bachelor of Arts in Economics

## Bachelor of Business Administration

Majors in Economics, Finance, General Business, Information Systems, International Business, Management, and Marketing

## Associate in Prebusiness

---

### Mission of the College of Business

The College of Business serves the educational needs of New Mexico's diverse population by providing high quality education, conducting research, and participating in service and outreach within the global community.

### Requirements for Bachelor's Degrees

- Successful completion of requirements as listed under General Education Common Core, Viewing a Wider World, and University Graduation requirements.
- Successful completion of College of Business Requirements: Foundation Requirements, Business Core (lower and upper division). (This requirement does not apply to those students pursuing the Bachelor of Arts in Economics. For this degree, see the Economics and International Business section below).
- A minimum cumulative grade point average (GPA) of 2.0 in; all courses taken at NMSU; all courses taken in the College of Business used to meet specific college course requirements, and all courses in the College used to meet specific major course requirements.
- A minimum of 128 credits of approved courses and a minimum of 48 upper division credits.
- Of the last 36 credits, 30 must be completed at NMSU; of these credits, a minimum of 21 credits must be in upper-division courses, including a minimum of 12 upper-division credits in the major.
- For transfer students, a minimum of 50% of business credits required for a bachelor of accountancy or bachelor of business administration degree or 18 business credits required for a bachelor of arts in economics degree must be completed in the College of Business and a minimum of 12 credits required in the major must be completed in the College.

The only courses that may be taken on an S/U option by students in the College of Business are those designated S/U only, general electives outside the college, and up to 9 credits of HON courses used to fulfill General Education requirements.

All students in the College of Business are advised through the college's Advising Center until they have completed all lower division (100-299) requirements after which they are assigned to a faculty advisor in their academic major.

Lower-division requirements must be completed before the student is permitted to take upper-division courses (numbered 300 or above) offered by the College of Business.

All students must demonstrate basic skills proficiency in English and mathematics before enrolling in upper division courses (numbered 300 or above).

### General Education Common Core

The College of Business abides by the university's New Mexico General Education Common Core requirements as outlined in this catalog. To minimize the number of courses taken, students should first review the college requirements listed below. Students who follow the recommendations below will satisfy the university's general education requirements.

### Area I: Communications (10 credits)

- A. ENGL 111G, Rhetoric and Composition or 111H, Rhetoric and Comp - Honors or SPCD 111, Advanced ESL Composition..... 4
- B. Business students should select ENGL 203G, Business and Professional Communication..... 3
- C. COMM 253G, Public Speaking or COMM 265G, Principles of Human Communication, or HON 265G, Principles of Human Communication - Honors or AXED 201, Effective Leadership and Communication in Agricultural Organizations..... 3
- Grades of C or better are required in each of the courses in Area I.

### Area II: Mathematics (3 credits)

- A ST 251G or STAT 251G, Statistics for Business and the Behavioral Sciences, or MATH 121G, College Algebra or MATH 142G, Calculus for the Biological and Management Sciences I..... 3

### Area III: Laboratory Sciences (8 credits)

- Complete two courses with labs from the approved New Mexico General Education Common Core List..... 8

### Area IV: Social and Behavioral Sciences (6-9 credits)

Business students should select ECON 251G, Principles of Macroeconomics, and ECON 252G, Principles of Microeconomics and up to one additional course from the approved list. PSY 201G, Introduction to Psychology, is strongly recommended for business students.

### Area V: Humanities and Fine Arts (6-9 credits)

Business students should select two or three courses from the approved list so that total credits from Areas IV and V are 15.

## College of Business

### Foundation Requirements ( up to 15 credits depending upon mathematics placement)

- A ST 251G, or STAT 251G, Statistics for Business and the Behavioral Sciences, or A ST 311, Statistical Applications..... 3
- ENGL 203, Business and Professional Communication..... 3
- MATH 120, Intermediate Algebra (a grade of C or better is required to advance to the next level course)..... 3
- MATH 121G, College Algebra (a grade of C or better is required to advance to next level course)..... 3
- MATH 142G, Calculus for the Biological and Management Sciences I..... 3
- Majors in economics and international business must have a grade of C or better in ECON 251G, ECON 252G, A ST 251G or A ST 311 and MATH 142G.

### Accreditation

New Mexico State University has been accredited since 1926 by the Higher Learning Commission of the North Central Association of Colleges and Secondary Schools as a degree-granting institution. The university was accredited in 1954 by the American Association of University Women.

The baccalaureate and graduate degree programs in business and accounting offered in the College of Business are accredited by AACSB International—The Association to Advance Collegiate Schools of Business.



**Business Core, lower division (18 credits)**

ACCT 251, Management Accounting <sup>2</sup> and ACCT 252, Financial Accounting <sup>1</sup> .....	6
BCIS 110, Introduction to Computerized Information Systems, or C S 110.....	3
BUSA 111, Business in a Global Society .....	3
ECON 251G/252G, Principles of Macroeconomics, Microeconomics <sup>1</sup> .....	6

<sup>1</sup>Not recommended for freshman year.

**Business Core, upper division (27 credits)**

BCIS 338, Business Information Systems I (all majors except IS), or BCIS 350, Information Systems Analysis and Design (IS majors) .....	3
BCIS 485, Enterprise Resource Planning, or MGT 344, Production and Operations Management, or MGT 470 <sup>2</sup> , Project Management in Organizations, Accounting majors must take BCIS 485.....	3
BLAW 316, Legal Environment of Business .....	3
FIN 341, Financial Analysis and Markets .....	3
MGT 309, Human Behavior in Organizations .....	3
MGT 449, Strategic Management <sup>3</sup> .....	3
MKTG 303, Principles of Marketing.....	3
Upper-division (300 or 400 level) elective in economics or applied statistics, excluding	
A ST 311, Statistical Applications (Information Systems majors must take ECON 405, Economic Statistics) .....	3
One upper division (300 or 400 level) elective in business (excluding A ST 311). Select from the following prefixes: A ST, ACCT, B A, BCIS, BLAW, ECON, FIN, I B, MGT, MKTG .....	3

<sup>2</sup>Management- Project Supply Change majors may not use MGT 470 to satisfy this requirement since it is a requirement in the major.

<sup>3</sup>Capstone course to be completed in final semester.

**Viewing a Wider World (VWW) (6 credits)**

A description of the requirement and a listing of approved VWW courses can be found in this catalog under Required Courses.

**General Electives**

Students must complete additional credits to bring total degree credits to a minimum of 128 and upper division credits to 48. The number of general elective credits varies by student.

**Associate in Prebusiness Degree**

To complete the associate degree, 66 credits are required, including courses listed above under the General Education Common Core, College of Business Foundation and Business Core (lower division) requirements.

A minimum cumulative grade point average of 2.0 is also required. The last 15 credits towards the degree must be earned through the NMSU system.

**Minors in Business**

Minors are available in accounting, advertising, banking, business administration, economics, enterprise systems, finance, information systems, intelligence studies, international business, management, marketing, risk management and insurance, and sport marketing. Descriptions of the individual business minors are available on the College of Business website: <http://business.nmsu.edu/courses/> or in the specific academic department. Students pursuing BIS or BAS degrees are limited to a business minor in Business Administration. Students may add minors in business to their programs of study by completing a form in the Advising Center, Guthrie Hall, Suite 109.

**Prelaw Students**

Because the practice of law often involves business-related problems, the majors in the college provide an excellent preparation for the prelaw student. The college has attorneys on the faculty who are available as advisors. Please contact the Finance Department for more information.

**Graduate Work**

The College of Business also offers programs leading to the following degrees: Master of Business Administration, Master of Arts (Economics), Master of Accountancy, Master of Science (Applied Statistics), Ph.D. in Business Administration and Doctor in Economic Development. For details on programs leading to these degrees, see the current Graduate School Catalog.

**MINOR: Business Administration**

This minor is available to all students except those seeking the Bachelor of Accountancy and the Bachelor of Business Administration degrees. A cumulative GPA of at least 2.0 is required for 18 credits, nine of the eighteen credits must be upper division (300 or 400 level). Students must select nine of the eighteen credits from only one of the following course prefixes: ACCT, ECON, FIN, I B, MGT, or MKTG. The remaining nine credits must be chosen from any of the following prefixes: ACCT, B A, BCIS, BLAW, BUSA, ECON, FIN, I B, MGT, MKTG. This is the only minor in Business open to students in the Bachelor of Applied Studies and the Bachelor of Individualized Studies.

**Transferring Business Courses**

The following business courses have been identified as transferable from NMSU to other public two year and four year institutions in New Mexico. The equivalent course at other institutions can be identified using the common course number which appears in parentheses below. Similarly, students from other institutions can use the common course number to identify business courses that can be transferred to NMSU.

A ST 251G, Statistics for Business and the Behavioral Science, or A ST 311 or STAT 251G (MATH 2313)

ACCT 251, Management Accounting (ACCT 2123)

ACCT 252, Financial Accounting (ACCT 2113)

ACCT 301, Financial Accounting I (ACCT 2133)<sup>4</sup>

BCIS 110, Introduction to Computerized Information Systems (BCIS 1113)

BLAW 316, Legal Environment of Business (BLAW 2113)

BLAW 418, Uniform Commercial Code and Advanced Business Law Topics (BLAW2123)

BUSA 111, Business in a Global Society (BUSA 1113)

ECON 251G, Principles of Macroeconomics (ECON 2113)

ECON 252G, Principles of Microeconomics (ECON 2123)

FIN 206, Introduction to Finance (BFIN 2113)<sup>4</sup>

MKTG 303, Principles of Marketing (MKTG 2113)

MGT 201, Introduction to Management (MGMT 2113)<sup>4</sup>

<sup>4</sup>These courses will count as free electives in the College of Business.

## ACCOUNTING and INFORMATION SYSTEMS

**Professor Ed Scribner, department head**

**Professors** Mills, Seipel, Tunnell; **Associate Professors** Billiot, Calk, Kreie, Mora, Nelson, Oliver; **Assistant Professors** McNelis, Melendrez, Smith; **College Associate Professors** Green, Shannon; **College Assistant Professor** Spencer.

(575) 646-4901

<http://business.nmsu.edu/academics/accounting-is/>

**DEGREE: Bachelor of Accountancy**

**MAJOR: Accounting**

**DEGREE: Bachelor of Business Administration**

**MAJOR: Information Systems**

**MINORS: Accounting  
Enterprise Systems  
Information Systems**

**DEGREE: Bachelor of Accountancy**

The Bachelor of Accountancy degree is available to students choosing accounting as a major. The curriculum is designed to prepare you for the excellent opportunities that exist in public accounting practice and in business, government, and nonprofit organizations. It is also appropriate for those who may choose to seek either the Master of Accountancy or the Master of Business Administration degree after graduation.

Every candidate for the Bachelor of Accountancy degree must fulfill the following requirements in addition to the general education common core, College of Business foundation and the business core courses, Viewing a Wider World requirements and general electives (see above).

**Major Courses (27 credits)**

These requirements combined with the accounting courses required above provide a minimum of 30 credits in accounting.

ACCT 301 and 302, Financial Accounting I and II.....	6
ACCT 351, Accounting Systems.....	3
ACCT 353, Cost Accounting.....	3
ACCT 403, Federal Taxation I.....	3
ACCT 451, Auditing Theory and Practices.....	3
Elective in business, upper-division.....	3
Electives in accounting, upper-division.....	6

In order to count toward the Bachelor of Accountancy, upper-division transfer courses in accounting (1) must have been taken at an institution with AACSB Accounting accreditation or (2) be part of the New Mexico Business Articulation Matrix.

**DEGREE: Bachelor of Business Administration**

Every candidate for this major must fulfill the following requirements in addition to the general education common core, College of Business foundation and business core, Viewing a Wider World requirements and general electives (see above).

In the upper-division core IS majors must take ECON 405, Economic Statistics, as their ECON or A ST elective.

**MAJOR: Information Systems**

The Information Systems program prepares you for a variety of administrative and technical positions associated with the analysis and design of computerized information systems. Potential employers include information system service organizations, public accounting/consulting firms, manufacturing and merchandising business, banks and other financial institutions, government, and others.

**Major Courses (27 credits)**

ACCT 351, Accounting Systems.....	3
BCIS 122, Introduction to Information Systems Programming.....	3
BCIS 222, Object Oriented Programming.....	3
BCIS 322, Intermediate Object Oriented Programming.....	3
BCIS 450, Systems Design, Development and Implementation.....	3
BCIS 475, Database Management Systems.....	3
Electives in BCIS, upper-division (may not include BCIS 458 or 485).....	9

**MINOR: Accounting**

To obtain a minor in Accounting, a student must complete 18 or more credit hours of approved course work in Accounting (ACCT), of which at least 12 hours are in courses numbered 300, or higher. A cumulative grade point average of at least 2.0 over the 18 hours must be earned. Required courses include ACCT 251, 252, and 301. BCIS 485 may be substituted for 3 hours of Accounting numbered 300 or higher. The remaining hours may be satisfied by completing any upper-division courses in Accounting, except ACCT 356, 490, 498. Of the 12 hours of upper-division Accounting classes required for the minor, a minimum of 6 must be taken at NMSU. To count toward the minor, upper-division transfer courses must have been taken at an institution with AACSB Accounting accreditation. Application forms for an Accounting minor are available from the Department of Accounting and Information Systems, Room 232, Business Complex Building. These must be submitted for approval by the degree application deadline of the semester in which the student intends to graduate.

**MINOR: Enterprise Systems**

To obtain a minor in Enterprise Systems, a student must complete 18 or more credit hours of approved course work, including ACCT 351; BCIS 458 or 482; BCIS 485; BCIS 495; MGT 344 or 351; and ACCT 353 or MGT 345 or FIN 360. A cumulative grade point average of at least 2.0 over the 18 hours must be earned. Of the 18 hours required for the minor, a minimum of 9 at the 400-level must be taken at NMSU. Application forms are available from the Department of Accounting and Information Systems, Room 232, Business Complex Building. These must be submitted for approval by the degree application deadline of the semester in which the student intends to graduate.

**MINOR: Information Systems**

To obtain a minor in Information Systems (IS), a student must complete 18 or more credit hours of approved coursework in IS, of which at least 12 hours are in courses numbered 300 or higher. A cumulative grade point average of at least 2.0 over the 18 hours must be earned. Required courses include BCIS 122, 222, and 338 or 350. C S 187 may be substituted for BCIS 122. The remaining 9 hours may be satisfied with any upper-division BCIS courses (including ACCT 351) chosen with the consent of a BCIS advisor. It should be noted that some upper-division BCIS courses require BCIS 322 as a prerequisite. Application forms for an IS minor are available from the Department of Accounting and Information Systems, Room 232, Business Complex Building. These must be submitted for approval by the degree application deadline of the semester in which the students intends to graduate.

**ECONOMICS, APPLIED STATISTICS and INTERNATIONAL BUSINESS**

**Professor Richard Adkisson, department head**

**Professors** Carruthers, Ellis (emeritus), Enomoto, Gegax, Gould, McGuckin, Peach, Popp (emeritus), D.B. Smith (emeritus), Steiner, VanLeeuwen, Willman (emeritus); **Associate Professors** Blank, Brook, Clason, Daniel, Erickson, Lee; **Assistant Professors** Downes, Gard, McFerrin, Ricketts, Widner, Pan; **College Professor** V. Bullock; **College Associate Professor** Schmidt  
(575) 646-2113

<http://business.nmsu.edu/academics/economics-ib/>

**DEGREE: Bachelor of Business Administration**

**MAJOR: Economics**  
**MAJOR: International Business**

**DEGREE: Bachelor of Arts in Economics**

**MAJOR: Economics**

**MINOR: Economics**  
**Intelligence Studies**  
**International Business**

**DEGREE: Bachelor of Business Administration**

**MAJOR: Economics**

This program is especially suitable for students who find economics interesting and who intend, perhaps without additional formal education beyond the Bachelor's degree, to take jobs in business or government. This degree prepares you for a wide variety of jobs including those leading eventually to positions of executive responsibility. It is also appropriate for those who may choose to seek a Master of Business Administration degree after graduation.

Every candidate for this major must complete the following courses with a grade of C or better: ECON 251G, ECON 252G, A ST 251G or A ST 311 (or the equivalent), and MATH 142G (or MATH 191G). In addition to completing the general education common core, College of Business foundation and business core, Viewing a Wider World requirements, and general electives (see above), you must fulfill the following requirements.

**Major Courses (24 credits)**

ECON 304, Money and Banking.....	3
ECON 371, Intermediate Microeconomic Theory.....	3
ECON 372, Intermediate Macroeconomic Theory.....	3
ECON 405, Economic Statistics.....	3
ECON 489, Senior Economics Seminar.....	3
Electives in economics, upper-division (at least three credit hours from ECON 332, ECON 336, ECON 401, ECON 450, or ECON 457).....	9

**MAJOR: International Business**

This program is intended for those who plan to work for government agencies or firms with operations abroad or between the United States and foreign

countries. The program prepares you for positions requiring knowledge of international payments, foreign exchange markets, world marketing techniques for products, export and import procedures, and international investments.

Every candidate for this major must complete the following courses with a grade of C or better: ECON 251, ECON 252G, A ST 251G or A ST 311 (or the equivalent), and MATH 142G (or MATH 191G). In addition to completing the general education common core, College of Business foundation and business core, Viewing a Wider World requirements, and general electives (see above), international business majors must fulfill the following requirements.

#### Major Courses (30 credits)

I B 351, International Business .....	3
I B 450V, International Economics .....	3
I B 475, International Finance.....	3
I B 489, Senior Seminar in International Business.....	3
Choice of one from ECON 324V, ECON 325V, ECON 330, I B 398, and HON 380V .....	3
Functional area in business (upper-division courses in a single functional area of business beyond those elsewhere required for the I B major) .....	15

#### Other Requirements for the Major

**Foreign language:** Students must demonstrate oral and written proficiency at the intermediate mid-level according to ACTFL (American Council on the Teaching of Foreign Languages) proficiency guidelines. (Process for demonstrating proficiency to be coordinated with the NMSU Department of Languages and Linguistics. Any costs associated with proficiency demonstration will be paid by the student.)

**International experience requirement:** Students must partake of an international experience equivalent to a semester abroad in a university where the language of instruction is not English. The department will determine appropriateness of international experience. Study abroad programs must be pre-approved by IB advisors and Department Head.

### DEGREE: Bachelor of Arts in Economics MAJOR: Economics

This program is suitable for, among others, students who plan to go onto graduate school in economics, law, business, or other areas. It has the advantage of including a large number of general electives. This feature provides great flexibility to the student who, in addition to completing the courses for a major in economics, may wish to take courses from a wide variety of other subjects of his or her own choosing.

Every candidate for this degree must complete the following requirements. In addition, the following courses must be completed with a grade of C or better: ECON 251G, ECON 252G, A ST 311 (or the equivalent), and MATH 142G (or MATH 191G).

#### General Education Common Core

The College of Business abides by the university's New Mexico General Education Common Core requirements as outlined in this catalog. To minimize the number of courses taken, students should first review the General Degree requirements listed below. Students who follow the recommendations below will satisfy the university's general education requirements.

#### Area I: Communications (10 credits) (Complete one course from each category with a grade of C or better)

- |  |   |
|--|---|
| A. ENGL 111G, Rhetoric and Composition or ENGL 111H, Rhetoric and Composition (Honors), or SPCD 111, Advanced ESL Composition .....  | 4 |
| B. ENGL 203G, Business and Professional Communication; ENGL 211G, Writing in the Humanities and Social Sciences; ENGL 218G, Technical and Scientific Communication; ENGL 311G, Advanced Composition; or ENGL 318G, Advanced Technical and Professional Communication ..... | 3 |
| C. COMM 253G, Public Speaking or COMM 265G, Principles of Human Communication or HON 265G, Principles of Human Communication (Honors) or AXED 201, Effective Leadership and Communication in Agricultural Organizations .....  | 3 |

#### Area II: Mathematics (3 credits)

Select A ST 251G, Statistics for Business and the Behavioral Sciences or MATH 121G, College Algebra or MATH 142G\*, Calculus for the Biological Management Sciences I or MATH 190G, Trigonometry and Precalculus or MATH 191G, Calculus and Analytical Geometry I .....

#### Area III: Laboratory Sciences (8 credits)

Complete two courses with labs from the approved New Mexico General Education Common Core List .....

#### Area IV: Social and Behavioral Sciences (6-9 credits)

Select ECON 251G, Principles of Macroeconomics and ECON 252G, Principles of Microeconomics and up to one additional course from the approved list.

#### Area V: Humanities and Fine Arts (6-9 credits)

Select two or three courses from the approved list so that total credits from Areas IV and V equal 15.

#### Foundation and General Program Requirements (33-40 credits, dependent upon mathematics placement)

ACCT 251, Management Accounting or ACCT 252, Financial Accounting.....	3
A ST 251G or STAT 251G, Statistics for Business and the Behavioral Sciences; or A ST 311, Statistical Applications.....	3
MATH 120, Intermediate Algebra (a grade of C or better required to advance to the next level) .....	3
MATH 121G, College Algebra (a grade of C or better is required to advance to the next level) .....	3
MATH 142G, Calculus for the Biological and Management Sciences I .....	3
ECON 251G and ECON 252G, Principles of Macroeconomics and Microeconomics.....	3
Select Choice (a) or (b) (6 credits)	

(a) Quantitative economics choice: Complete ECON 457, mathematical Economics and ECON 460, Intelligence Research and Analysis .....

Or

(b) Foreign language choice: Complete two foreign language courses numbered 200 and above .....

Area of Concentration in an area other than economics (12 or more credits of which a minimum of 6 credits must be at the 300-499 upper division level unless an exception is granted by the department head.)

The courses may be taken in any area approved by the head of the department, but the following are recommended: accounting, anthropology, business administration, information systems, finance, management, marketing, computer science, geography, government, history, mathematics, philosophy, or sociology. Courses taken as part of General Education Common Core and Foundation and General Program requirements may be used in meeting this requirement.

\*Students planning to do graduate work in mathematical economics or statistics are urged to take MATH 190, Trigonometry and Precalculus, MATH 191G and 192G, Mathematics for Engineers and Scientists I and II, rather than MATH 142G.

#### Departmental Core Courses (24 credits)

ECON 304, Money and Banking.....	3
ECON 371, Intermediate Microeconomic Theory .....	3
ECON 372, Intermediate Macroeconomic Theory .....	3
ECON 405, Economic Statistics .....	3
ECON 489, Senior Economics Seminar .....	3
Electives in economics, upper-division (not to include ECON 457 or 460; if used to satisfy the quantitative economics requirement at least three credit hours from ECON 332, ECON 336, ECON 401, ECON 450) .....	9

#### Viewing a Wider World (VWW) (6 credits)

A description of the requirement and a listing of approved VWW courses can be found in this catalog under Required Courses.

#### General Electives

Students must complete additional credits to bring total degree credits to a minimum of 128 and upper division credits to 48. The number of general elective credits varies by student.

#### MINOR: Economics

A minor in economics consists of 18 or more credit hours of approved course work in economics (ECON), of which at least 12 are numbered 300 or higher, all completed with a grade of "C" or higher.

Specifically required are ECON 251G and 252G: ECON 201G may be substituted for one of these with the approval of the Head of the Department of Economics. Also required are one course from among ECON 304, 372, and 454, and one course from among ECON 401 and 371. The remaining 6 credits may be satisfied with any upper-division courses (courses numbered 300 or higher) in economics.

**MINOR: Intelligence Studies**

**Available only to College of Business Majors**

A minor in Intelligence Studies consists of 18 or more credit hours of approved course work from the following list, all completed with a grade of "C" or higher. At least nine of the credits must be upper division.

This minor supplements the courses in a standard business major with background courses in intelligence studies and additional skill courses and prepares students to work for governmental intelligence agencies or private firms which work with the government on intelligence issues.

Not all these courses are offered by their various departments every semester. Students should check with the advisors and the specific departments to verify when those courses are being offered.

**The following courses (9 credit hours) are required for the minor.**

ENGL 318G, Advanced Technical and Professional Communication .....	3
ECON 460, Intelligence Research and Analysis.....	3
PHIL 223G, Ethics.....	3

At least 9 credits selected in consultation with the advisor. There are courses offered throughout the university that are pertinent to specific areas of Intelligence Studies. Below are some examples.

ECON 324V, Developing Nations.....	3
ECON 325V, Economic Development of Latin America.....	3
GEOG 281, Map use and Analysis.....	3
GEOG 381, Cartography and Geographic Information Systems.....	3
GOVT 380V, Contemporary World Political Ideologies.....	3
GOVT 422, Border Security Policy.....	3
MGT 347, Management Functions and Processes.....	3
MGT 351, Supply Chain Management.....	3

Credits for academic work done in conjunction with internships related to Intelligence Studies.

**Notes:**

Students can reduce the total credits required by carefully selecting WWW courses and by using the ethics course to fill the general education requirement in Humanities and Fine Arts. Remember that at least 9 credit hours must be upper division.

**MINOR: International Business**

A minor in international business consists of 18 or more credit hours of approved course work in the International Business core, all completed with a grade of "C" or higher.

Specifically, minors in International Business must complete I B 351, ECON/I B 450V, FIN/I B 475, I B 489, one class from ECON 324V, ECON 325V, ECON 330, HON 380, I B 398, plus one other upper-division business course. In addition, I B minors must meet the foreign language proficiency requirement described below.

Students must demonstrate oral and written proficiency in a foreign language at the intermediate mid-level according to the ACTFL (American Council on the Teaching of Foreign Languages) proficiency guidelines. (Process for demonstrating proficiency to be coordinated with the NMSU Department of Languages and Linguistics. Any costs associated with proficiency demonstration will be paid by the student.)

**Statistics Courses**

The Applied Statistics faculty provides undergraduate service courses in applied statistics for students from all colleges. These courses are presented at an introductory level to acquaint the student with basic statistical concepts. This service instruction extends to intermediate and advanced graduate-level courses.

**Graduate Work**

The Department of Economics and International Business offers a graduate program leading to the Master of Science in Applied Statistics. The Department also offers a graduate program leading to a Master of Arts in Economics, a Master of Science in Agricultural Economics and a Doctor of Economic Development. Interested students should consult the Graduate Catalog, which is available from the Graduate School. For more information call (575) 646-2936.

**FINANCE**

**Associate Professor Lizbeth Ellis, department head**

**Professors** Compton (Emeritus), Fortin, Martin, Oretskin; **Associate Professors** de Boyrie, Garland, Query, Roth, Sankaran; **Assistant Professors** Diaz Avilez; **College Associate Professor** Berryman; **College Assistant Professor** Taylor  
(575) 646-3201

<http://business.nmsu.edu/academics/finance/>

**DEGREE: Bachelor of Business Administration**

**MAJOR: Finance**

**MINORS: Finance**

**Risk Management and Insurance  
Banking**

**DEGREE: Bachelor of Business Administration**

**MAJOR: Finance**

Finance is the management of money and cash flow for business organizations, government and individuals. The study of finance involves examining the theory and techniques of managing money, including analysis and management of risk. Finance students learn to apply tools and concepts from mathematics, statistics, economics and accounting to financial decision-making. With this knowledge, finance graduates are in high demand by employers and command some of the highest salaries for college graduates. Depending upon their career goals and interests, finance majors may use the electives in the major to focus their program of study on financial management, financial planning, investments, banking, and/or insurance.

Every candidate for this major must fulfill the following requirements in addition to the general education common core, College of Business foundation and business core, Viewing a Wider World requirements and general electives (see above).

**Major Courses (24 credits)**

FIN 355, Investments .....	3
FIN 385, Analysis of Financial Markets and Institutions.....	3
FIN 406, Theory of Financial Decisions.....	3
Finance electives: Four additional, upper division, finance courses numbered 310 or higher .....	12
Any upper-division accounting course or a fifth upper-division finance elective numbered 310 or higher.....	3

**MINOR: Finance**

The minor in Finance, available to students of all majors (business and non-business), is designed to give students the opportunity to select their minor courses to provide a focus on any one of several sub-specialties within the field of Finance. Faculty advisors in the department can assist students in selecting their Finance electives to provide a focus in financial management, financial planning, investments, banking, or insurance.

**Requirements:**

Completion of the courses listed below with a minimum cumulative GPA of 2.0 in these courses and a minimum cumulative GPA of 2.0 in the FIN courses.

ACCT 252, Financial Accounting .....	3
ECON 201, Introduction to Economics; or ECON 251G, Principles of Macroeconomics; or ECON 252G, Principles of Macroeconomics .....	3
FIN 341, Financial Analysis and Markets .....	3
Any three additional, upper division, finance courses numbered 310 or higher .....	9
Any additional upper division business course .....	3

**MINOR: Risk Management and Insurance**

The minor in Insurance is available to students of all majors (business and non-business) and is designed to give students the opportunity to obtain specialized expertise in the field of insurance. Students pursuing this option will be advised by the director of the insurance studies program and will be encouraged to pursue internships and co-op experiences in the insurance industry.



**Requirements:**

Completion of the courses listed below with a minimum cumulative GPA of 2.0 in these courses.

BLAW 316, Legal Environment of Business; or BLAW 385V, Consumers and the Law .....	3
FIN 322, Principles of Insurance.....	3
FIN 341, Financial Analysis and Markets .....	3
Three additional upper division finance courses chosen from: FIN 323, Life/Health/Employee Benefits; FIN 324, Property and Liability Insurance; FIN 326, Business Risk Management; FIN 392, Insurance Internship and Cooperative Education I; and FIN 421, Personal Financial Planning for Professionals .....	9
Any additional upper division business course .....	3

**MINOR: Banking**

The minor in Banking, available to students of all majors (business and non-business), is designed to give students the opportunity to obtain specialized expertise in the field of Banking. Students pursuing this option will be advised by the coordinator of the Banking program and will be encouraged to pursue internships and co-op experiences in the Banking industry.

**Requirements:**

Completion of the courses listed below with a minimum cumulative GPA of 2.0 in these courses.

ACCT 252, Financial Accounting .....	3
FIN 341, Financial Analysis and Markets .....	3
FIN 385, Analysis of Financial Markets and Institutions.....	3
FIN 480, Management of Financial Institutions .....	3
Two additional upper division courses chosen from: FIN 322, Principles of Insurance; FIN 326, Business Risk Management; FIN 355, Investments; FIN 391, Finance Internship and Cooperative Education I; FIN 421, Personal Financial Planning for Professionals; ACCT 301, Financial Accounting I; BLAW 418, Uniform Commercial Code and Advanced Business Law Topics.....	6

**Prerequisites:**

Many courses in the Finance Major and the listed minors have prerequisites. Please see course descriptions in the catalog for prerequisites.

## MANAGEMENT

---

**Associate Professor Steven Elias, department head**

**Professors** Benson, Boje, Daily, Jun, Manning, Teich; **Associate Professors** Adler, Bishop, Chavez, Gray, Rosile, Weisinger; **Assistant Professor** Azadegan (575) 646-1201

<http://business.nmsu.edu/academics/management-gb/>

**DEGREE: Bachelor of Business Administration**

**MAJOR: Management**

**OPTIONS: Human Resources Management**

**Managerial Leadership**

**Project and Supply Chain Management**

**Small Business Management and**

**Entrepreneurship**

**MAJOR: General Business**

**OPTIONS: General Business**

**Entrepreneurship**

**Tribal Management**

**MINOR: Management**

**DEGREE: Bachelor of Business Administration**

**MAJOR: Management**

The Department of Management invites you to consider a major in management. Do you like to work with people? Need help solving people problems at work? Hope to start your own business? Want to run an environmental project, or a bank, a store, a farm, or a government agency? Are you interested in how people from diverse backgrounds work together to achieve common goals? If

you answered yes to any of these questions, you should consider a degree in management. The mission of the department is to prepare graduates, with a Bachelor of Business Administration, for management careers in a broad spectrum of New Mexico, national, and globally oriented businesses. Management graduates work in small and large agricultural, manufacturing, government, transportation, public utility, merchandising, health care, environmental, and communications organizations among others.

The study of management offers the opportunity to develop skills in utilizing human, physical, and economic resources to achieve organizational objectives. These are important cross-functional skills in today's competitive job market. Students will acquire the skills and knowledge to develop their potential and to lead others in a common mission. Management majors may choose from program options in human resource management, managerial leadership, project and supply chain management, or small business management, and entrepreneurship.

Every candidate for this major must fulfill the following requirements in addition to the general education common core, College of Business foundation and the business core, Viewing a Wider World requirements and general electives (see above). Students will choose one or more of the four options that follow.

**OPTION: Human Resource Management****Major Courses (24 credits)**

MGT 332, Human Resources Management.....	3
MGT 451, Selection, Placement, and Performance Evaluation .....	3
MGT 460, Compensation Management.....	3
MGT 458, Comparative International Management or MGT 465, Contemporary Issues in Human Resources Management.....	3
Electives in management, upper division .....	12

**OPTION: Managerial Leadership****Major Courses (24 credits)**

MGT 347, Management Functions and Processes .....	3
MGT 453, Leadership and Motivation .....	3
MGT 454, Work Teams in Organizations .....	3
Electives in management, upper division .....	15

**OPTION: Project and Supply Chain Management****Major Courses (24 credits)**

MGT 345V, Quality and Competitiveness: An International Perspective.....	3
MGT 351, Supply Chain Management .....	3
MGT 466, Managing Electronic Commerce: A Business Model Perspective.....	3
MGT 470, Project Management in Organizations.....	3
Electives in Management, upper division .....	12

**OPTION: Small Business Management and Entrepreneurship****Major Courses (24 credits)**

MGT 332, Human Resources Management.....	3
MGT 361, Small Business Management.....	3
MGT 461, Seminar in Entrepreneurship .....	3
MGT 448, Small Business Consulting.....	3
Electives in management, upper division .....	12

**MAJOR: General Business**

The major in general business is based on a broad range of course options rather than a narrow focus on a single discipline. Graduates find careers in large and small businesses, in government agencies, and in the nonprofit sector. The general business major is well suited to the part-time and working student because it allows the student to select courses that will better meet their individual schedule. The entrepreneurship option is ideal for a student interested in starting or acquiring a small business or entering a family business upon graduation. The curriculum provides a focus on small and new enterprises, thus reflecting the entrepreneurial nature of contemporary business in the U.S.

Every candidate for this major must fulfill the following requirements in addition to the general education common core, College of Business foundation and business core, Viewing a Wider World requirements and general electives (see above). Students will choose one of the three options that follow.

**OPTION: General Business**

**Major Courses (24 credits)**

Major requirements (upper division) .....	24
No more than 9 credits may be taken in any one prefix:	
Accounting (ACCT)	
Business Administration (BA)	
Business Computer Information Systems (BCIS)	
Business Law (BLAW)	
Economics (ECON)	
Finance (FIN)	
International Business (I B)	
Management (MGT)	
Marketing (MKTG)	

**Note:** The general business option is offered through a 2+2 Online Distance Education Degree Completion Program as well. Program information is available on the College of Business website: <http://business.nmsu.edu/academics/distance-ed/>.

**OPTION: Entrepreneurship**

**Major Courses (24 credits)**

MGT 332, Human Resources Management.....	3
MGT 361, Small Business Management.....	3
MGT/MKTG 461, Seminar in Entrepreneurship.....	3
MGT/B A 448, Small Business Consulting .....	3
Major requirements (upper division) .....	12
<i>Of the remaining 12 credits for the entrepreneurship option, no more than 9 credits may be taken in any one prefix.</i>	
Accounting (ACCT)	
Business Administration (B A)	
Business Computer Information Systems (BCIS)	
Business Law (BLAW)	
Economics (ECON)	
Finance (FIN)	
International Business (I B)	
Management (MGT)	
Marketing (MKTG)	

**OPTION: Tribal Management**

This option is offered to students who complete the tribal management option offered at Southwestern Indian Polytechnic Institute and wish to complete a BBA with a major in general business at NMSU.

**Major Courses (24 credits)**

MGT 391, Management Internship and Cooperative Education I.....	3
MGT 491, Management Internship and Cooperative Education II .....	3
Upper division electives in business.....	18
<i>No more than 9 of the 18 credits may be taken in any one prefix.</i>	

Accounting (ACCT)	
Business Administration (B A)	
Business Computer Information Systems (BCIS)	
Business Law (BLAW)	
Economics (ECON)	
Finance (FIN)	
International Business (I B)	
Management (MGT)	
Marketing (MKTG)	

**MINOR: Management**

The management minor requires 18 upper division credits in management. Business majors must take any six upper-division management or BUSA courses (3 credits each). NOTE: BUSA 365 totals 3 management credits for purposes of the management minor. The management minor for non-business majors consists of: one course from MGT 309 or MGT 315V (not both); plus five other upper division management courses (one 3-credit upper division course in the College of Business may substitute for one of the required five management courses).

To obtain a Management minor, a grade of C or better must be attained in the courses required.

# MARKETING

**Professor Elise Pookie Sautter, department head**

**Professors** Hampton, Hyman, Peterson; **Associate Professors** Boberg, Huhmann, Jasso; **Assistant Professors** Niculescu, Payne; **College Professor** Gavin, (575) 646-3341

<http://business.nmsu.edu/academics/marketing/>

**PGA Golf Management Program**

**Director** Gavin; **Assistant Director** Salmon (575) 646-2814

<http://business.nmsu.edu/academics/pgagm/>

**DEGREE: Bachelor of Business Administration**

**MAJOR: Marketing**

**OPTIONS: Marketing  
PGA Golf Management**

**MINORS: Advertising**

**Marketing  
Sport Marketing**

**DEGREE: Bachelor of Business Administration**

**MAJOR: Marketing**

Marketing majors learn skills and knowledge relevant to the co-creation of goods, services and ideas that uniquely meet the needs and wants of global customer markets and society at large. Career opportunities exist in marketing management, advertising, market research, promotion management, sales and sales management, distribution management, and retailing. The major is designed to allow a great deal of choice so students may emphasize any combinations of these areas.

Most marketing majors enter into careers in business firms, although some find job opportunities in governmental and other nonprofit organizations. Still others become involved in owning and managing their own companies. Opportunities in entrepreneurship and small business are expanding at a rapid pace.

Every candidate for this major must fulfill the following requirements in addition to the general education common core, College of Business foundation courses, and business core, Viewing a Wider World requirements and general electives (see above). Students interested in marketing careers across varied industries and fields of interest should elect the "Marketing" option. The "PGA Golf Management," option is far more specialized in the golfing industry and has additional program admission requirements. Students interested in the "PGA Golf Management" option should contact the program Director for complete details and requirements.

**OPTION: Marketing**

**Major Courses (24 credits)**

MKTG 310, Marketing Research .....	3
MKTG 489, Strategy and Policy .....	3
Electives in Marketing, upper division.....	18

Note: The marketing major is offered through a Online Distance Education Degree Completion Program as well. Program information is available on the College of Business website: <http://business.nmsu.edu/academics/distance-ed/>.

**OPTION: PGA Golf Management**

**Major Courses (33 credits)**

MKTG 180, PGA Golf Management Freshman Orientation .....	3
MKTG 181, Level 1, PGA's PGM Education Program (Part 1) .....	3
MKTG 280, Level 1, PGA's PGM Education Program (Part 2) .....	3
MKTG 281, Level 2, PGA's PGM Education Program (Part 1).....	1.5
MKTG 310, Marketing Research .....	3
MKTG 313, Retail Management.....	3
MKTG 380, Level 2, PGA's PGM Education Program (Part 2) .....	1.5
MKTG 381, Level 3, PGA's PGM Education Program (Part 1) .....	1.5
MKTG 480, Level 3, PGA's PGM Education Program (Part 2) .....	1.5

MKTG 481, PGA Final Experience .....	3
Elective in Marketing, upper division .....	9

**Note:** Students must apply separately to the PGA Golf Management Program for acceptance. Acceptance is limited to the fall of every year.

**Other PGA Golf Management Requirements (7 credits)**

HORT 377, Turf Management.....	4
HRTM 420/HRTM 450, Food Service Management.....	3

**MINOR: Marketing**

Requirements: 18 or more credit hours in an approved plan of study. The minor includes:

1. Twelve credit hours of MKTG courses (HRTM 301 Hospitality, Restaurant and Tourism Marketing may be substituted here)
2. Six additional credits of coursework from any College of Business prefix (including MKTG). Marketing-related courses outside the College of Business may be substituted with approval of the department head of Marketing. A list of commonly approved courses is available at the department office.
3. All courses must be upper-division (300 level or above) and must be approved by the Marketing department head.
4. A cumulative grade point average of 2.0 for the 18 credits must be earned.
5. As soon as you consider a minor in Marketing, visit the Department of Marketing, Business Complex, room 209.

**MINOR: Sport Marketing**

Requirements: 18 or more credit hours in an approved plan of study. The minor includes:

1. MKTG 303, Principles of Marketing; BLAW 313, Sports Law; and MKTG 454, Sports Marketing
2. Three additional credits of MKTG courses.
3. Six additional credits of coursework from any College of Business prefix (including MKTG). Marketing-related courses outside the College of Business may be substituted with approval of the department head of Marketing. A list of commonly approved courses is available at the department office.
4. All courses must be upper-division (300 level or above) and must be approved by the Marketing department head.
5. A cumulative grade point average of 2.0 for the 18 credits must be earned.
6. As soon as you consider a minor in Sport Marketing, visit the Department of Marketing, Business Complex, room 209.

**MINOR: Advertising**

Requirements: 18 or more credit hours in an approved plan of study. The minor includes:

1. MKTG 303, Principles of Marketing; MKTG 311V, Consumer Behavior; MKTG 314, Advertising Strategy; and MKTG 459, Promotion Management
2. Six additional credits of coursework from any College of Business prefix (including MKTG). Marketing-related courses outside the College of Business may be substituted with approval of the department head of Marketing. A list of commonly approved courses is available at the department office.
3. All courses must be upper-division (300 level or above) and must be approved by the Marketing department head.
4. A cumulative grade point average of 2.0 for the 18 credits must be earned.
5. As soon as you consider a minor in Marketing, visit the Department of Marketing, Business Complex, room 209.

# COLLEGE of EDUCATION

Associate Dean • *Robert Rhodes*

Associate Dean for Research • *Karin Wiburg*

Assistant Dean for Budget and Planning • *Gladys De Necochea*

Director of Education Research and Budget • *Juanita Hannan*

Undergraduate Advisement Center Coordinator • *Margo M. Trevino-Torres*

Undergraduate Advisement Center Advisors • *Jeff Hackney and Deborah Gouldsmith*

## **Bachelor of Arts in Dance**

## **Bachelor of Science in Athletic Training**

## **Bachelor of Science in Education**

Majors in Early Childhood Education, Elementary Education, and Secondary Education with endorsements in Bilingual Education, Business Education, Foreign Languages, General Science, Language Arts, Mathematics, Physical Education, Social Studies, TESOL; Major in Special Education; Major in Communication Disorders

## **Bachelor of Science in Kinesiology**

The College of Education provides undergraduate students with a broad general education and professional teacher training.

### **General Requirements**

1. Entering freshman with an ACT score of 17 or lower will be invited to take a study skills class to ensure a successful college experience.
2. Complete at least 132 acceptable credits, including a minimum of 48 credits in courses numbered 300 or above with a cumulative GPA of 2.50 or above.
3. Students in teacher preparation programs must pass the New Mexico Teacher Assessments Basic Skills test prior to Admission to education courses numbered above 299.
4. Satisfy the general education requirements. Detailed programs are available in the College of Education Advisement Center. General education requirements will be individually planned for those students with an ACT composite standard score of 25 (85th percentile) or a 1020 SAT score (84.1 percentile).
5. Students in teacher preparation programs must be officially admitted to the Teacher Education Program. See requirements under Admission to the Teacher Education program and Competitive Admission Process.
6. Be officially approved for student teaching during the senior year. Requirements are below.
7. Prior to student teaching, complete teaching field requirements, and pass the Content Knowledge of the New Mexico Teacher Assessments test.
8. Students must complete all professional education courses and all courses in their teaching field or major with a grade of C or better.
9. All students, including transfer students, must complete the last 30 semester credits required for the baccalaureate degree on the New Mexico State University campus. The four-year Servicemen's Opportunity College Program students are not exempt from this regulation.
10. Each student must possess the academic ability, character, and disposition suitable for teaching. A student who, in the professional judgment of the faculty and staff, does not possess these qualifications may be examined by a Selective Review Committee. The committee may recommend any of a variety of actions, ranging from remedial procedures to withdrawal from the College.
11. All majors require a minimum 2.50 cumulative GPA to graduate, except Communication Disorders, which requires a 3.00 cumulative GPA.
12. Students with a bachelor's degree seeking teacher licensure must meet all admission criteria for the Teacher Education Program and be admitted to the Graduate School.

In addition, if faculty at any time determine that a student is weak in a particular skill, the College of Education may require remedial procedures in areas such as mathematics, composition, speaking, or other skills needed for success in public school teaching.

The above requirements are established for those seeking a teaching license. Other programs in the college such as Athletic Training, Physical Education, and Communication Disorders have specific requirements. Check in the advisement office or appropriate departments for program information.

### **Competitive Admission Process For Teacher Education Program**

Applicants who successfully complete the minimum requirements for admission will be reviewed by the Teacher Education Program admission committee. The admission committee will base admissions decisions on applicants' academic qualifications, written communication, faculty recommendations for the student and the student's portfolio.

Applicants should be aware that admission to the Teacher Education Program is competitive and is based upon available faculty resources. Posted GPA and basic skills test scores are minimums which are necessary to be considered for admission by the Teacher Education Program committee and do not ensure admittance into programs. Applicants are encouraged to develop a strong student portfolio, achieve the highest GPA possible, and present the portfolio in a professional manner.

Students who are not admitted may not take designated professional education courses numbered above 299. Students with a bachelor's degree seeking teacher licensure must meet all admission criteria for the Teacher Education Program and be admitted to the Graduate School.

### **Suggested Program of Study**

Requirements of a general nature and for each endorsement are available in the advisement center of the college. It is imperative that students, especially those new to the campus, report frequently to the advisement center to have their programs carefully and continually monitored in line with newly developing requirements.

All students henceforth will pursue a baccalaureate program leading to a Level I Teaching License. All students must work with an academic advisor to ensure a complete program of studies for their specific degree.

### **College of Education Course Fees**

Beginning spring 2007, a fee may be assessed for most College of Education courses, both undergraduate and graduate. The fee will average \$30 per

### **Accreditation**

The university's teacher preparation program, which involves several colleges and which is directed by the College of Education, was accredited in 1962 by the National Council for the Accreditation of Teacher Education. Also, in the College of Education, the Communication Disorders master's program in Speech-Language Pathology is accredited by the American Speech-Language-Hearing Association (ASHA), and the undergraduate Athletic Training Degree in Human Performance, Dance, and Recreation is accredited by the Commission on Accreditation of Athletic Training Education (CAATE). The Physical Education Program is approved by the National Association for Sports and Physical Education. The undergraduate and graduate programs that prepare individuals for licensure to work in public and private schools in New Mexico have been approved by the New Mexico State Board of Education.



course. Funds generated by this fee will be used for expanding and improving field experience programs, internships, and practicums and to better comply with federal, state, and accrediting body standards.

#### **Transferring Early Childhood Education Courses**

The following early childhood education courses have been identified as transferable from NMSU to other public two-year and four-year institutions in New Mexico. The equivalent course at other institutions can be identified using the common course number which appears in parentheses below. Similarly, students from other institutions can use the common course number to identify early childhood education courses that can be transferred to NMSU.

ECED 115, Child Growth, Development, and Learning (1113)

ECED 125, Health, Safety and Nutrition (1122)

ECED 135, Family and Community Collaboration (1133)

ECED 245, Early Childhood Education Professionalism (2152)

ECED 215, Curriculum Development and Implementation I (2163)

ECED 220, Early Childhood Education Practicum

ECED 230, Early Childhood Education Practicum II

ECED 265, Guiding Young Children (2183)

ECED 235, Introduction to Reading (READ 2113)

DANC 204/304, Dance Sport I & II

DANC 205/305, Dance Ensemble I & II

SP M 271, Anatomy & Physiology I

#### **General Education Requirements**

1. Twelve to thirteen credits in English (language arts)
2. Twelve credits in history, including American history and western civilization
3. Six credits in mathematics/ 9 credits for Elementary Education students.
4. Six credits from among the following social sciences: government, economics, sociology, anthropology, geography
5. Twelve credits in science from among the following sciences: biology, chemistry, physics, geology, astronomy
6. Six credits in fine arts.

**NOTE:** *General Education requirements were under revision at the time of publication. Students must check with the Education Advisement Center for current requirements and lists of specific courses that meet these requirements.*

#### **Minors**

The college offers minors in counseling and educational psychology, exercise science, early childhood and dance. Those interested in the counseling area, with a view to eventually enter this professional specialty should contact the Department of Counseling and Educational Psychology for advice.

#### **Cooperative Education Program**

Cooperative Education Program students work in public schools while meeting their certification requirements. The possibility of student teaching in an international setting enhances this option. Qualified students may earn financial assistance through this program. For details, contact:

Director, Cooperative Education  
College of Education  
NMSU  
P O Box 30001,  
Las Cruces, NM 88003-8001

#### **Transfer Students**

Transfer students will have their transcripts evaluated by the Registrar's Office and must meet all basic skills requirements, as well as be admitted to the Teacher Education Program through the formal application procedures. (See "Admission to the Teacher Education Program" below.)

#### **Students with Degrees Seeking Certification Only**

All students who already have a bachelor's degree and who are seeking licensure must be admitted through a graduate licensing program. Details are available in the advisement center.

#### **Competitive Admission to the Teacher Education Program**

Even though students declare their majors when they enter New Mexico State University, teacher candidates are not officially admitted to the Teacher

Education Program until they formally apply and meet the following requirements:

1. A cumulative grade-point average of at least 2.5
2. Must complete 55 credit hours
3. Complete appropriate program prerequisites. See College of Education Advisement Center for specific program prerequisites.
4. Demonstration of competence in reading, mathematics, and composition by passing the Basic Skills component of the New Mexico Teacher Assessments test.
5. Submit a portfolio for admission to the Teacher Education Program. The portfolio will be reviewed by faculty. Admission to TEP is contingent on faculty approval. See the COE Advisement Center for further clarification.

#### **Time Limit on Undergraduate Education Courses**

Any education course more than seven years old taken at NMSU or at another institution will not be counted toward the student's undergraduate program. A student may ask for a review of this time limit by the appropriate department. The department head and/or faculty may recommend accepting a course that is seven years old with approval from the Dean's office. Any course not approved must be repeated by the student.

#### **Withdrawing Students**

The College of Education reserves the right to withdraw students who are registered in 300-level or above education classes who are not admitted to the Teacher Education Program.

#### **Admission to Student Teaching**

To be admitted to student teaching a student must:

1. Submit complete formal application to the College of Education Advisement Center by March 9 for spring and by October 9 for fall a year prior to student teaching.
2. Maintain a cumulative grade-point average of at least 2.50 prior to beginning student teaching.
3. Complete the teaching field requirements and pass the Basic Skills and Content Knowledge tests of the New Mexico Teacher Assessments.
4. Complete all prerequisites to student teaching (details available from the advisement center).
5. Students must complete all professional education courses and all courses in the student's teaching field with a grade of "C" or better.
6. Admission to Student Teaching is contingent upon faculty approval.

Students who do not meet all College of Education requirements for admission to student teaching will not be allowed to begin their student teaching until those requirements are met.

Student teachers can only be placed within an 80-mile radius of the campus in state.

#### **Student Teaching Expectations**

During the senior year, students must keep their last semester free from other responsibilities so that they can devote full time to their student teaching responsibilities. Students should not have any outside commitments that will interfere with their student teaching activities. Students are expected to follow the public school calendar rather than the university calendar. Student teachers should expect to meet all requirements of the school and school district in which they are working.

#### **Licensure Requirements**

In the event that state teacher licensure requirements change, students preparing for licensure to teach should keep abreast of the licensure requirements of the State Department of Education. Copies of the rules and regulations governing licensure are available for students in the Advisement Office and the Office of the Dean of the College of Education. College of Education requirements meet or exceed the state licensure requirements. Whenever state licensure requirements are less than College of Education requirements, students must meet the College of Education requirements to receive a degree from or be recommended for licensure by NMSU. The College of Education reserves the right to change its requirements at any time in order to comply with changes in the regulations governing licensure.

Applying for teacher licensure is the responsibility of the student. The New Mexico Department of Education grants licensure.

The State of New Mexico requires that all candidates for licensure take and pass the state license examination. Upon completion of the degree and planned programs in the teaching fields, students are eligible for teacher licensure upon successfully completing the state license examination. The test is administered annually and information is available through Testing Services.

#### Graduate Work

The College of Education offers curricula leading to the degrees of Master of Arts, Master of Arts in Teaching, Specialist in Education, Doctor of Education, and Doctor of Philosophy in education.

Those interested in pursuing graduate degrees in education should consult the Graduate Catalog for full information. A copy may be procured by writing the dean of the Graduate School.

## COUNSELING and EDUCATIONAL PSYCHOLOGY

#### Professor Jonathan Schwartz, department head

**Professors** E. Vázquez, L. Vázquez, Waldo; **Associate Professors** Adams, Arroyos-Jurado, DeNecochea; **Assistant Professors** Chun, Cheng, Dickson, Grayshield, Navarro, Porras, Torres Fernandez  
(575) 646-2121  
<http://education.nmsu.edu/cep/>

#### MINOR: Counseling and Educational Psychology

A minor in counseling and educational psychology is available to the student receiving a bachelor's degree from another department in the university. The minor in counseling and educational psychology is designed to be useful to the undergraduate who is preparing to enter one of the helping professions such as psychology, education, social work, criminal justice or nursing.

The Department of Counseling and Educational Psychology offers programs leading to the degrees of Master of Arts, Specialist in Education, and Doctor of Philosophy. Students must be admitted by the department into a graduate program to earn a degree in counseling, school psychology, or counseling psychology. Students interested in earning graduate degrees should consult the Graduate School Catalog for requirements and contact the department for information on admissions.

Any selection of C EP electives listed below that total 18 credits, with at least 9 credits of upper division (300 and above):

C EP 110G, Human Growth and Behavior .....	3
C EP 210, Educational Psychology .....	3
C EP 215, The Preschool Child.....	3
C EP 240, Adolescence in School Settings.....	3
C EP 300, Human Relations Training.....	3
C EP 320, Sex Roles in Education .....	3
C EP 451, Introduction to Counseling .....	3
C EP 455, Addictions Prevention and Recovery .....	3
C EP 461, Family Guidance .....	3
C EP 495, Psychology, Multiculturalism, and Counseling .....	3
C EP 499, Independent Study .....	3

## CURRICULUM and INSTRUCTION

#### Professor James O'Donnell, department head

**Directors, H. Garcia, Elementary Education, H. Oesterreich, Secondary Education, B. Cahill, Early Childhood**  
**Professor Marc Pruyn, associate department head/ Graduate Studies**

**Professors** Baptiste, Chávez, Egginton, Garcia, Morehead, Wiburg; **Associate Professors** Cahill, Charles- Huerta, Franzak, Hadfield, Haynes Writer, Hernandez, Kim, Mercado, Oesterreich, Reyes, Rutledge, Torres; **Assistant Professors** Kinzer, Orelus, Parra, Ruiz, Uribe; **College Instructors** N. Baptiste, Licona, Jozwiak, Kaye, Williams  
(575) 646-4820

<http://education.nmsu.edu/ci/>

#### DEGREE: Bachelor of Science in Education

#### MINOR: Early Childhood Education

The primary function of the undergraduate programs in the Department of Curriculum and Instruction is the preparation of licensed teachers for early-childhood settings and elementary and secondary schools. This process includes a broad general education, professional education, and teaching specializations.

#### General Requirements

See "General Requirements" earlier in this chapter about competencies.

#### Professional Education Courses

##### I. Assumptions

- All students will take a course in developmental psychology.
- Field experiences will be interwoven throughout most courses.
- All students, during their program will complete at least three Extended Field Experiences.

##### II. Professional Education Courses Required of All Students Seeking Elementary, Secondary Licensure, or Early Childhood

*C EP 210, Educational Psychology.....	3
EDLT 368, Integrating Technology with Teaching .....	3
*EDUC 181, Field Experience I .....	1
EDUC 315, Multicultural Education .....	3
*EMD 250, Introduction to Education.....	2
SPED 350, Introduction to Special Education in a Diverse Society.....	3
Student Teaching.....	9
Student Teaching Seminar.....	3
*Early Childhood majors don't take the identified courses	

##### III. Professional Education Courses Required of All Candidates Seeking Early Childhood Education

ECED 115, Child Growth, Development and Learning .....	3
ECED 125, Health, Safety and Nutrition .....	3
ECED 135, Family and Community Collaboration.....	3
ECED 215, Curriculum Development and Implementation I .....	3
ECED 220, Early Childhood Education Practicum I.....	2
ECED 225, Curriculum Development and Implementation II .....	3
ECED 230, Early Childhood Education Practicum II.....	2
ECED 235, Introduction to Reading and Literacy Development .....	3
ECED 245, Early Childhood Education Professionalism.....	2
ECED 255, Assessment of Children and Evaluation of Programs.....	3
ECED 265, Guiding Young Children .....	3
ECED 315, Research in Child, Growth, Development and Learning .....	3
ECED 335, Family and Community Collaboration II .....	2
ECED 440, Science/Math Curriculum.....	3
ECED 441, Language Arts/Social Studies Curriculum.....	3
ECED 455, Art/Music/PE Curriculum .....	3
RDG 350, Reading Processes/Methods and Materials .....	3
SPED 450, Working with Young Children with Special Needs, Ages 3-8.....	3
SPED 451, Assessment of Young Children, Birth-Eight .....	2

##### IV. Professional Education Courses Required of Elementary Teachers

EDUC 450, Methods of Teaching Early Childhood Education .....	3
EDUC 451, Methods of Teaching Elementary School Science .....	3
EDUC 452, Methods of Teaching Elementary School Mathematics.....	3
EDUC 453, Methods of Teaching Elementary School Language Arts.....	3
EDUC 454, Methods of Teaching Elementary School Social Studies.....	3
RDG 360, Elementary School Literacy I .....	3
RDG 361, Elementary School Literacy II .....	3
SPED 360, Elementary Curriculum, Methods, and Materials for Special Education in a Diverse Society.....	3

##### V. Professional Education Courses Required of Secondary Teachers

EDUC 381, Field Experience III .....	2
--------------------------------------	---

EDUC 475, Contemporary Issues in Education .....	3
RDG 414, Content Area in Literacy.....	3
SPEd 480, Secondary Curriculum, Methods, and Materials for Special Education in a Diverse Society.....	3
One of the following courses:	
EDUC 460, Teaching Language Arts at the Middle and High School Level .....	3
EDUC 461, Teaching Social Studies at the Middle and High School Level .....	3
EDUC 462, Teaching Mathematics at the Middle and High School Level.....	3
EDUC 463, Teaching Science at the Middle and High School Level.....	3
EDUC 464, Teaching Foreign Language at the Middle and High School Level.....	3
EDUC 467, Teaching Business Education at the Middle and High School Level .....	3

### MAJOR: Elementary Education

General education and professional education are similar for all degree programs in the College of Education. Students should meet with an advisor to plan appropriate general education courses for an elementary education major.

#### Language Arts Teaching Field Elementary (24 credits)

COMM 253G, Public Speaking; or 265G Principles of Human Communication .....	3
ENGL 211G, Writing in the Humanities and Social Sciences, OR ENGL 311G, Advanced Composition.....	3
ENGL 363, Literature for Children and Young Adults.....	3
RDG 360, Elementary School Literacy I .....	3
RDG 361, Elementary School Literacy II .....	3
Language Arts electives (ENGL, RDG, THTR, COMM, or LING) .....	9

#### Social Studies Teaching Field Elementary (24 credits)

ANTH elective .....	3
ECON elective .....	3
GEOG elective .....	3
HIST 101G, Roots of Modern Europe; HIST 102G, Modern Europe .....	3
HIST 201G, Introduction to Early American History, or HIST 202G, Introduction to Recent American History.....	3
HIST 368, Teaching History.....	3
SOC/HIST elective.....	3

#### Science Teaching Field Elementary (24 credits)

BIOL elective .....	3
CHEM elective .....	3
GEOL or GEOG elective .....	3
PHYS elective.....	3
Twelve credits in science from the general education requirements on degree plan .....	12

#### Mathematics Teaching Field Elementary (24 credits)\*

##### Core Courses:

MATH 111, Fundamentals of Elementary Mathematics I .....	3
MATH 112G, Fundamentals of Elementary Math II .....	3
MATH 215, Fundamentals of Elementary Math III.....	3

##### Choose 15 credits from the following:

EDUC 452, Methods of Teaching Elementary School Mathematics.....	3
MATH 120, Intermediate Algebra .....	3
MATH 142G, Calculus for the Biological and Management Sciences I .....	3
MATH 121G, College Algebra .....	3
MATH 313, Fundamentals of Algebra and Geometry I .....	3

\*Students with consent of an advisor and the mathematics department may take higher level math classes.

#### Elementary Education Endorsement Areas (24 credits)

Elementary Education majors are required to complete a teaching field (endorsement area) in an academic discipline. A list of concentration areas is available in the Education Advisement Center.

#### Bilingual/TESOL Endorsement

Students interested in a bilingual or TESOL endorsement should contact the advisement office. These endorsements can now be included in an undergraduate degree program without significant additional hours required.

### Foreign Language Requirements

All elementary education majors are required to take six to eight credits of Spanish or obtain certification of a working knowledge of a Native American language.

### MAJOR: Secondary Education

General education and professional education requirements are similar for all degree programs in the College of Education. Students should meet with an advisor to plan appropriate general education courses for a secondary education major. In addition, students must complete a broad teaching field. Further information on the following teaching fields is available from the Education Advisement Center.

#### Business Education (36 credits)

ACCT 251, Management Accounting.....	3
ACCT 252, Financial Accounting .....	3
AXED 445, Developing Excellent Programs in Career and Technical Education .....	3
BCIS 338, Business Information Systems I.....	3
BLAW 316, Legal Environment of Business .....	3
BOT 203, Office Equipment and Procedures I.....	3
BUSA 111, Business in Global Society .....	3
ECON 251G, Principles of Macroeconomics, ECON 252G, Principles of Microeconomics.....	3
I B 351, International Business .....	3
MGT 309, Human Behavior in Organizations .....	3
MKTG 303, Principles of Marketing.....	3
300+ Business Elective .....	3

#### Choose two of the following

I B 351, International Business .....	3
FIN 303V, Personal Financial Planning and Investing in a Global Economy .....	3
MGT 309, Human Behavior in Organizations .....	3
MKTG 303, Principles of Marketing.....	3

#### French Education (30-35 credits\*)

FREN 111, Elementary French I.....	4
FREN 112, Elementary French II .....	4
FREN 211, Intermediate French I.....	3
FREN 212, Intermediate French II.....	3
FREN 313, Composition and Grammar I.....	3
FREN 314, Composition and Grammar II.....	3
FREN 325, Intermediate Conversation .....	3
FREN 352, French Phonics.....	3
FREN 378, Studies in Francophone Culture .....	3
FREN 300 or above elective .....	6

\*Due to previous experience, students may be able to start beyond the elementary or intermediate levels. Elective credits in French will be substituted to make a minimum in the field of 30 credits.

#### German Education (30-35 credits\*)

GER 111, Elementary German I .....	4
GER 112, Elementary German II.....	4
GER 211, Intermediate German I .....	3
GER 212, Intermediate German II .....	3
GER 313, Intermediate Composition and Grammar .....	3
GER 325, German Conversation I, or GER 425, German Conversation III .....	3

#### Choose five of the following:

GER 362, German Studies.....	3
GER 363, German Studies: Austria and Switzerland .....	3
GER 331, German Lyric Poetry .....	3
GER 341, German Folklore and Culture .....	3
GER 371, German Short Story.....	3
GER 391, History of the German Language.....	3

\*Due to previous experience, students may be able to start beyond the elementary or intermediate levels. Elective credits in German will be substituted to make a minimum in the field of 30 credits.

### Language Arts (51 credits)

Students must complete all of the core courses and one of the subject areas.

#### Core Courses

COMM 253G, Public Speaking, or COMM 265G, Principles of Human Communication.....	3
COMM 384, Interpersonal Communication.....	3
COMM 376, Communication and Culture.....	3
ENGL 211G, Writing in the Humanities and Social Sciences, OR ENGL 311G, Advanced Composition.....	3
ENGL 251 or ENGL 252, Survey of American Literature I or II.....	3
ENGL 339V, 341V, or 394V, Multicultural Literature.....	3
ENGL 463, or 469, English/American Literature.....	3
ENGL 408 or ENGL 409, Shakespeare.....	3
ENGL 416, Approaches to Literature.....	3
ENGL 451, Practicum in Grammar.....	3
ENGL 470, Approaches to Composition.....	3
ENGL **see list in advising office.....	3
LING 200G, Introduction to Language.....	3
JOUR 105G, Media and Society.....	3
THTR 360, Creative Dramatics.....	3

#### Choose one of the following:

ENGL 220G, Introduction to Creative Writing.....	3
ENGL 304, Creative Writing: Prose.....	3
ENGL 306, Creative Writing: Poetry.....	3

#### One of the following areas:

##### Communication Studies

COMM 351, Persuasion Theory.....	3
----------------------------------	---

#### Choose one of the following

COMM 353, Advanced Public Speaking.....	3
COMM 370, Organizational Communication.....	3
COMM 435, Psychology of Human Communication.....	3
COMM 450, Technologies of Human Communication.....	3
COMM 465, Nonverbal Communication.....	3

#### English (two of the following four courses)

ENGL 421, Advanced Study in a Literary Period or Movement.....	3
ENGL 422, Advanced Study in a Literary Form or Genre.....	3
ENGL 423, Advanced Study in a Major Author.....	3
ENGL 424, Advanced Study in a Major Text.....	3

#### Journalism and Mass Communication

JOUR 110, Introduction to Mass Media Writing.....	3
JOUR 210, Print News Writing.....	3

#### Theatre Arts

THTR 105, Acting for Non-majors.....	3
THTR 130, The Art of Theatre.....	3
THTR 384, Stage Management.....	3

#### Math Education (39 credits)

C S 171, Introduction to Computer Science.....	4
MATH 191G/191GL, Calculus and Analytic Geometry I and Lab.....	4
MATH 192G/192GL, Calculus and Analytic Geometry II and Lab.....	4
MATH 279, Introduction to Finite Mathematics.....	3
MATH 280, Introduction to Linear Algebra.....	3
MATH 291G, Calculus and Analytic Geometry III.....	3
MATH 331, Introduction to Modern Algebra.....	3
MATH 332, Introduction to Analysis.....	3
MATH 459, Survey of Geometry.....	3

STAT 371, Statistics for Engineers and Scientists.....	3
Math elective 275+.....	3
Math elective 375+.....	3

#### Physical Education (K-12) (48 credits)

PE P 185, Introduction and Foundations.....	3
PE P 208, Fitness for Health and Sport.....	3
PE P 210, Theory and Technique of Aquatics.....	2
PE P 315, Elementary School Physical Education.....	3
PE P 319, Lifetime Activities.....	2
PE P 323, Racquet Sports.....	2
PE P 363, Theory and Technique of Lifelong Outdoor Leisure Activities.....	2
PE P 392, Theory and Technique of Sports and Games.....	2
PE P 393, Theory and Technique of Dance and Rhythm.....	2
PE P 394, Theory and Technique of Sports and Games II.....	2
PE P 455, Adapted Physical Education.....	3
PE P 466, Secondary Physical Education Methods.....	6
SP M 271, Anatomy & Physiology I.....	3
SP M 271L Anatomy & Physiology I Lab.....	1
SP M 305, Biomechanics.....	3
SP M 308, Exercise Physiology.....	3
SP M 341, Motor Development.....	3
SP M 342, Motor Learning.....	3

#### Science 48-61 credits)

Students must complete all of the core courses and one of the four composite areas.

#### Core Courses (31)

ASTR 105G, The Planets or ASTR 110G, Introduction to Astronomy.....	4
BIOL 111G and BIOL 111L, Natural History of Life and Lab.....	4
BIOL 313, Structure and Function of Plants or BIOL 322, Zoology.....	3/4
CHEM 111G, General Chemistry I.....	4
CHEM 112G, General Chemistry II.....	4
GEOL 111G, Survey of Geology.....	4
PHYS 208, Physics by Inquiry I, and PHYS 209, Physics by Inquiry II, or PHYS 211G/L, General Physics I/Lab, and PHYS 212/L, General Physics II/Lab*.....	8

\*Physics teachers should follow the physics composite in lieu of PHYS 211G and PHYS 212.

#### Composite Areas (complete one of the following areas):

##### Life Sciences (20 credits)

BIOL 301, Principles of Ecology.....	3
BIOL 305, Principles of Genetics.....	3
BIOL 311/BIOL 311 L, General Microbiology and Lab.....	5
BIOL 313, Structure and Function of Plants or BIOL 322, Zoology.....	3
BIOL 467, Evolution.....	3
MATH 120, Intermediate Algebra.....	3

##### Earth Sciences (24 credits)

GEOG 257, Introduction to Meteorology, or GEOG 357, Climatology.....	3
GEOG 281, Map Use and Analysis.....	3
GEOL 295, Environmental Geology, and GEOL 360, General Geochemistry.....	6
GEOL 297, Historical Geology.....	3
GEOL 310, Mineralogy.....	3
GEOL 315V, The Geology of National Parks.....	3
GEOL 353, Geomorphology.....	3

##### Chemistry (18 credits)

BCHE 341, Survey of Biochemistry.....	4
CHEM 211, Organic Chemistry.....	4
CHEM 371, Analytical Chemistry.....	4
CHEM 356, Descriptive Inorganic Chemistry.....	3
CHEM 431, Physical Chemistry.....	3
MATH 192G, Calculus and Analytic Geometry II.....	3



**Physics (30 credits)***(Physics courses listed below should be taken instead of core physics courses)*

C S 187, Java Programming or C S 167, C Programming.....	3
MATH 191G, Calculus and Analytic Geometry I.....	3
MATH 192G, Calculus and Analytic Geometry II.....	3
PHYS 150, Elementary Computational Physics.....	3
PHYS 215G and PHYS 215GL, Engineering Physics I and Lab.....	4
PHYS 216G and 216GL, Engineering Physics II and Lab.....	4
PHYS 217 and 217 L, Heat, Light, and Sound and Lab.....	4
PHYS 315 and 315 L, Modern Physics and Lab.....	6
PHYS 370, Geometrical Optics.....	4

**Social Studies (54-60 credits)**

Students must complete all of the Distributive Core and one of the seven concentration areas.

**Distributive Core (36 hours)**

ANTH 201G, Introduction to Anthropology, or ANTH 202G, Introduction to Archaeology and Physical Anthropology, or ANTH 203, Introduction to Language and Cultural Anthropology.....	3
ECON 251G, Principles of Macroeconomics or ECON 252G, Principles of Microeconomics.....	3
GEOG 112G, World and Regional Geography.....	3
GOVT 100G, American National Government.....	3
GOVT 360, International Relations.....	3
HIST 101G, Roots of Modern Europe, or 102G, Modern Europe.....	3
HIST 102, Modern Europe.....	3
HIST 368, Teaching History.....	3
HIST 201G, Introduction to Early American History.....	3
HIST 202G, Introduction to Recent American History.....	3
HIST 261, New Mexico History.....	3
SOC 101G, Introductory Sociology.....	3

**Concentration Areas:****Geography (21 hours)**

GEOG 120G, Culture and Environment.....	3
GEOG 257, Introduction to Meteorology, or GEOG 357, Climatology.....	3
GEOG 281, Map Use and Analysis.....	3
Two of the following: GEOG 361V, Economic Geography, GEOG 363V, Cultural Geography, GEOG 365V, Urban Geography, or GEOG 467, Transportation Geography.....	6
Two of the following: GEOG 328, Latin America, GEOG 331V, Europe, GEOG 327, Australia.....	6

**Government (24 hours)**

GOVT 110G, Introduction to Political Sciences, or GOVT 150G, American Political Issues, or GOVT 160G, International Political Issues.....	3
One course in four of five areas (12 credits): (1) GOVT 320's, 420's 430's; (2) GOVT 340's or 440's, 650's; (3) GOVT 370's or 470's; (4) GOVT 380's or 480's; (5) GOVT 390's or 490's.....	12
GOVT electives (300 or above).....	9

**History (18 hours)**

HIST elective, U.S. history (300 or above).....	6
HIST elective, world history (300 or above).....	6
HIST elective (300 or above).....	6

**Sociology (24 credits)**

SOC 351, Sociological Theory.....	3
SOC 352, Social Research: Methods.....	3
SOC 371, Race and Ethnic Relations.....	3
SOC 381, Individual and Society.....	3
SOC 392, Juvenile Delinquency.....	3
SOC electives (300 or above).....	9

**Anthropology (24 credits)**

ANTH 301, Cultural Anthropology.....	3
ANTH 315, Introduction to Archaeology.....	3
ANTH 320, Anthropological Linguistics.....	3

ANTH 350, Anthropological Theory.....	3
ANTH 355, Physical Anthropology.....	3
ANTH elective (300 or above).....	9

**Sociology/Anthropology (24 credits)**

ANTH 301, Cultural Anthropology.....	3
ANTH 315, Introduction to Archaeology.....	3
ANTH 320, Anthropological Linguistics.....	3
ANTH 355, Physical Anthropology.....	3
SOC 351, Sociological Theory.....	3
SOC 352, Social Research: Methods.....	3
SOC 371, Race and Ethnic Relations.....	3
SOC 381, Individual and Society.....	3

**Spanish Education (30-35 credits\*)**

SPAN 111, Elementary Spanish I.....	4
SPAN 112, Elementary Spanish II or 113, Beginning Spanish for Native Speakers.....	4
SPAN 211, Intermediate Spanish I or 213, Spanish for Native Speakers I.....	3
SPAN 212, Intermediate Spanish II or 214, Spanish for Native Speakers II.....	3
SPAN 313, Spanish Grammar or 312, Grammar for Native Speakers of Spanish.....	3
SPAN 314, Spanish Composition or 315, Composition for Native Speakers of Spanish.....	3
SPAN 325, Advanced Conversation, or SPAN 327, Conversation for Native Speakers of Spanish.....	3
SPAN 340, Introduction to Spanish Linguistics.....	3
SPAN 350, Introduction to Chicano Studies.....	3
SPAN 380, Introduction to Hispanic Literature.....	3
SPAN 386, Hispanic Literature through the Seventeenth Century or SPAN 387 Hispanic Literature: Eighteenth and Nineteenth Century or SPAN 388 Contemporary Spanish Literature.....	3

\*Due to previous experience, students may be able to start beyond the elementary or intermediate levels. Native speakers of Spanish may not be eligible for some sections. Please check the course descriptions for details. Elective credits will be substituted to make a minimum in the field of 30 credits.

## EDUCATIONAL MANAGEMENT and DEVELOPMENT

**Associate Professor Dana E. Christman, department head**

**Emeritus Professors** Armendariz, Gonzalez, Townley; **Associate Professors** Domínguez, Prentice, Ivory; **Assistant Professors** Kew, Osanloo, Rodriguez; **College Associate Professors** Hannan, Humada-Ludeke.  
(575) 646-3825

<http://education.nmsu.edu/emd/>

The mission of the Department of Educational Management and Development at New Mexico State University is to prepare and graduate capable, skillful, and dynamic educational leaders for a diverse society. Through use of theory and practice we aim to develop change agents and role models for socially-just educational systems.

Work offered is primarily for graduate students working toward the Master of Arts, Doctor of Education, and Doctor of Philosophy degrees. Eight undergraduate courses are offered: EMD 101, Freshman Orientation; EMD 195, Teacher Pathway Orientation; EMD 250, Introduction to Education; EMD 315, Multicultural Leadership; EMD 350V, Introduction to Leadership in a Global Society; EMD 411, Foundations for School Library Specialists; EMD 412, Administration of the School Library; EMD 413, Curriculum Role of the School Library Specialist; and EMD 414, Collection Management and Development in School Libraries.

The Department of Educational Management and Development prepares (1) personnel for administrative positions in the public schools, (2) administrators for positions in higher education, and (3) educational management specialists for non-school positions in business, industry, and government. In addition, the department provides service courses in the social, historical, and philosophical foundations of education at the graduate and undergraduate levels.

Full details on graduate programs are offered in the *Graduate Catalog*.

## HUMAN PERFORMANCE, DANCE AND RECREATION

### Professor Robert Wood, academic department head

**Professor** Oliver; **Associate Professors** Knapp, Berning; **Assistant Professors** Boham, Keeley, Newman, Post; **Instructors**, Arranda, Brock, Gilpin, (575) 646-2215  
<http://education.nmsu.edu/hpdr/>

**DEGREE: Bachelor of Science in Athletic Training Education**

**DEGREE: Bachelor of Science in Education—Teaching Physical Education**

**DEGREE: Bachelor of Science in Kinesiology**

**DEGREE: Bachelor of Arts in Dance**

### MINORS: Dance Exercise Science

The Department of Human Performance, Dance and Recreation provides students with the education necessary to pursue careers in allied health sciences (medicine, physical therapy, occupational therapy, etc.), athletic training, physical education, dance, and dance education, and for a variety of careers in the fitness and wellness industry. Details of the four different degree programs; athletic training, dance, kinesiology and physical education, are provided below.

The department also offers minors in dance and exercise science.

### DEGREE: Bachelor of Science in Athletic Training Education

#### Athletic Training (130 credits)

The New Mexico State University Athletic Training Education Bachelors Degree Program is accredited by the Commission on Accreditation of Athletic Training Education (CAATE), and has a competitive application process. The program provides a challenging didactic and comprehensive clinical educational experience, and incorporates the values of a supportive academic and clinical community in order to prepare future leaders in athletic training and allied health professions.

Students who complete the degree requirements earn a Bachelor of Science in Athletic Training Education and are eligible to sit for the Board of Certification (BOC) examination. Students who pass the BOC exam are referred to as Certified Athletic Trainers (ATC).

#### Application Procedures for Traditional Undergraduate Students

The NMSU Athletic Training Education Program typically accepts up to 20 qualified students each spring. Acceptance is competitive, and is based on the quality of the application materials, an entrance examination and an interview.

Application to the program requires:

- A. Completion of Prerequisite Courses with a C or better: Please see the Program Director or academic advisor for details.
- B. Observation Hours: Site visits to affiliated high schools and NMSU athletics
- C. Complete written application packet which includes:
  1. Background Clearance (\$)
  2. First Aid & CPR/AED-Professional Rescuer (\$)
  3. Hepatitis B vaccination series (\$)
  4. Annual Tuberculosis screening (\$)
  5. Physical exam by MD or DO
  6. Written statement of ability to meet the Technical Standards
  7. Official High School Transcripts
  8. Minimum High School GPA of 2.5
  9. College Transcripts from NMSU and all other institutions attended.
  10. Minimum College GPA of 2.8
  11. Three professional letters of recommendation
  12. Be a regular status, full-time student
  13. Satisfy NMSU basic academic competency requirements in English and math.
- D. Entrance Examination
- E. Interview with Athletic Training Education Program faculty and clinical instructors

Applications to the NMSU Athletic Training Education Program are due on the second Friday in April for admission the following fall semester.

Applicants will be accepted on a conditional status depending on evaluation of spring grades. Applicants will be granted full acceptance if the GPA of the student is a 2.5 or higher after the spring semester of the application year.

#### Transfer Student Policy

Transfer students who meet/the Application Requirements will be considered for admission into the Athletic Training Education Program provided there is space available. CAATE guidelines require a clinical ratio of no more than 8 Athletic Training Students to 1 certified Athletic Trainer.

NMSU's Athletic Training Education Program reserves the right to deny admission to students for any reason. Simply meeting the academic standards for admission does not guarantee students admission into the program.

#### Athletic Training Curriculum (79 credits)

HNFS 251, Human Nutrition.....	3
SP M 190, Introduction to Athletic Training.....	3
SP M 191, Medical Terminology for Athletic Training.....	3
SP M 271, Anatomy & Physiology I.....	3
SP M 271 L, Anatomy and Physiology Laboratory.....	1
SP M 272, Clinical Practicum I.....	2
SP M 273, Clinical Practicum II.....	3
SP M 304, The Psychology of Sport and Exercise.....	3
SP M 305, Biomechanics.....	3
SP M 308, Exercise Physiology.....	3
SP M 310, Orthopedic Evaluation of Lower Extremity Injuries I.....	3
SP M 371, Anatomy & Physiology II + Lab.....	4
SP M 372, Clinical Practicum III.....	4
SP M 373, Clinical Practicum IV.....	4
SP M 375, Therapeutic Exercise.....	3
SP M 410, Orthopedic Evaluation of Upper Extremity Injuries II.....	3
SP M 411, Gen Med & Pharmacology in Athletic Training.....	4
SP M 412, Inferential Stats in Sport and Exer. Science.....	3
SP M 415, Therapeutic Modalities.....	4
SP M 420, Orthopedic Evaluation of Head, Neck, & Spine Injuries.....	3
SP M 422, Clinical Practicum V.....	4
SP M 423, Clinical Practicum VI.....	4
SP M 424, Clinical Practicum VII.....	4
SP M 425, Management Strategies in Athletic Training.....	2
SP M 460, Principles of Strength & Conditioning.....	3

#### Athletic Training Program Required Elective Choices (6 credits)

PE P 208, Fitness for Health and Sport.....	3
PE P 319, Lifetime Activities.....	3
SP M 330, Exercise Prescription.....	3
SP M 342, Motor Learning.....	3
SP M 451, Advanced Exercise Physiology.....	3
SP M 456, Exercise for Special Populations.....	3
SP M 460L, Principles of Strength and Conditioning Lab.....	1
SP M 499, Topics in Athletic Training (requires permission of ATEP director) 1-3	

#### Athletic Training requirements that meet General Education Core Requirements (45 credits)

Area I – English and Communication Arts: 10 credits required: ENGL 111G and COMM 253G or 265G  
 Area II – Mathematics: 6 credits required: MATH 121G or 190 and Math 142G or 210G  
 Area III – Laboratory Sciences: 8 credits required: BIOL 111+L (4) or BIOL 211+L(4)AND CHEM 111G+L (4)  
 Area IV – Social/ Behavioral Sciences: 6-9 credits required: PSY 201G (3)  
 Area V – Humanities and Fine Arts: 6-9 credits required  
 VWW – 6 credits required

Students interested in majoring in Athletic Training Education are encouraged to meet with the Athletic Training Education Program Director prior to enrolling in SP M 272.

Please visit the NMSU Athletic Training Education Program web page for more information regarding this major, <http://education.nmsu.edu/hpdr/training/index.html>.

### DEGREE: Bachelor of Science in Education—Teaching Physical

## Education

Information about Physical Education as a teaching field, and potential employment opportunities may be obtained at the Department Of Human Performance, Dance And Recreation in the Activity Center 204, phone 646-2215.

### Teaching Program Requirements

The K-12 physical education teaching degree program prepares students for public or private school employment. Teaching program requirements are available in the departmental office and in the College of Education Advisement Center.

*Note: Prior to graduation students are required to complete a comprehensive exit exam.*

### K-12 Teaching Preparation (48 credits)

PE P 185, Introduction and Foundations.....	3
PE P 208, Fitness for Health and Sport.....	3
PE P 210, Theory and Technique of Aquatics.....	2
PE P 315, Elementary School Physical Education.....	3
PE P 319, Lifetime Activities.....	2
PE P 323, Racquet Sports.....	2
PE P 363, Theory and Technique of Lifelong Outdoor Leisure Activities.....	2
PE P 392, Theory and Technique of Sports and Games.....	2
PE P 393, Theory and Technique of Dance and Rhythms.....	2
PE P 394, Theory and Technique of Sports and Games II.....	2
PE P 455, Adapted Physical Education.....	3
PE P 466, Secondary Physical Education.....	6
SP M 271 Anatomy & Physiology I.....	3
SP M 271L Anatomy & Physiology I Lab.....	1
SP M 305, Biomechanics.....	3
SP M 308, Exercise Physiology.....	3
SP M 341, Motor Development.....	3
SP M 342, Motor Learning.....	3

(For specific general education course requirements it is mandatory that the department or advisement center be consulted.)

### DEGREE: Bachelor of Science in Kinesiology

The Bachelor of Science in Kinesiology degree program consists of 38 credit hours of core coursework plus additional coursework in one of the following emphasis areas: business, exercise science, gerontology, or performance psychology. These four different tracks provide students diverse fitness and wellness career options within the public, private and/or corporate sectors. Alternately, students may wish to pursue graduate studies in a variety of areas such as business, exercise and sport sciences (e.g. exercise physiology, biomechanics), or medically related fields (e.g. medicine, physical and occupational therapy, cardiopulmonary rehabilitation, etc.).

For specific general education course requirements it is essential that the department or advisement center be consulted.

Information about Kinesiology and potential employment opportunities may be obtained at the Department Of Human Performance, Dance And Recreation in the Activity Center 204, phone 646-2215.

*Note: Students are required to complete 128 total semester hours for the Kinesiology degree. Additionally, students completing requirements for this degree will be ultimately responsible to ensure that they have completed 48 upper division credits (300 and 400 level courses). Kinesiology students must maintain a 2.5 GPA in order to enroll in upper division SP M and PE P courses.*

### Kinesiology Core (38 credits)

PE P 208, Fitness for Health and Sport.....	3
SP M 271 Anatomy & Physiology I.....	3
SP M 271L Anatomy & Physiology I Lab.....	1
SP M 305, Biomechanics.....	3
SP M 308, Exercise Physiology.....	3
SP M 342, Motor Learning.....	3
SP M 371 Anatomy & Physiology II + Lab.....	4
SP M 412, Inferential Stats in Sport and Exercise Science.....	3
SP M 445, Internship.....	12

Select 3 hours from one of the following:

SP M 303, Health & Exercise Psychology.....	3
SP M 304, Psychology of Sport & Exercise.....	3

Additional coursework for individual kinesiology tracks are listed below. The various tracks require 21-27 credit hours of electives (see advisor for details).

### 1. Business Track – Minor in Business Administration (21 credit hours)

Select 3 hours from one of the following:

P E 270, Special Topics.....	3
PE P 185, Intro and Foundations.....	3

Select 9 hours from only one of the following prefixes

ACCT, ECON, FIN, I B, MGT, or MKTG

Select 9 hours from any of the following prefixes

ACCT, B A, BCIS, BLAW, BUSA, ECON, FIN, I B, MGT, or MKTG

*Note: Official minor documentation must be completed with the College of Business Administration and Economics.*

### 2. Exercise Science Track (19 credit hours)

PE P 185, Intro and Foundations.....	3
PE P 319, Lifetime Activities.....	2
SP M 330, Exercise Prescription.....	4
SP M 451, Advanced Exercise Physiology.....	3
SP M 456, Exercise for Special Populations.....	3
SP M 460, Principles of Strength and Conditioning.....	3
SP M 460 L, Principles of Strength and Conditioning Lab.....	1

### 3a. Gerontology Track – Option A. (18 credit hours)

PE P 185, Intro and Foundations.....	3
PE P 319, Lifetime Activities.....	2
SP M 330, Exercise Prescription.....	4
SP M 456, Exercise for Special Populations.....	3
SP M 458, Physical Dimensions of Aging.....	3
SP M 465, Senior Seminar.....	3

### 3b. Gerontology Track – Option B. Minor in Gerontology (18 credit hours)

GERO 415/MPH 515, Introduction to Gerontology.....	3
GERO 456/MPH 556, Biological Aspects of Aging.....	3
GERO 493/MPH 593, Adulthood and Aging.....	3
GERO 494/MPH 594, Aging in a Multicultural Society.....	3

Select two (6 credit hours) from the following courses:

FCS 448, The Aging Family; HNFS 406*, Geriatric Nutrition; GERO 450/MPH 557, Health Promotion for the Older Adult; GERO 451, Aging and Public Policy; NURS 324*, Nursing Care of the Older Adult.....	6
---	---

Additional Department Requirement

\*Prerequisites required.

Note: Official minor documentation must be completed with the College of Health and Social Services.

### 4. Performance Psychology – Minor in Psychology (24 credit hours)

PE P 185, Intro and Foundations.....	3
Select 3 credits from the following (not counted in core requirements)	
SP M 303, Health & Exercise Psychology.....	3
SP M 304, Psychology of Sport & Exercise.....	3

**Psychology Minor (18 credit hours):** Student must complete official Psychology Minor requiring 18 credit hours in PSY. Courses used for PSY minor cannot be used for credit as electives.

*Note: Official minor documentation must be completed with the Department of Psychology.*

### DEGREE: Bachelor of Arts in Dance

The Dance program provides a broad coverage of the field that includes the development of basic technical, performance, and teaching skills. Students can choose between two tracks: performance track and dance education track.

(For specific general education course requirements please consult with the coordinator of the dance program).

### Performance Track

The performance track is specifically designed to train dancers for stage careers. The primary focus for dance students on this track will be to increase their athletic and artistic skills through technique, choreography, improvisation, and production classes. Dance students on this track will be required to be in

one of the NMSU dance companies, participating in performances on and off campus. The senior culminating experience will be to produce a senior concert.

**Dance Technique (47 credit hours in 4 dance styles, 24 upper division credits with a specialization/focus of 2 dance styles).**

DANC 210, Classical Spanish II, .....	1
DANC, 220, Ballet Folklorico II, .....	1
DANC 222, Latin Social Dance II (Bronze Level), 2x.....	2
DANC 223, Ballet Technique II, 2x.....	2
DANC 323, Ballet Technique III, 4x.....	3
DANC 423, Ballet Technique IV, 4x.....	3
DANC 224, Jazz Technique II, 2x.....	2
DANC 324, Jazz Technique III, 4x.....	3
DANC 424, Jazz Technique IV, 4x.....	3
DANC 225, Ballroom Dance II, 2x.....	2
DANC 226, Modern Dance Technique II, 2x.....	2
DANC 326, Modern Dance III, 4x.....	3
DANC 426, Modern Dance Tech IV, 4x.....	3
DANC 227, Tap Dance II, 2x.....	1
DANC 229, Flamenco II, 2x.....	2
DANC 329, Flamenco III, 4x.....	3

**Performance and Production, 18 credit hours, 9 upper division credits from any of the following**

*DANC 203, Performance & Production I, may be taken up to 8x.....	1
*DANC 303, Performance & Production II, may be taken up to 8x.....	1
*DANC 204, Dance Sport I, may be taken up to 4x.....	1-2
*DANC 304, Dance Sport II, may be taken up to 4x.....	1-2
*DANC 205, Dance Ensemble I, may be taken up to 4x.....	1
*DANC 305, Dance Ensemble II, may be taken up to 4x.....	1
*DANC 280, Improvisation I.....	1
*DANC 380, Improvisation II.....	1
*DANC 289, Principles of Choreography I.....	2
*DANC 389, Principles of Choreography II.....	2
*DANC 465, Senior Culminating Experience (2 semesters).....	1-6
DANC 450, Special Topics.....	1-3

**Dance Education, 7 credit hours**

*DANC 300, Dance Pedagogy I or.....	3
*DANC 466, Dance Pedagogy II.....	3
*DANC 313, Dance Practicum I or.....	1
*DANC 413, Dance Practicum II.....	1
*DANC 451V, World Dance.....	3

**Dance Electives, 7 credit hours, (from the Dance Curriculum)**

**Dance Education Track**

The dance education track is specifically designed to train dancers for arts-in-education and studio careers. While requiring technical proficiency, this track has an emphasis on pedagogy and education with a required senior culminating experience of an off campus teaching project.

**Dance Technique: 34 credit hours, 13 upper division, covering at least 3 dance styles**

DANC 210, Classical Spanish II, .....	2
DANC 220, Ballet Folklorico II.....	1
DANC 222, Latin Social Dance II, 2x.....	1
DANC 223, Ballet Technique II, 2x.....	2
DANC 323, Ballet Technique III, 4x.....	3
DANC 423, Ballet Technique IV, 4x.....	3
DANC 224, Jazz Technique II, 2x.....	2
DANC 324, Jazz Technique III, 4x.....	3
DANC 424, Jazz Technique IV, 4x.....	3
DANC 225, Ballroom Dance II, 2x.....	2
DANC 226, Modern Dance Technique II, 2x.....	2
DANC 326, Modern Dance III, 4x.....	3
DANC 426, Modern Dance Tech IV, 4x.....	3
DANC 227, Tap Dance II, 2x.....	1
DANC 229, Flamenco II, 2x.....	2
DANC 329, Flamenco III, 4x.....	3

**Performance and Production, 10 credit hours, 3 upper division credits**

*DANC 203, Performance & Production, may be taken up to 4x.....	1
---	---

*DANC 303, Performance & Production, may be taken up to 4x.....	1
*DANC 204, Dance Sport I, may be taken up to 4x.....	1
*DANC 304, Dance Sport II, may be taken up to 4x.....	1
*DANC 205, Dance Ensemble I, may be taken up to 4x.....	1
*DANC 305, Dance Ensemble II, may be taken up to 4x.....	1
*DANC 280, Improvisation I.....	1
*DANC 289, Principles of Choreography I.....	2

**Dance Education, 24 credit hours**

*DANC 300, Dance Pedagogy I or.....	3
*DANC 466, Dance Pedagogy II.....	3
*DANC 313, Dance Practicum I or.....	1
*DANC 413, Dance Practicum II.....	1
*DANC 451V, World Dance.....	3
*DANC 465, Senior Culminating Experience (two semesters).....	1-6
DANC 450, Special Topics.....	1-3
EDUC 300+, Education electives.....	3-6
SP M 341, Motor Development.....	3
SP M 342, Motor Learning.....	3

**Dance Management, 3 credit hours**

*DANC 275, Dance Studio Management.....	3
---	---

**Dance/Gen. Ed. Electives, 8 credit hours**

**MINOR: Dance (18 credits)**

DANC 451V, World Dance.....	3
DANC 303, Production and Performance.....	1
Dance Technique: 10 credits, 6 at upper division	
Dance Electives: 4 credits	

For more information, visit the Undergraduate Advisement Center or the Department of Human Performance Dance and Recreation for Dance Minor requirements.

**MINOR: Exercise Science (18 - 19 credits)**

PE P 208, Fitness for Health and Sport.....	3
SP M 305, Biomechanics.....	3
SP M 308, Exercise Physiology.....	3
SP M 309, Anatomical Kinesiology.....	3
SP M 451, Advanced Exercise Physiology.....	3
And either:	
SP M 330, Exercise Prescription.....	3
SP M 460 + L, Principles of Strength and Conditioning/Lab.....	4

*Note: Official minor documentation must be completed with the Department of Human Performance Dance and Recreation.*

## SPECIAL EDUCATION/ COMMUNICATION DISORDERS

**Associate Professor Marlene Sala-Provance, interim department head**

**Professor** Gallegos; **Associate Professors** Brown, Chinn, Poel, Salas, Salas-Provance; **Assistant Professors** Bae, Cronin, Ortega, Rhein, Spencer, Valdez; **College Associate Professor** Ivey; **College Assistant Professor** Medina (575) 646-2402

<http://education.nmsu.edu/spedcd/>

**DEGREE: Bachelor of Science in Education**

**MAJOR: Special Education  
Communication Disorders**

The Department of Special Education/Communication Disorders offers two undergraduate programs that prepare professionals to work with exceptional populations in school, community, hospital, and residential settings. The Special Education program prepares students to provide appropriate educational services to individuals with disabilities. The Communication Disorders program provides training for students interested in speech-language pathology or audiology.



**MAJOR: Special Education**

The undergraduate program is designed to prepare students for licensure in special education. Students receive training in a broad based curriculum appropriate for teaching and other career options related to special education and developmental disabilities. In addition to special education coursework, students complete an academic teaching field and may elect to pursue coursework in a variety of focal areas including early childhood special education, developmental disabilities, or counseling and educational psychology. Dual licensure in special and regular education (elementary or secondary) may be obtained.

General education requirements are similar for all degree programs in the College of Education. Students should meet with an advisor to plan appropriate general education courses for a special education major. Students may get a dual license in special education and elementary education or in special education and secondary education.

**Professional Education Courses (34 credits)**

SPED 350, Introduction to Special Education in a Diverse Society.....	3
SPED 360, Elementary Curriculum, Methods, and Materials for Special Education in a Diverse Society.....	3
SPED 459, Classroom Management for Diverse Learners.....	3
SPED 463, Introduction to Assessment of Diverse Exceptional Learners.....	3
SPED 470, Life Span Development and Transitions in Special Education.....	3
SPED 481, Practicum in Education, Equity and Cultural Diversity.....	3
Two of the following courses: SPED 458, Intellectual Disabilities in a Diverse Society: An Introduction; SPED 466, The Learning Disabled Student in a Diverse Society; SPED 467, Behavior Disorders in a Diverse Society.....	6
SPED 482, Student Teaching SPED.....	12
All special education students will choose a developmental psychology course (C EP 110G) and EMD 101.	

**OPTIONS:**

All special education students must choose one of the following options:

**Dual License in Elementary Education (50 credits)**

Complete the Language Arts Teaching Field or Requirements for Elementary Education majors.....	24
Complete the Elementary Education Major Requirements.....	18
C D 365, Language Acquisition for Educators.....	3
EDUC 489, Topics.....	3
RDG 371/SPED 409, Instruction for Special Reading Needs.....	3

**Dual License in Secondary Education (48 credits)**

Complete first teaching field requirements in one area.....	36 (minimum)
C D 365, Language Acquisition for Educators.....	3
EDUC 460, 461, 462, 463, 464, 465, 466, or 467, Secondary Methods (take course appropriate for teaching field.....)	3
EDUC 489, Topics.....	3
RDG 371/SPED 409, Instruction for Special Reading Needs.....	3
Special Education and Focal Areas (Early Childhood-Special Education, Developmental Disabilities, or Counseling and Educational Psychology) (48 credits)	

For detailed coursework, see the Advisement Center.

**Complete a second teaching field 24 (min.)**

C D 365, Language Acquisition for Educators.....	3
RDG 371/SPED 409, Instruction for Special Reading Needs.....	3
Additional coursework in one area of ECED-SPED, C D, or C EP. (See an advisor for details.).....	24

**General Requirements**

See "General Requirements" in the "College of Education" section. Students must be admitted to the Teacher Education Program as a condition for enrolling in courses that lead to licensure.

**MAJOR: Communication Disorders**

The Communication Disorders curriculum provides specialized preparation for students who plan to enter a graduate program to become speech-language pathologists or audiologists. Students supplement their academic study of normal communication, communication disorders, and clinical management with observation and supervised clinical experience in the department's Edgar R. Garrett Speech and Hearing Center. To begin the clinical practicum sequence (C D 321, C D 462,) a student must have a minimum 3.0 GPA.

The undergraduate program provides approximately one-half of the academic requirements needed for certification by the American Speech-Language-Hearing Association and licensure by the New Mexico State Department of Education. Certification and licensure at state and national levels requires completion of the master's degree. Details regarding certification are available from the Department of Special Education/Communication Disorders.

Professional employment opportunities for speech-language pathologists and audiologists are numerous in school systems, community clinics, medical centers, hospitals, private practice, residential programs, and schools for individuals with disabilities.

**Program Requirements**

Required coursework (132 credits; minimum 48 upper-division credits):

**General Requirements**

See "General Requirements" in the "College of Education" section at the beginning of this chapter. A list of specific general education courses is available at the Education Advisement Center in O'Donnell Hall, Room 101.

**Communication Disorders (63 credits)**

C D 221, Introduction to Communication Disorders*.....	3
C D 301, Language Acquisition*.....	3
C D 302, Professional Reasoning and Scientific Thinking.....	3
C D 321, Clinical Methods.....	3
C D 322, Anatomy and Physiology of the Speech Mechanism.....	3
C D 323, Phonetics.....	3
C D 324, Introduction to Speech Science.....	3
C D 326, Clinical Procedures.....	3
C D 325, Language Disorders.....	3
C D 374, American Sign Language I.....	3
C D 375, American Sign Language II.....	3
C D 421, Speech Disorders.....	3
C D 422, Audiology.....	3
C D 423, Neural Bases of Communication Disorders.....	3
C D 424, Aural Rehabilitation*.....	3
C EP 110, Human Growth and Behavior.....	3
C EP 451V, Introduction to Counseling.....	3
SPED 350, Introduction to Special Education in a Diverse Society.....	3
Electives (Selected from the list of recommendations from the C D program).....	9

\*Courses recommended for students who plan to enter a graduate program in education of the deaf/hard of hearing.

**Graduate Program (53 credits)**

Students entering the graduate program with an undergraduate major in Communication Disorders can expect to complete the program in two years and be awarded a Masters of Arts in Communication Disorders and specialization in Speech-Language Pathology. Graduate programs for students without a communication disorders background are generally one year longer. Enrollment in graduate courses in Communication Disorders is limited to persons who have been accepted into the graduate program in communication disorders. To complete a course of study, each student is expected to meet the program's academic and clinical competency criteria as well as the recommendation of state and national certifying bodies for educational licensure and clinical certification.

The master's degree program in Speech-Language Pathology at New Mexico State University is accredited by the Council on Academic Accreditation of the American Speech-Language-Hearing Association. Admission requirements and procedures, which are available upon request, are listed in the *Graduate Catalog*.

# COLLEGE of ENGINEERING

Dean • *Ricardo Jacquez, P.E.*

Associate Dean (Academic Programs) • *Sonya Cooper, P.E.*

Associate Dean/Director of Engineering Research Center • *Martha Mitchell, P.E.*

Assistant Dean (Development) • *Patricia Sullivan*

Scholarship and Career Development Coordinator • *Monica Lopez*

Communications and Special Events coordinator • *Linda Fresques*

Student Programs Coordinator • *Elizabeth Howard*

---

**Bachelor of Science-** Aerospace Engineering, Chemical Engineering, Civil Engineering, Electrical Engineering, Engineering Physics, Engineering Technology, Industrial Engineering, Mechanical Engineering, Surveying Engineering  
**Bachelor of Information and Communication Technology**

---

The College of Engineering comprises six departments: Chemical Engineering; Civil Engineering; Electrical and Computer Engineering; Engineering Technology and Surveying Engineering; Industrial Engineering; Mechanical and Aerospace Engineering;

## Mission of the College of Engineering

The College of Engineering will uphold the land grant mission of NMSU through nationally recognized programs in education, research, and professional & public service.

With respect to our undergraduate programs, we will accomplish our mission by focusing on the following goals:

1. To be nationally and internationally recognized for academic & research programs in Engineering & Engineering Technology.
2. Provide world-class engineers & engineering technologists for industrial, government, and academic constituents of the College of Engineering
3. To be the "University of Choice" for undergraduate engineering & engineering technology education in the region
4. To serve as an engine for economic development in New Mexico through the advancement of engineering and technology

Furthermore, graduates receiving baccalaureate degrees will demonstrate:

- an ability to apply knowledge of mathematics, science, and engineering;
- an ability to design and conduct experiments, as well as to analyze and interpret data;
- an ability to design a system, component, or process to meet desired needs;
- an ability to function on multi-disciplinary teams;
- an ability to identify, formulate, and solve engineering problems;
- an understanding of professional and ethical responsibility;
- an ability to communicate effectively;
- the broad education necessary to understand the impact of engineering solutions in a global and societal context;
- a recognition of the need for, and an ability to engage in life-long learning;
- a knowledge of contemporary issues; and
- an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

## Graduate Degrees

Graduate study is available in the Aerospace Engineering, Chemical Engineering, Civil Engineering, Electrical Engineering, Environmental Engineering, Industrial Engineering, and Mechanical Engineering. See the *Graduate Catalog* for details.

## Student Advisement

Students coming into the College of Engineering are encouraged to declare a major and be advised in that department. At their discretion, students may change majors any time in the course of their study by notifying the associate dean. However, a change in major may result in a delay in graduation.

Students uncertain about choosing a major may list themselves as undeclared in the College of Engineering and be advised by the associate dean. Undeclared students will be asked to choose a major after two semesters in the college. Students must have a declared major in order to graduate.

At the discretion of the associate dean, students who do not demonstrate satisfactory progress may be required to leave the College of Engineering.

## General Education

With the exception of math and science, the College accepts all coursework approved for inclusion in the New Mexico General Education Common Core. Calculus I, General Chemistry I, and Engineering Physics I are required to satisfy areas II and III of the common core.

## S/U Coursework

The College requires most degree requirements to be taken with traditional grading. Students may take selected humanities and social science courses under the S/U option. Other exceptions are specifically noted in the program descriptions later in this catalog.

## Math Placement

Entering freshmen are placed into an appropriate math course based upon the results of the Math Placement Exam administered regularly by the NMSU mathematics department. Students with Advanced Placement or transfer credit for mathematics will be placed accordingly. Math placement may be altered at the discretion of the associate dean.

## Minors

Minors are available from most departments within the College of Engineering. Minors are outlined in the individual program descriptions later in this catalog.

## Accreditation

ABET (formerly the Accreditation Board for Engineering and Technology), established in 1933 and composed of representatives from technical societies, assures professional standards by periodic evaluations of the programs in the College of Engineering. (ABET may be contacted at <http://www.abet.org>)

Continuous accreditation by the Engineering Accreditation Commission (EAC) of ABET has been in force since 1938 for civil, electrical, and mechanical engineering, 1967 for chemical engineering, 1971 for industrial engineering, 2001 for surveying engineering and 2005 for engineering physics.

The electronics and computer, civil, and mechanical engineering technology baccalaureate degree programs have been accredited by the Technology Accreditation Commission (TAC) of ABET since 1988.

The college is a member of the American Society for Engineering Education (ASEE).

**Cooperative Education**

After two semesters of satisfactory academic work (2.5 GPA), an engineering student may go on a work phase with one of the many companies or governmental agencies with which the university has co-op agreements. The experience obtained through alternating periods of academic and fieldwork greatly contributes to the preparation of a student for professional life. Work phases are considered to be a vital part of the educational process, and students are counseled in the selection of co-op positions that will lead to progressive learning experiences. Earnings while on work phase provide a source of financial assistance to meet educational expenses.

A significant number of undergraduate engineering students are in the cooperative education program. Students may, with the approval of their department head, earn credit while participating in a co-op work phase. Co-op credits do not normally count toward the degree requirements but do show on the transcript.

**General Requirements**

Students in the College of Engineering are expected to:

- 1) Earn a minimum cumulative grade-point average of 2.0 before enrolling in engineering courses numbered 300 or above
- 2) Have completed (with a grade of C, or better) the prerequisites for each engineering, technology, math, and science course taken.
- 3) Earn at least a grade of C in all engineering, technology, math and science courses numbered below 300 which are specifically required for the degree.
- 4) Repeat all courses which have not been satisfactorily completed, each semester they are offered.

**Requirements for Graduation**

The minimum requirements for undergraduate degrees are:

- 1) Satisfaction of the university requirements as previously outlined in the "Regulations" section of this catalog.
- 2) Satisfaction of the college requirements as outlined under "General Requirements", above.
- 3) Satisfaction of the departmental rules and course requirements as outlined in the individual program descriptions later in this catalog.

NOTE: In order to maintain quality, remain current, and satisfy changes in accreditation criteria, requirements which have been published may be changed. Any such changes will be announced and will not be retroactive. Always consult an academic advisor before registering for classes.

## CHEMICAL ENGINEERING

**Professor Martha C. Mitchell\***, department head

**Associate Professor Paul K. Andersen**, associate department head

**Professors** Bhada (emeritus), Del Valle (emeritus), Deng, Long\*<sup>#</sup> (emeritus), Johnson, Ghassemi, Mitchell\*, Patton (emeritus), Rockstraw\*, **Associate Professor** Andersen; **Assistant Professors** Houston, Luo;

(575) 646-1214

<http://che.nmsu.edu/>

\*Registered Professional Engineer (NM)

<sup>#</sup>Registered Professional Engineer (State other than NM)

**DEGREE: Bachelor of Science in Chemical Engineering**

**MINORS: Environmental Management  
Nuclear Energy**

**DEGREE: Bachelor of Science in Chemical Engineering**

Chemical engineers combine their knowledge of science, mathematics, and physics with their expertise in engineering analysis to solve industry-level problems in both the private and public sectors. An undergraduate degree leads to an exciting career in fields such as computer chip manufacturing; environmental restoration and pollution prevention; biotechnology and bioengineering; pharmaceutical manufacturing; food production; transportation (including automotive and aerospace); advanced materials; petrochemical and refining;

chemical synthesis and production; power and energy production (including the nuclear industry); law, medicine or advanced studies at the graduate level.

In support of the mission of New Mexico State University, the Department of Chemical Engineering strives to prepare Chemical Engineering Bachelor of Science graduates to successfully and safely practice the chemical engineering profession, to engage in life-long personal and professional development, and to contribute to the betterment of their community and society.

To accomplish this mission, the department supports the objectives of the college and the university and expands the objectives to satisfy the needs of the Chemical Engineering constituent groups. The Chemical Engineering Department at New Mexico State University strives to produce graduates of the undergraduate curriculum who:

1. Will apply their problem-solving and communication skills to chemical engineering industries, government research labs, academia, and related fields;
2. Will implement safety practices in their work;
3. Will be on a path to management or research leadership;
4. Will continually seek to further their education through continuing education and professional development.

These program educational objectives are consistent with those of the College of Engineering and New Mexico State University in their commitment to developing student excellence in an intellectually stimulating environment, cultural diversity, and broad education programs, while encouraging individual expression, professional behavior, civic responsibility, leadership, and an appreciation for continuing education.

The B.S. Chemical Engineering program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>.

**REQUIREMENTS (Total credits 131)**

In addition to satisfying the requirements of the university and the College of Engineering, all majors must pass departmental courses with a grade of C or better. Students must take the Fundamentals of Engineering Exam prior to graduation.

**GENERAL EDUCATION (43 credits)****State of New Mexico Common Core (37 credits)****Area I: Communications (10 credits)**

ENGL 111G, Rhetoric and Composition.....	4
Written Communications Elective .....	3
Oral Communications Elective.....	3

**Area II: Mathematics (4 credits)**

MATH 191G, Calculus and Analytic Geometry I.....	4
--	---

**Area III: Natural Science (8 credits)**

CHEM 115, Principles of Chemistry I.....	4
CHEM 116, Principles of Chemistry II.....	4

**Area IV: Social & Behavioral Sciences (6-9 credits\*)**

Economics, Political Science, Psychology, Sociology, and Anthropology electives .....	6-9
---	-----

**Area V: Humanities & Fine Arts (6-9 credits\*)**

History, Philosophy, Literature, Art, Music, Dance, Theater, or Foreign Language electives .....	6-9*
--	------

**Institution Specific General Education (3 credits)**

Viewing a Wider World Elective .....	6
--------------------------------------	---

**PROGRAM SPECIFIC REQUIREMENTS (88 credits)****Mathematics (10 credits)**

MATH 192G, Calculus and Analytic Geometry II.....	4
MATH 291G, Calculus and Analytic Geometry III.....	3
MATH 392, Introduction to Ordinary Differential Equations.....	3

**Natural Science (20 credits)**

PHYS 215G, Engineering Physics I.....	3
PHYS 216G, Engineering Physics II .....	3
CHEM 313, Organic Chemistry I.....	3
CHEM 314, Organic Chemistry II .....	3
CHEM 315, Organic Chemistry Laboratory .....	2

CHEM 433, 434, or 456 Physical Chemistry Elective <sup>1</sup> .....	3
Natural Science Elective <sup>1</sup> .....	3

**Engineering<sup>1</sup> (3 credits)**

Engineering Elective.....	3
---------------------------	---

**Chemical Engineering (55 credits)**

CH E 100, Basics of Chemical Engineering .....	1
CH E 111, Introduction to Computers Calculations in Chemical Engineering .....	3
CH E 201, Material and Energy Balances.....	4
CH E 301, Chemical Engineering Thermodynamics I .....	3
CH E 302, Chemical Engineering Thermodynamics II .....	2
CH E 302L, Thermodynamic Models of Physical Properties .....	1
CH E 305, Transport Operations I: Fluid Flow.....	3
CH E 306, Transport Operations II: Heat and Mass Transfer .....	3
CH E 307, Transport Operations III: Staged Operations.....	3
CH E 311, Engineering Data Analysis .....	3
CH E 322L, Instruments & Transport Phenomena Laboratory .....	2
CH E 352L, Simulation of Unit Operations.....	1
CH E 361, Engineering Materials .....	3
CH E 412, Process Dynamics and Control.....	3
CH E 422L, Unit Operations and Process Control Laboratory .....	2
CH E 441, Chemical Kinetics and Reaction Engineering .....	3
CH E 452, Process Design, Analysis, and Simulation.....	3
CH E 452L, Chemical Process Simulation.....	1
CH E 455, Plant Design .....	3
CH E 455L, Chemical Plant Simulation .....	1
CH E 490, Senior Seminar.....	1
CH E Electives <sup>1</sup> .....	6

\*Students must complete 15 total credits from Area IV and V, with at least six credits from each area.

<sup>1</sup>Check with your advisor for a list of acceptable elective courses.

**MINOR: Environmental Management (18 credits)**

The environmental management minor is an interdisciplinary program administered by WERC: A Consortium for Environmental Education and Technology Development, located in Foreman Hall.

Requirements: (all courses must be completed with a grade of C or higher. No courses may be taken S/U.)

**Selected 3 credits from:**

WERC 300, Introduction to Pollution Prevention and Its Applications .....	3
WERC 350, Introduction to Energy, Environmental and Risk Assessment.....	3
WERC 381, Renewable Energy Technologies .....	3
WERC 382, Solar Energy Technologies .....	3
WERC 384, Wind and Water Energy Technologies.....	3
WERC 386, Sustainable Building Technology.....	3
WERC 425, Chemical Hygiene Awareness for New Mexico Schools .....	3
WERC 490, Special Topics.....	3

**Select 3 credits from:**

WERC 330, Environmental Management Seminar I (or equivalent) .....	1
WERC 430, Environmental Management Seminar II (or equivalent).....	1
WERC/E S/E T 312, Emergency Response to Hazardous Material Incidents.....	2

**Any four approved environmental management courses (12 credits)****MINOR: Nuclear Energy**

The nuclear energy minor at New Mexico State University is part of a nuclear education program that addresses the growing demand for engineers and scientists with background in the nuclear industry. A student must pass 18 credits from a list available in the Chemical Engineering departmental office with a grade C or better. The courses are upper division courses. The minor is a combination of required and elective courses. No courses may be taken S/U. All prerequisites for the classes must be met or consent of the instructor obtained before enrolling in class.

## CIVIL ENGINEERING

**Professor Adrian Hanson<sup>#\*</sup>@**, interim department head

**Associate Professor J. Phillip King<sup>\*</sup>**, associate department head

**Professors** Hanson<sup>#\*</sup>, Hernandez<sup>\*#</sup> (Emeritus), Idriss<sup>\*</sup>, Jacquez<sup>\*</sup>, Khandan<sup>#</sup>, Samani<sup>#\*</sup>, White<sup>\*</sup> (Emeritus), **Associate Professors** Bandini, Bawazir, Jau-regui<sup>\*</sup>, King<sup>\*</sup>, Newtonson<sup>\*</sup>, Papelis; **Assistant Professors** Cortes, Kang, Weldon; **Adjunct Professor** Hernandez<sup>\*##</sup>

(575) 646-3801

<http://cagesun.nmsu.edu/>

<sup>\*</sup>Registered Professional Engineer (NM)

<sup>#</sup> Registered Professional Engineer (State other than NM)

<sup>##</sup> Registered Land Surveyor (State other than NM)

<sup>@</sup> Board Certified Environmental Engineer (BCEE)

**DEGREE: Bachelor of Science in Civil Engineering****OPTIONS: Structural****Environmental****Geotechnical****Water Resources****DEGREE: Bachelor of Science in Civil Engineering**

The curricula in civil engineering is designed to provide a broad background and is so arranged that students may specialize in one or more of the options listed above or work in one or more areas of civil engineering in the senior year. Students may elect to obtain more than one option in civil engineering.

The mission of the Civil Engineering Department is to offer a high quality and accredited degree that prepares our graduates for professional licensure leading to successful civil engineering careers in industry and government or for success at the graduate level. Toward this end, the Civil Engineering Department will recruit and maintain a diverse, highly skilled faculty that will consistently produce high-end teaching, research, and professional service.

**Civil Engineering Program Educational Objectives**

In support of the mission, the Civil Engineering Department adopts the following program educational objectives:

1. Prepare our graduates to achieve professional engineering licensure and productivity in a design office setting.
2. Prepare our graduates to be future leaders as public employees and private consultants in civil engineering fields.
3. Have 25% of our graduates pursue and complete a graduate level degree.
4. Maintain and further develop a high quality accredited civil engineering program that is competitive with comparable programs in the southwest and throughout the nation.

In addition, the Engineering Accreditation Commission of ABET, Inc., in conjunction with the American Society of Civil Engineers, requires that baccalaureate degree graduates in civil engineering will be able to:

- 1) demonstrate proficiency in mathematics through differential equations, probability and statistics, calculus based physics and general chemistry;
- 2) demonstrate proficiency in a minimum of four recognized major civil engineering areas;
- 3) demonstrate the ability to conduct laboratory experiments and to critically analyze and interpret data in more than one of the recognized major civil engineering areas;
- 4) demonstrate the ability to perform civil engineering design by means of design experience integrated throughout the professional component of the curriculum; and
- 5) demonstrate an understanding of professional practice issues such as procurement of work; bidding versus quality-based selection processes; how the design professional and the construction professions interact to construct a project; the importance of professional licensure and continuing education; and/or other professional practice areas.

The ABET Criteria, in conjunction with the American Society of Civil Engineers also requires that civil engineering curriculums include in-depth instruction allowing students to accomplish the integration of systems using



appropriate analytical, computational and experimental practices. They also require that faculty teaching in civil engineering departments show evidence of understanding professional practice and maintain currency in their respective professional areas. Program faculty must have responsibility and sufficient authority to define, revise, implement, and achieve program objectives.

#### REQUIREMENTS (136 credits)

In addition to the university requirements for graduation, a student must have a 2.0 grade-point average in all departmental courses and pass the Fundamentals of Engineering Examination prior to graduation.

#### GENERAL EDUCATION (43 credits)

##### State of New Mexico Common Core (37 credits)

##### Area I: Communications (10 credits)

ENGL 111G, Rhetoric and Composition.....	4
Written Communications Elective.....	3
Oral Communications Elective.....	3

##### Area II: Mathematics (4 credits)

MATH 191G, Calculus I.....	4
----------------------------	---

##### Area III: Natural Science (Select 8 credits)

CHEM 111G, General Chemistry I (w/lab).....	4
PHYS 215G, Engineering Physics I (w/lab).....	4

##### Area IV: Social and Behavioral Sciences (Select 6-9 credits\*)

Economics, Political Science, Psychology, Sociology and Anthropology electives.....	6-9
--	-----

##### Area V: Humanities and Fine Arts (Select 6-9 credits\*)

History, Philosophy, Literature, Art, Music, Dance, Theater, or Foreign Language electives.....	6-9
--	-----

##### Institution Specific General Education (6 credit)

Viewing a Wider World elective.....	6
-------------------------------------	---

#### PROGRAM SPECIFIC REQUIREMENTS (93 credits)

##### Mathematics (13 credits)

MATH 192G, Calculus and Analytic Geometry II.....	4
MATH 291G, Calculus and Analytic Geometry III.....	3
MATH 392, Introduction to Ordinary Differential Equations.....	3
STAT 371, Statistics for Engineers and Scientists I.....	3

##### Natural Science (4 credits)

PHYS 216G, Engineering Physics II or CHEM 112G, General Chemistry II.....	4
---	---

##### Technical (12 credits)

DRFT 109, Computer Drafting Fundamentals.....	3
E E 201, Networks I, or M E 240, Thermodynamics.....	3
M E 234, Mechanics-Dynamics.....	3
SUR 222, Plane Surveying.....	3

##### Civil Engineering (64 credits)

C E 151, Introduction to Civil Engineering.....	3
C E 160, Geology for Engineers.....	4
C E 231, Introduction to Fluid Mechanics.....	3
C E 233, Mechanics-Statics.....	3
C E 256, Environmental Science.....	3
C E 256L, Environmental Science Laboratory.....	1
C E 301, Mechanics of Materials.....	3
C E 311, Civil Engineering Materials.....	3
C E 315, Determinate Structural Analysis.....	3
C E 331, Hydraulic Engineering.....	3
C E 356, Fundamentals of Environmental Engineering.....	3
C E 357, Soil Mechanics.....	3
C E 365, Intermediate Structural Mechanics.....	3
C E 382, Hydraulic Systems Design.....	3
C E 445, Reinforced Concrete Design.....	3
C E 450, Engineering Economy and Law.....	3
C E 457, Foundation Design.....	3

C E 471, Highway Engineering or C E 477, Construction Engineering.....	3
C E 469, Structural Systems or C E 482, Hydraulic Systems or C E 485, Design of Earth Dams or ENVE 456, Environmental Engineering Design.....	3
C E 497, Senior Seminar.....	2
Civil engineering option electives.....	6

\*Students must complete 15 total credits from Area IV and V, with at least six credits from each area.

#### Civil Engineering Options

##### Electives for Environmental Option (6 credits):

C E 483, Surface Water Hydrology or, A EN 459, Design of Water Wells/ Pumping Systems or C E 452, Geohydrology.....	3
ENVE 455, Solid and Hazardous Waste Systems Design.....	3

##### Electives for Structural Option (6 credits):

C E 444, Elements of Steel Design.....	3
C E 454, Wood Design, C E 455, Masonry Design, or C E 468, Mechanics of Structural Systems.....	3

##### Electives for Water Resources Option (6 credits):

C E 483, Surface Water Hydrology.....	3
C E 452, Geohydrology or A EN 459, Design of Water Wells/Pumping Systems.....	3

##### Electives for Geotechnical Option (6 credits):

C E 452, Geohydrology or C E 459, Geomechanics and Rock Engineering.....	3
--	---

Additionally, it is **strongly recommended** that students select the following elective courses;

**Written Communication Elective:** ENGL 218G, Technical and Professional Communication

**Oral Communication Elective:** COMM 265G, Principles of Human Communication

#### RECOMMENDED FRESHMAN YEAR (35 credits)

C E 151, Introduction to Civil Engineering.....	3
C E 160, Geology for Engineers.....	4
DRFT 109, Computer Drafting Fundamentals.....	3
ENGL 111G, Rhetoric and Composition.....	4
MATH 191G, Calculus and Analytical Geometry I.....	4
MATH 192G, Calculus and Analytical Geometry II.....	4
PHYS 215G, Engineering Physics I (w/lab).....	4
SUR 222, Plane Surveying.....	3
General Education Common Core.....	6

#### MINOR: Agricultural Engineering (18 credits)

##### Soil Science, select 3 credits from:

SOIL 472, Soil Morphology and Classification.....	3
SOIL 476, Soil Microbiology.....	3
SOIL 477, Environmental Soil Physics.....	3
SOIL 479, Environmental Soil Chemistry.....	3

##### Plant and Animal Science, select 3 credits from:

ANSC 351V, Agricultural Animals of the World.....	3
HORT 365, Principles of Crop Production.....	3

##### Institutions/Economics, select 3 credits from:

AG E 315V, World Agriculture and Food Problems.....	3
AG E 337V, Natural Resources Economics.....	3
AG E 384V, Water Resource Economics.....	3

##### Irrigation, select 3 credits from:

A EN 478, Irrigation and Drainage Engineering.....	3
A EN 498, Special Topics.....	3

##### Engineering Specialty, select 3 credits from:

A EN 335, Engineering for Biological Systems.....	3
A EN 475, Soil and Water Conservation.....	3

##### Design, select 3 credits from:

A EN 440, Design Applications.....	3
A EN 459, Design of Water Wells/Pumping Systems.....	3

# ELECTRICAL and COMPUTER ENGINEERING

## The Klipsch School of Electrical and Computer Engineering

Professor Satish Ranade, department head

Professor Phillip DeLeon, associate department head

Professor Steve Stochaj, associate department head

**Professors** Creusere, DeLeon, Ng, Oklobdzija, Ramirez-Angulo, Ranade, Stochaj, Voelz; **Associate Professors**, Borah, Cook, Furth, Huang, Paz, Petersen, Prasad; **Assistant Professors** Boucheron, Brahma, Cho, Dawood, Kliewer, Liu; **College Assistant Professors** Boehmer, Wei Tang; **Emeritus Professors** Carden, Flachs, Giles, Sheila Horan, Stephen Horan, Johnson\*, Jordan, Kersting, Lude- man, Merrill, Reinfelds, Smolleck\*, Steelman\*, Taylor

(575) 646-3115; [ecceoffice@nmsu.edu](mailto:ecceoffice@nmsu.edu);

<http://ece.nmsu.edu/>

\*Registered Professional Engineer (NM)

## DEGREE: Bachelor of Science in Electrical Engineering

The undergraduate program of the Klipsch School is accredited by the Engineering Accreditation Commission of ABET and stresses the development of analytical tools and physical concepts required to prepare students for immediate employment or graduate study. The program is flexible, allowing students to choose elective coursework in the areas of communications, computer engineering, control systems, electric energy systems, electromagnetics and microwave engineering, micro-electronics, photonics, signal processing, and space systems.

### Electrical Engineering Program Educational Objectives

The Klipsch School is dedicated to providing a quality, hands-on, educational experience for our students. The Program Educational Objectives for the Bachelor of Science Program in Electrical Engineering are:

1. That our graduates will obtain relevant, productive employment in the private sector, government, and/or pursue an advanced degree.
2. That our graduates will be using their engineering foundation to innovate solutions to the problems of the real world.

## DEGREE: Bachelor of Science in Electrical Engineering

### REQUIREMENTS (total credits 130):

#### GENERAL EDUCATION (43 credits)

##### State of New Mexico Common Core (37 credits)

##### Area I: Communications (10 credits)

ENGL 111, Rhetoric and Composition.....	4
Written Communications Elective .....	3
Oral Communications Elective.....	3

##### Area II: Mathematics (4 credits)

MATH 191G, Calculus I .....	4
-----------------------------	---

##### Area III: Natural Science (8 credits)

CHEM 111, General Chemistry I (w/lab).....	4
PHYS 215, Engineering Physics I (w/lab).....	4

##### Area IV: Social & Behavioral Sciences (6 or 9 credits\*)

Economics, Political Science, Psychology, Sociology, and Anthropology electives.....	6-9
---	-----

##### Area V: Humanities & Fine Arts (6 or 9 credits\*)

History, Philosophy, Literature, Art, Music, Dance, Theater, or Foreign Language electives .....	6-9
---	-----

##### Institution Specific General Education (6 credits)

Viewing a Wider World Elective .....	6
--------------------------------------	---

#### PROGRAM SPECIFIC REQUIREMENTS (87 credits)

##### Mathematics (17 credits)

E E 210, Engineering Analysis I <sup>2</sup> .....	4
E E 310, Engineering Analysis II <sup>2</sup> .....	3

MATH 192G, Calculus and Analytic Geometry II.....	4
MATH 291G, Calculus and Analytic Geometry III <sup>2</sup> .....	3
MATH 392, Introduction to Ordinary Differential Equations <sup>2</sup> .....	3

##### Natural Science (4 credits)

PHYS 216G, General Physics II (w/lab).....	4
--	---

##### Engineering (9 credits)

Engineering elective <sup>2</sup> .....	3
Technical elective <sup>2</sup> .....	6

##### Engineering (57 credits)

E E 161, Computer Aided Problem Solving .....	4
E E 162, Digital Circuit Design.....	4
E E 260, Embedded Systems.....	4
E E 280, DC and AC Circuits.....	4
E E 312, Signals and Systems I.....	3
E E 314, Signals and Systems II.....	4
E E 351, Applied Electromagnetics.....	4
E E 380, Electronics I.....	4
E E 391, Introduction to Electric Power Engineering.....	4
E E 401, Research Topics in ECE.....	1
E E 418, Capstone Design I.....	3
E E 419, Capstone Design II.....	3
E E 461, Systems Engineering and Program Management.....	3
E E Electives <sup>2</sup> .....	12

\*Students must complete 15 total credits from Area IV and V, with at least 6 credits from each area.

Additionally, it is strongly recommended that students select the following elective course:

##### Viewing a Wider World Electives:

PHIL 323, Engineering Ethics.....	3
-----------------------------------	---

<sup>2</sup>Lists of approved electives can be formed in ECE main office

#### THE FRESHMAN YEAR

Incoming freshmen are expected to be eligible for MATH 191G\*. A typical first year of study for E E students includes the following 31 credits:

CHEM 111G, General Chemistry I.....	4
E E 161, Computer Aided Problem Solving.....	4
E E 162, Digital Circuit Design.....	4
ENGL 111G, Rhetoric and Composition.....	4
MATH 191G, Calculus and Analytic Geometry I*.....	4
MATH 192G, Calculus and Analytic Geometry II.....	4
PHYS 215G, with Lab .....	4
State General Education Common Core Elective .....	3

\*Eligibility for MATH 191G must be established with AP Calculus credit or by taking the Math Placement Exam, administered by the Math Learning Center

#### INTEREST AREAS AND ELECTIVE COURSES IN ELECTRICAL ENGINEERING

Through the proper choice of math, science, and engineering electives in the junior and senior years, it is possible for the student to specialize in an area of interest. In the electrical engineering program at NMSU, these areas include:

##### A.) Signals and Systems consisting of:

###### 1.) Communications and Telemetry

Students study space communication systems, wireless systems, or telemetry. Elective courses include: E E 496, Communications Systems, and E E 497, Digital Communications Systems I.

###### 2.) Digital Signal Processing

Digital signal processing (DSP) uses digital systems to measure, classify, filter, and/or compress real-world signals. These signals may come from a wide- range of sources: music, images, seismic data, brain waves, or speech, for example. Elective courses include: E E 395, Introduction to Digital Signal Processing, E E 442, Real-Time DSP, and E E 446, Digital Image Processing.

##### B.) Computer Engineering consisting of:

###### 1.) Computer Systems

Courses in computer engineering offer the student an opportunity to obtain in- depth knowledge of digital systems and practical

experience in the design, operation, and programming of digital computers. Students wishing to specialize in this area may choose to complete the designated minor in Computer Engineering. Elective courses include: E E 363, Computer Systems Architecture, and E E 469, Communications Networks.

#### 2.) *Micro-Electronics*

Students study discrete analog circuits as well as the design, simulation, layout, and verification of complex digital and analog integrated circuits. Elective courses include: E E 425, Introduction to Semiconductor Devices, E E 480, Introduction to VLSI, E E 482, Electronics II, E E 485, Analog VLSI Design, and E E 486, Digital VLSI.

#### 3.) *Space Systems Engineering*

Work in this area prepares the student for employment opportunities in the aerospace industry. Students are introduced to the complexities of a space systems life cycle and the disciplines required to design, integrate, and operate large systems. Elective courses include: E E 460, Space System Mission Design.

### C.) Power and Control consisting of:

#### 1) *Control Systems*

Work in the systems area provides the student with a background in modeling, analysis, design, simulation, and control of complex systems. These systems may be associated with robotics, aerospace, transportation, power systems, or natural resources. Elective courses include: E E 475, Automatic Control Systems, and E E 476, Computer Control Systems.

#### 2) *Electric Energy Systems*

Courses in this area acquaint students with the design, analysis, and operation of electrical power systems. Topics include high voltage transmission lines, distribution systems, rotating machines, and digital computer analysis of the steady state operation and short circuit conditions of a power system. Elective courses include: E E 431, Power Systems II, E E 432, Power Electronics, E E 493, Power Systems III, and E E 494, Distribution Systems.

### D.) Electromagnetics and Photonics consisting of:

#### 1.) *Electromagnetics and Microwave Engineering*

Students study electromagnetic fields, wave propagation, antennas, waveguides, and transmission lines. Elective courses include: E E 449, Smart antennas, E E 452, Introduction to Radar, E E 453, Microwave Engineering, and E E 454, Antennas and Radiation.

#### 2.) *Photonics*

Students may concentrate in the fields of fiber optics, lasers, optical communications, imaging, and optical signal processing. Elective courses include: E E 470, Physical Optics, E E 473, Introduction to Optics, E E 477, Fiber Optics Communication Systems, E E 478, Optical Sources, Detectors, and Radiometry, and E E 479, Lasers and Applications.

### RELATED AREAS OF STUDY

Electrical and computer engineering students wishing to broaden their educational experience may elect to earn additional bachelor's degrees in

- Engineering Physics or Physics
- Mathematics
- Computer Science

Klipsch School students may also choose to earn a minor in one or more of the following fields:

- Computer Engineering
- Physics
- Mathematics
- Computer Science

Students must consult with an academic advisor in the offering department for specific requirements related to additional degrees and minors.

### BS/MS Program

This program option is designed to provide a means for ECE undergraduates to obtain both a BSEE and a MSEE degree with 154 credit hours of coursework (normally: BSEE = 130 hours, MSEE = 30 hours; total = 160 hours). Students electing this option will follow the existing undergraduate curriculum for the first seven semesters. In the final undergraduate semester, two graduate courses (>500 level) will be taken in lieu of two E E electives. The student receives a BSEE degree at this point. A MSEE program can be completed in three additional

semesters. Students must obtain prior approval of the department before starting this program option.

### Transfer Credit

Credit earned at other institutions is generally accepted; however the following restrictions apply to transfer credits:

- Engineering credit must be earned at an ABET accredited school.
- Physics must be calculus based.
- If the NMSU requirement includes a lab, the transfer credit must include a lab.
- A grade of 'C', or better, must have been earned.
- The E E Elective and Capstone courses may not be transferred.
- The upper division E E core classes can only receive transfer credit after review and approval of the course area faculty.

### MINOR: Electrical Engineering (total credits 25 or 26)

The Electrical Engineering minor is not available to students majoring in Electrical Engineering.

#### Prerequisites (19 credits) all may be transferred

CHEM 111G, General Chemistry I.....	4
MATH 191G, Calculus and Analytic Geometry I.....	4
MATH 192G, Calculus and Analytic Geometry II.....	4
MATH 392, Introduction to Ordinary Differential Equations.....	3
PHYS 215G, Physics I .....	4
PHYS 216G, Physics II .....	4

#### Lower Division (15 or 16 credits) all may be transferred

E E 161, Computer Aided Problem Solving.....	4
E E 162, Digital Circuit Design.....	4
E E 201, Networks I or E E 280, DC and AC Circuits.....	3 or 4
E E 210, Engineering Analysis I .....	4

#### Upper Division (10 credits) no transfer credit accepted

E E 312, Signals and Systems I.....	3
E E 380, Electronics I .....	4
E E Elective.....	3

<sup>2</sup>List of approved electives can be found in ECE main office. Certain electives may require additional pre-requisites.

### MINOR: Computer Engineering (total credits 26 or 27)

MATH 191G Calculus and Analytic Geometry I.....	4
MATH 192G, Calculus and Analytic Geometry II.....	4

#### Lower Division (16 credits) all may be transferred

C S 271 Introduction to Object-Oriented Programming.....	4
E E 161, Computer Aided Problem Solving, or C S 172 Computer Science I.....	4
E E 162, Digital Circuit Design .....	4
E E 260, Embedded Systems or C S 273 Machine Programming & Organization 4	

#### Upper Division (10 credits) no transfer credit accepted

C S 371, Software Development.....	4
C S 473, Architectural Concepts or E E 363, Computer Sys Architecture .....	3 or 4
C S 484, Computer Networks I or E E 469, Digital Communications Networks....	3

## ENGINEERING PHYSICS

### Physics Department, College of Arts and Sciences

Professor Stefan Zollner, department head

Professor Heinz Nakotte, engineering physics program head

(575) 646-3831

<http://engineeringphysics.nmsu.edu/>

### DEGREE: Bachelor of Science in Engineering Physics

The Engineering Physics program is offered jointly by the Physics Department and the College of Engineering. The faculty is drawn from the Departments

of Physics, Chemical Engineering, Electrical and Computer Engineering, and Mechanical and Aerospace Engineering.

A strong grasp of underlying physical principles behind the development of new technologies is necessary to keep up with new developments in a high-tech world. The B.S. in Engineering Physics program is designed to provide quality education to students for immediate employment with technical jobs in private industries (especially high-tech industries), research laboratories, and public sectors. The program trains students with a combination of engineering knowledge, physics principles, mathematical background, problem-solving strategies, and effective communication skills. The B.S. in Engineering Physics also provides an excellent preparation for graduate studies in either physics or an engineering discipline.

The B.S. in Engineering Physics confers an engineering credential. Students in the program complete an engineering core curriculum, as well as a rigorous course of study in physics and mathematics. A strong laboratory component prepares students in experimental techniques and technology using state-of-the-art equipment.

The goals of the program are:

- 1.) to give students a strong education in the fundamentals of physics, engineering, applied mathematics, and computation;
- 2.) to develop skill in real-world problem solving starting from fundamental physical principles;
- 3.) to improve communication skills; and
- 4.) to develop ability to work in a team.

The student must choose one of four concentrations in Aerospace Engineering, Chemical Engineering, Electrical Engineering, or Mechanical Engineering. The requirements are listed below. Students must earn a C or better in all required courses.

## REQUIREMENTS FOR AEROSPACE CONCENTRATION

### GENERAL EDUCATION

#### State of New Mexico Common Core (37 credits)

##### Area I: Communications (10 credits)

ENGL 111, Rhetoric and Composition.....	4
Written Communications Elective .....	3
Oral Communications Elective.....	3

##### Area II: Mathematics (4 credits)

MATH 191, Calculus I .....	4
----------------------------	---

##### Area III: Natural Science (8 credits)

PHYS 213, Mechanics (w/Lab).....	4
PHYS 214, Electricity and Magnetism (w/lab).....	4

##### Area IV: Social & Behavioral Sciences (6 or 9 credits\*)

Economics, Political Science, Psychology, Sociology, and Anthropology electives .....	6-9
---	-----

##### Area V: Humanities & Fine Arts (6 or 9 credits\*)

History, Philosophy, Literature, Art, Music, Dance, Theater, or Foreign Language electives .....	6-9
--	-----

##### Institution Specific General Education (3 or 6 credits\*\*)

Viewing a Wider World Elective .....	3-6
--------------------------------------	-----

### PROGRAM SPECIFIC REQUIREMENTS (90 credits)

#### Mathematics (10 credits)

MATH 192, Calculus and Analytic Geometry II.....	4
MATH 291, Calculus and Analytic Geometry III .....	3
MATH 392, Introduction to Ordinary Differential Equations.....	3

#### Natural Science (4 credits)

CHEM 111G, General Chemistry I.....	4
-------------------------------------	---

#### Electives (3 credits)

PHYS, A E, or M E elective .....	3
----------------------------------	---

#### Physics (28 credits)

PHYS 217, Heat, Light, and Sound (w/Lab).....	4
PHYS 315, Modern Physics (w/Lab) .....	6
PHYS 395, Intermediate Mathematical Methods of Physics .....	3
PHYS 454, Intermediate Modern Physics I .....	3
PHYS 455, Intermediate Modern Physics II.....	3

PHYS 461, Intermediate Electricity and Magnetism I .....	3
PHYS 462, Intermediate Electricity and Magnetism II .....	3
PHYS 475, Advanced Physics Laboratory.....	3

#### Engineering (45 credits)

A E 339, Aerodynamics I.....	3
A E 362, Orbital Mechanics and Space Environment .....	3
A E 363, Aerospace Structures.....	3
A E 364, Flight Dynamics and Controls.....	3
A E 419, Propulsion.....	3
A E 424, Aerospace Systems Engineering.....	3
A E 428, Aerospace Capstone Design.....	3
A E 439, Aerodynamics II.....	3
A E 447, Aerofluids Laboratory.....	3
C E 301, Mechanics of Materials.....	3
M E 102, Mechanical Engineering Orientation .....	1
M E 159, Graphical Communication and Design.....	2
M E 236, Engineering Mechanics I .....	3
M E 237, Engineering Mechanics II.....	3
M E 240, Thermodynamics.....	3
M E 345, Experimental Methods I.....	3

\* Students must complete 15 total credits from Area IV and V, with at least six credits from each area.

\*\* See Alternatives for Meeting VWW requirements (nine-credit rule).

## REQUIREMENTS FOR CHEMICAL CONCENTRATION

### GENERAL EDUCATION

#### State of New Mexico Common Core (37 credits)

##### Area I: Communications (10 credits)

ENGL 111, Rhetoric and Composition.....	4
Written Communications Elective .....	3
Oral Communications Elective.....	3

##### Area II: Mathematics (4 credits)

MATH 191, Calculus I .....	4
----------------------------	---

##### Area III: Natural Science (8 credits)

PHYS 213, Mechanics (w/Lab).....	4
PHYS 214, Electricity and Magnetism (w/lab).....	4

##### Area IV: Social & Behavioral Sciences (6 or 9 credits\*)

Economics, Political Science, Psychology, Sociology, and Anthropology electives .....	6-9
---	-----

##### Area V: Humanities & Fine Arts (6 or 9 credits\*)

History, Philosophy, Literature, Art, Music, Dance, Theater, or Foreign Language electives .....	6-9
--	-----

##### Institution Specific General Education (3 or 6 credits\*\*)

Viewing a Wider World Elective .....	3-6
--------------------------------------	-----

### PROGRAM SPECIFIC REQUIREMENTS (91 credits)

#### Mathematics (10 credits)

MATH 192, Calculus and Analytic Geometry II.....	4
MATH 291, Calculus and Analytic Geometry III .....	3
MATH 392, Introduction to Ordinary Differential Equations.....	3

#### Natural Science (20 credits)

CHEM 115, Principles of Chemistry I .....	4
CHEM 116, Principles of Chemistry II .....	4
CHEM 313, Organic Chemistry I.....	3
CHEM 314, Organic Chemistry II .....	3
CHEM 315, Organic Chemistry Laboratory .....	2
CHEM 371, Analytical Chemistry .....	4

#### Electives (3 credits)

PHYS 395 or CH E elective.....	3
--------------------------------	---

#### Physics (28 credits)

PHYS 217, Heat, Light, and Sound (w/Lab).....	4
---	---



PHYS 315, Modern Physics (w/Lab).....	6
PHYS 451, Intermediate Mechanics I.....	3
PHYS 454, Intermediate Modern Physics I.....	3
PHYS 455, Intermediate Modern Physics II.....	3
PHYS 461, Intermediate Electricity and Magnetism I.....	3
PHYS 462, Intermediate Electricity and Magnetism II.....	3
PHYS 475, Advanced Physics Laboratory.....	3

**Engineering (30 credits)**

CH E 111, Computer Calculations in Chemical Engineering.....	3
CH E 201, Material and Energy Balances.....	4
CH E 301, Chemical Engineering Thermodynamics I.....	3
CH E 302, Chemical Engineering Thermodynamics II (w/lab).....	4
CH E 305, Transport Operations I: Fluid Flow.....	3
CH E 306, Transport Operations II: Heat and Mass Transfer.....	3
CH E 307, Transport Operations III: Staged Operations.....	3
CH E 352 L, Simulation of Unit Operations.....	1
CH E 361, Engineering Materials.....	3
CH E 441, Chemical Kinetics and Reaction Engineering.....	3

\* Students must complete 15 total credits from Area IV and V, with at least six credits from each area.

\*\* See Alternatives for Meeting WWW requirements (nine-credit rule).

Students who wish to take the Fundamentals of Engineering Examination are encouraged to take CH E 490, Senior Seminar.

**REQUIREMENTS FOR ELECTRICAL CONCENTRATION****GENERAL EDUCATION****State of New Mexico Common Core (37 credits)****Area I: Communications (10 credits)**

ENGL 111, Rhetoric and Composition.....	4
Written Communications Elective.....	3
Oral Communications Elective.....	3

**Area II: Mathematics (4 credits)**

MATH 191, Calculus I.....	4
---------------------------	---

**Area III: Natural Science (8 credits)**

PHYS 213, Mechanics (w/Lab).....	4
PHYS 214, Electricity and Magnetism (w/lab).....	4

**Area IV: Social & Behavioral Sciences (6 or 9 credits\*)**

Economics, Political Science, Psychology, Sociology, and Anthropology electives.....	6-9
---	-----

**Area V: Humanities & Fine Arts (6 or 9 credits\*)**

History, Philosophy, Literature, Art, Music, Dance, Theater, or Foreign Language, electives.....	6-9
---	-----

**Institution Specific General Education (3 or 6\*\* credits)**

Viewing a Wider World Elective.....	3-6
-------------------------------------	-----

**PROGRAM SPECIFIC REQUIREMENTS (90 credits)****Mathematics (10 credits)**

MATH 192, Calculus and Analytic Geometry II.....	4
MATH 291, Calculus and Analytic Geometry III.....	3
MATH 392, Introduction to Ordinary Differential Equations.....	3

**Natural Science (4 credits)**

CHEM 111G, General Chemistry I.....	4
-------------------------------------	---

**Electives (15 credits)**

Either:

PHYS 461, Intermediate Electricity and Magnetism I.....	3
<b>AND</b> PHYS 462, Intermediate Electricity and Magnetism II.....	3

**OR**

E E 310, Engineering Analysis II.....	3
---------------------------------------	---

<b>AND</b> E E 351, Applied Electromagnetics.....	3
---	---

**AND**

Additional PHYS or E E electives.....	9
---------------------------------------	---

**Physics (28 credits)**

PHYS 217, Heat, Light, and Sound (w/Lab).....	4
PHYS 315, Modern Physics (w/Lab).....	6
PHYS 395, Intermediate Mathematical Methods of Physics.....	3
PHYS 451, Intermediate Mechanics I.....	3
PHYS 454, Intermediate Modern Physics I.....	3
PHYS 455, Intermediate Modern Physics II.....	3
PHYS 475, Advanced Experimental Modern Physics.....	3
PHYS 480, Thermodynamics.....	3

**Engineering (33 credits)**

E E 161, Computer Aided Problem Solving.....	4
E E 162, Digital Circuit Design.....	4
E E 210, Engineering Analysis I.....	4
E E 260, Embedded Systems.....	4
E E 280, DC and AC Circuits.....	4
E E 312, Signals and Systems I.....	3
E E 380, Electronics I.....	4
E E 418, Capstone Design I.....	3
E E 419, Capstone Design II.....	3

\* Students must complete 15 total credits from Area IV and V, with at least six credits from each area.

\*\* See Alternatives for Meeting WWW requirements (nine-credit rule).

**REQUIREMENTS FOR MECHANICAL CONCENTRATION****GENERAL EDUCATION****State of New Mexico Common Core (37 credits)****Area I: Communications (10 credits)**

ENGL 111, Rhetoric and Composition.....	4
Written Communications Elective.....	3
Oral Communications Elective.....	3

**Area II: Mathematics (4 credits)**

MATH 191, Calculus I.....	4
---------------------------	---

**Area III: Natural Science (8 credits)**

PHYS 213, Mechanics (w/Lab).....	4
PHYS 214, Electricity and Magnetism (w/lab).....	4

**Area IV: Social & Behavioral Sciences (6 or 9 credits\*)**

Economics, Political Science, Psychology, Sociology, and Anthropology electives.....	6-9
---	-----

**Area V: Humanities & Fine Arts (6 or 9 credits\*)**

History, Philosophy, Literature, Art, Music, Dance, Theater, or Foreign Language electives.....	6-9
--	-----

**Institution Specific General Education (3 or 6\*\* credits)**

Viewing a Wider World Elective.....	3-6
-------------------------------------	-----

**PROGRAM SPECIFIC REQUIREMENTS (89 credits)****Mathematics (10 credits)**

MATH 192, Calculus and Analytic Geometry II.....	4
MATH 291, Calculus and Analytic Geometry III.....	3
MATH 392, Introduction to Ordinary Differential Equations.....	3

**Natural Science (4 credits)**

CHEM 111G, General Chemistry I.....	4
-------------------------------------	---

**Electives (9 credits)**

PHYS 451, Intermediate Mechanics or M E 333, Intermediate Dynamics.....	3
PHYS or M E electives.....	6

**Physics (28 credits)**

PHYS 217, Heat, Light, and Sound (w/Lab).....	4
PHYS 315, Modern Physics (w/Lab).....	6
PHYS 395, Intermediate Mathematical Methods of Physics.....	3
PHYS 454, Intermediate Modern Physics I.....	3
PHYS 455, Intermediate Modern Physics II.....	3

PHYS 461, Intermediate Electricity and Magnetism I .....	3
PHYS 462, Intermediate Electricity and Magnetism II .....	3
PHYS 475, Advanced Physics Laboratory.....	3

**Engineering (38 credits)**

C E 301, Mechanics of Materials.....	3
M E 102, Mechanical Engineering Orientation .....	1
M E 159, Graphical Communication and Design.....	2
M E 236, Engineering Mechanics I .....	3
M E 237, Engineering Mechanics II.....	3
M E 240, Thermodynamics.....	3
M E 261, Mechanical Engineering Problem Solving .....	4
M E 326, Mechanical Design.....	3
M E 328, Engineering Analysis I.....	3
M E 338, Fluid Mechanics .....	3
M E 341, Heat Transfer.....	3
M E 426, Design Project Laboratory I.....	3
M E 427, Design Project Laboratory II.....	3
M E 449, Mechanical Engineering Senior Seminar.....	1

\* Students must complete 15 total credits from Area IV and V, with at least six credits from each area.

\*\* See Alternatives for Meeting VWW requirements (nine-credit rule).

## ENGINEERING TECHNOLOGY and SURVEYING ENGINEERING

Professor Jeff Beasley, department head

**Professors** Beasley, Cooper, Frank<sup>+</sup>, Hyde, Jenkins, **Associate Professors** Kelly, Ricketts, Stevens\*, Wurm<sup>+</sup>; **Assistant Professors** Gomez, Jiang\*, Morrell; **College Associate Professor** Boje; **Emeritus** Alexander, Burkholder <sup>+</sup>, Cameron, Rico, Reilly<sup>+</sup>

(575) 646-2236; engrtch@nmsu.edu

<http://et.nmsu.edu/>

\*Registered Professional Engineer (NM)

<sup>+</sup>Licensed Professional Surveyor (NM)

**DEGREE: Bachelor of Science in Engineering Technology**

**MAJOR: Engineering Technology - Civil**

**CONCENTRATIONS: Construction Technology (Optional)**  
**Transportation Technology (Optional)**  
**Water/Wastewater Technology**

(Optional)

**Renewable Energy Technologies**

(Optional)

**MAJOR: Engineering Technology - Electronics and Computer**

**CONCENTRATION: Renewable Energy Technologies**  
(Optional)

**MAJOR: Engineering Technology - Information**

**MAJOR: Engineering Technology - Mechanical**

**CONCENTRATION: Renewable Energy Technologies**  
(Optional)

**DEGREE: Bachelor of Information and Communication Technology**

**DEGREE: Bachelor of Science in Surveying Engineering**

**MINORS: Digital Electronic Applications**

**Information Technologies**

**Manufacturing**

**Renewable Energy Technologies**

**Security Technology**

**Surveying Engineering**

**Engineering Technology**

Engineering technology education places an emphasis on the practical application of engineering principles and methods. Engineering technology

graduates have employment opportunities in areas such as product and systems development, manufacturing, technical and project management, construction, facilities planning and operation, food processing, and testing.

Lists of course equivalencies are available for students transferring to NMSU from most New Mexico and some out-of-state institutions. In addition, the department has some extended articulation agreements, or can provide a method of validation of transfer coursework in many technical subject areas. The department requires that at least 21 credits specifically in the transfer student's program must be earned at the Las Cruces campus of NMSU. General degree requirements of the College of Engineering and University apply to students in the Department of Engineering Technology and Surveying Engineering. Many E T prefixed courses carry one or more prerequisites. The instructor of a course may waive a prerequisite(s) for a student, if doing so will not negatively impact the quality of the student's educational experience.

The department also offers associate degree programs in Electronics and Computer, Mechanical, and Civil Engineering Technology.

The mission of the Department of Engineering Technology and Surveying Engineering is to provide students with a quality engineering technology education that links theory and application and that gives students enhanced career opportunities. The department's goals supporting this mission are: (1) to provide educational and social environments that promote and facilitate student learning; (2) to have a highly respected and visible department; (3) to foster the development of the department; and (4) to graduate students who are competent and sought after by industry.

**DEGREE: Bachelor of Science in Engineering Technology**  
**MAJOR: Engineering Technology - Civil (Total Credits 131)**

Accredited by the Technology Accreditation Commission of the ABET, Inc.

**GENERAL EDUCATION (43 Credits)**

**State of New Mexico Common Core (37 credits)**

**Area I: Communications (10 credits)**

ENGL 111, Rhetoric and Composition.....4

Written Communications elective .....

Recommended: ENGL 218G, Technical and Professional Communication

Oral Communications Elective.....3

Recommended: COMM 265, Principles of Human Communication

**Area II: Mathematics (4 credits)**

MATH 190G, Trigonometry and Precalculus .....

**Area III: Laboratory Science (8 credits)**

CHEM 110G, Principles and Applications of Chemistry .....

PHYS 211G, General Physics I (w/Lab).....4

**Area IV: Social & Behavioral Sciences (6 or 9 credits\*)**

Anthropology, Economics, Political Science, Psychology, and Sociology  
electives.....6-9

**Area V: Humanities & Fine Arts (6 or 9 credits\*)**

History, Philosophy, Literature, Art, Music, Dance, or Theater electives.....6-9

**Institution Specific General Education (6 credits)**

Viewing a Wider World electives.....6

**PROGRAM SPECIFIC REQUIREMENTS (90 credits)**

**Mathematics (6 credits)**

MATH 235, Calculus for the Technical Student I .....

MATH 236, Calculus for the Technical Student II .....

**Natural Science (4 credits)**

PHYS 212G, General Physics II (with Lab) .....

**Technical (24 credits)**

C E 450, Engineering Economy and Law.....3

DRFT 109, Computer Drafting Fundamentals .....

DRFT 143, Civil Drafting Fundamentals .....

SUR 222, Plane Surveying.....3

Surveying Elective .....

Technical Electives.....9

**Engineering Technology (57 credits)**

E T 101, Introduction to Engineering Technology.....	1
E T 120, Computation and Presentation Software .....	3
E T 154, Construction Methods and Communications.....	3
E T 240, Applied Statics.....	3
E T 241, Applied Dynamics.....	3
E T 254, Concrete Technology.....	3
E T 302, Manufacturing Data Analysis.....	3
E T 306, Fundamental and Applied Thermodynamics.....	3
E T 308, Fluid Technology (w/Lab).....	4
E T 310, Applied Strength of Materials (w/Lab).....	4
E T 332, Applied Design of Structures I.....	4
E T 354, Soil and Foundation Technology.....	4
E T 355, Site/Land Development and Layout .....	3
E T 410, Senior Seminar.....	1
E T 412, Highway Technology .....	3
E T 418, Applied Hydraulics.....	3
E T 432, Applied Design of Structures II .....	4
E T 435, Senior Design and Project Management.....	3

\* Students must complete 15 total credits from Area IV and V, with at least six credits from each area.

**Recommended Freshman Year (34 credits)**

DRFT 109, Computer Drafting Fundamentals .....	3
E T 101, Introduction to Engineering Technology.....	1
E T 120, Computation and Presentation Software .....	3
E T 154, Construction Methods and Communication .....	3
E T 254, Concrete Technology.....	3
ENGL 111G, Rhetoric and Composition.....	4
MATH 190G, Trigonometry and Precalculus .....	4
PHYS 211G, General Physics I (w/lab).....	4
General Education Courses from Area IV and/or Area V .....	9

Students meet the requirements for a concentration by selecting specific technical and surveying electives:

**CONCENTRATION: Construction Technology**

Students can fulfill the Construction Technology Concentration requirements by choosing the four courses below to fulfill the technical and survey elective requirement.

E T 454, Advanced Construction Technology
E T 455, Cost Estimating and Scheduling
MGT 453, Leadership and Motivation, or MGT 454, Work Teams in Organizations, or MGT 461, Seminar in Entrepreneurship
SUR 328, Principles and Practices of Construction Surveying

**CONCENTRATION: Transportation Technology**

Students can fulfill the Transportation Technology Concentration requirements by choosing the four courses below to fulfill the technical and survey elective requirement.

C E 479, Pavement Analysis and Design
E T 442, Intelligent Transportation Systems
E T 455, Cost Estimating and Scheduling
SUR 328, Principles and Practices of Construction Surveying

**CONCENTRATION: Water/Wastewater Technology**

Students can fulfill the Water/Wastewater Technology Concentration requirement by choosing the courses below to fulfill the technical and survey elective requirements.

C E 356/E T 321, Environmental Engineering and Science
SUR 328, Principles and Practices of Construction Surveying

**CONCENTRATION: Renewable Energy Technologies**

Students can fulfill the Renewable Energy Concentration requirements by choosing the four courses below to fulfill the technical and survey elective requirement.

E T 381, Renewable Energy Technologies
E T 386, Sustainable Construction and Green Building Design

E T 382, Solar Energy Technologies or E T 384, Wind and Water Energy Technologies

SUR 328, Principles and Practices of Construction Surveying

**DEGREE: Bachelor of Science in Engineering Technology**  
**MAJOR: Engineering Technology - Electronics and Computer (Total credits 130)**

*Accredited by the Technology Accreditation Commission of the ABET, Inc.*

**GENERAL EDUCATION (43 Credits)****State of New Mexico Common Core (37 credits)****Area I: Communications (10 credits)**

ENGL 111, Rhetoric and Composition.....	4
Written Communications elective .....	3
Recommended: ENGL 218G, Technical and Professional Communication	
Oral Communications elective.....	3
Recommended: COMM 265G, Principles of Human Communication	

**Area II: Mathematics (4 credits)**

MATH 190G, Trigonometry and Precalculus .....	4
---	---

**Area III: Laboratory Science (8 credits)**

PHYS 211G, General Physics I (w/Lab).....	4
PHYS 212G, General Physics II (w/Lab).....	4

**Area IV: Social & Behavioral Sciences (6 or 9 credits\*)**

Anthropology, Economics, Political Science, Psychology, Sociology electives.....	6-9
--	-----

**Area V: Humanities & Fine Arts (6 or 9 credits\*)**

History, Philosophy, Literature, Art, Music, Dance, or Theater electives.....	6-9
---	-----

**Institution Specific General Education (6 credits)**

Viewing a Wider World electives .....	6
---------------------------------------	---

**PROGRAM SPECIFIC REQUIREMENTS (86 credits)****Mathematics (6 credits)**

MATH 235, Calculus for the Technical Student I .....	3
MATH 236, Calculus for the Technical Student II .....	3

**Natural Science (4 credits)**

Laboratory Science Elective .....	4
Recommended: CHEM 110G, Principles and Applications of Chemistry	

**Technical (12 credits)**

C E 450, Engineering Economy and Law.....	3
Technical Electives.....	9

**Engineering Technology (64 credits)**

E T 101, Introduction to Engineering Technology.....	1
E T 120, Computation and Presentation Software .....	3
E T 182, Digital Logic .....	3
E T 190, Applied Circuits.....	3
E T 191, Applied Circuits Laboratory.....	1
E T 246, Electronic Devices I.....	4
E T 262, Software Technology I I .....	3
E T 272, Electronic Devices II .....	4
E T 282, Digital Electronics.....	4
E T 302, Manufacturing Data Analysis.....	3
E T 314, Communication Systems I .....	3
E T 324, Linear Integrated Circuits .....	4
E T 344, Microcomputer Systems .....	3
E T 362, Software Technology II.....	3
E T 377, Computer Networking .....	3
E T 381, Renewable Energy Technologies.....	3
E T 398, Digital Systems .....	3
E T 402, Instrumentation .....	3
E T 410, Senior Seminar.....	1
E T 440, Senior Design.....	2
E T 441, Senior Project .....	2
E T 444, Hardware and Software Senior Design.....	3

ET 462, Remote Access Operating systems and Advanced Scripting .....3  
 \* Students must complete 15 total credits from Area IV and V, with at least six credits from each area.

#### Recommended Freshman Year (29 credits)

Oral Communications elective.....	3
ET 101, Introduction to Engineering Technology.....	1
ET 120, Computation and Presentation Software .....	3
ET 182, Digital Logic .....	3
ET 190, Applied Circuits.....	3
ET 191, Applied Circuits Laboratory.....	1
ENGL 111G, Rhetoric and Composition.....	4
MATH 190G, Trigonometry and Precalculus .....	4
PHYS 211G/211GL, General Physics I, General Physics Lab.....	4
Humanities and Fine Arts elective .....	3

Students meet the requirements for a concentration by selecting specific technical electives:

#### CONCENTRATION: Renewable Energy Technologies

What follows is a list of courses and the corresponding basic study areas that will result in an emphasis in Renewable Energy Technology within the ECET major. Students can fulfill this Concentration by using their three required technical electives without any additional credit requirements.

#### Required

##### Two Courses (6 credits) from:

CH E 466, Fuel Cell and Hydrogen Technology.....	3
E E 332, Introduction to Electric Power Engineering.....	4
ET 304, Electrical Machines .....	3
ET 365, Building Machines.....	3
ET 374, Electric Power Distribution.....	3
ET 382, Solar Energy Technologies .....	3
ET 384, Wind and Water Energy Technologies .....	3
ET 401, Heating and Air Conditioning Systems .....	3

##### One course from:

ET 420, Senior Internship (must be related to a renewable energy field)
ET 435, Senior Design and Project Management (project must be related to a renewable energy application)
ET 440, Senior Design (must be related to a renewable energy application)
ET 441, Senior Project (must be related to a renewable energy application)

**DEGREE: Bachelor of Science in Engineering Technology**  
**MAJOR: Engineering Technology - Information (Total Credits 129)**

Seeking accreditation by the Technology Accreditation Commission of ABET Inc.

#### GENERAL EDUCATION (42 Credits)

##### State of New Mexico Common Core (37 credits)

##### Area I: Communications (10 credits)

ENGL 111, Rhetoric and Composition.....	4
Written Communications elective .....	3
Recommended: ENGL 218G, Technical and Professional Communication	
Oral Communications Elective.....	3
Recommended: COMM 265G, Principles of Human Communication	

##### Area II: Mathematics (3 credits)

MATH 121, College Algebra .....	3
---------------------------------	---

##### Area III: Laboratory Science (8 credits)

Biology, Chemistry, or Physics electives (w/Lab).....	8
---	---

##### Area IV: Social & Behavioral Sciences (6 or 9 credits\*)

Anthropology, Economics, Political Science, Psychology, Sociology electives.....	6-9
--	-----

##### Area V: Humanities & Fine Arts (6 or 9 credits\*)

History, Philosophy, Literature, Art, Music, Dance, or Theater electives.....	6-9
---	-----

##### Institution Specific General Education (6 credits)

Viewing a Wider World electives .....	6
---------------------------------------	---

#### PROGRAM SPECIFIC REQUIREMENTS (77 credits)

##### Mathematics (10 credits)

MATH 190, Trigonometry and Precalculus .....	4
MATH 235, Calculus for the Technical Student I .....	3
MATH 279, Introduction to Finite Mathematics .....	3

##### Technical (21 credits)

BCIS 350, Information System Analysis and Design.....	3
BCIS 480, E-Commerce Security .....	3
Business Elective .....	3
Management Elective.....	3
Technical Electives.....	9

##### Engineering Technology (56 credits)

ET 101, Introduction to Engineering Technology.....	1
ET 120, Computation and Presentation Software .....	3
ET 182, Digital Logic .....	3
ET 160, Basic Computer Operating Systems.....	3
ET 245, Computer Hardware Fundamentals.....	3
ET 255, Web Systems .....	3
ET 262, Software Technology I I.....	3
ET 280, Introduction to Multimedia .....	3
ET 302, Manufacturing Data Analysis.....	3
ET 339, Computer Forensics .....	3
ET 344, Microcomputer Systems .....	3
ET 362, Software Technology II .....	3
ET 377, Computer Networking I .....	3
ET 410, Senior Seminar .....	1
ET 435, Senior Design and Project Management.....	3
ET 457, Introduction to Information Security Technology.....	3
ET 458, Database Technology for Engineering.....	3
ET 462, Remote Access Operating Systems & Advanced Scripting.....	3
ET 463, Computer Systems Administration.....	3
ET 477, Computer Networking II.....	3

\* Students must complete 15 total credits from Area IV and V, with at least six credits from each area.

##### Recommended Freshman Year (33 credits)

Oral Communication elective.....	3
ENGL 111G, Rhetoric and Composition.....	4
ET 101, Introduction to Engineering Technology.....	1
ET 120, Computation and Presentation Software .....	3
ET 182, Digital Logic .....	3
ET 160, Basic Computer Operating Systems.....	3
MATH 121G, College Algebra .....	3
MATH 190G, Trigonometry and Precalculus .....	3
Laboratory Science elective .....	4
Social & Behavioral Science elective .....	3
Humanities & Fine Arts elective .....	3

**DEGREE: Bachelor of Science in Engineering Technology**  
**MAJOR: Engineering Technology - Mechanical (Total credits 130)**

Accredited by the Technology Accreditation Commission of ABET, Inc.

#### GENERAL EDUCATION (43 Credits)

##### State of New Mexico Common Core (37 credits)

##### Area I: Communications (10 credits)

ENGL 111, Rhetoric and Composition.....	4
Written Communications Elective .....	3
Recommended: ENGL 218G, Technical and Professional Communication	
Oral Communications Elective.....	3
Recommended: COMM 265G, Principles of Human Communication	

##### Area II: Mathematics (4 credits)

MATH 190, Trigonometry and Precalculus .....	4
--	---



<b>Area III: Laboratory Science (8 credits)</b>	
CHEM 110G, Principles and Applications of Chemistry .....	4
PHYS 211G, General Physics I (w/Lab) .....	4
<b>Area IV: Social &amp; Behavioral Sciences (6 or 9 credits*)</b>	
Anthropology, Economics, Political Science, Psychology, Sociology electives ..	6-9
<b>Area V: Humanities &amp; Fine Arts (6 or 9 credits*)</b>	
History, Philosophy, Literature, Art, Music, Dance, or Theater electives .....	6-9
<b>Institution Specific General Education (6 credits)</b>	
Viewing a Wider World electives .....	6
<b>PROGRAM SPECIFIC REQUIREMENTS (87 credits)</b>	
<b>Mathematics (6 credits)</b>	
MATH 235, Calculus for the Technical Student I .....	3
MATH 236, Calculus for the Technical Student II .....	3
<b>Natural Science (4 credits)</b>	
PHYS 212G, General Physics II (w/lab) .....	4
<b>Technical (15 credits)</b>	
C E 450, Engineering Economy and Law .....	3
Business, Management, Marketing, or Math elective .....	3
Technical electives .....	9
<b>Engineering Technology (63 credits)</b>	
E T 101, Introduction to Engineering Technology .....	1
E T 110, Introduction to Computer-Aided Drafting and Design+ .....	3
E T 120, Computation and Presentation Software+ .....	3
E T 182, Digital Logic+ .....	3
E T 190 & 191, Applied Circuits (w/Lab) .....	4
E T 210, Computer-Aided Design+ .....	2
E T 217, Manufacturing Processes (w/Lab) .....	4
E T 240, Applied Statics .....	3
E T 262, Software Technology I+ .....	3
E T 302, Manufacturing Data Analysis .....	3
E T 306, Fundamental and Applied Thermodynamics (w/Lab) .....	4
E T 308, Fluid Technology (w/Lab) .....	4
E T 310, Applied Strength of Materials (w/Lab) .....	4
E T 241, Applied Dynamics .....	3
E T 328, Kinematics of Machines+ .....	3
E T 365, Building Utilities or E T 381, Renewable Energy Technologies .....	3
E T 396, Heat Transfer and Applications+ .....	3
E T 410, Senior Seminar .....	1
E T 422, Mechanical Measurements+ or E T 402, Instrumentation+ .....	3
E T 426, Analysis/Design of Machine Elements+ .....	3
E T 435, Senior Design and Project Management+ .....	3
* Students must complete 15 total credits from Area IV and V, with at least six credits from each area.	
+ Course with built-in laboratory component.	
Additionally, it is strongly recommended that students select the following elective courses:	
<b>Social &amp; Behavioral Science Elective:</b> ECON 251G or 252G, Micro- or Macro Economics	
<b>Humanities and Fine Arts Elective:</b> PHIL 240G, Ethics for Engineering and Scientific Careers	
<b>Viewing a Wider World Elective I:</b> Select one Business Administration, Business Law, Finance, or Management course	
<b>Viewing a Wider World Elective II:</b> Select one from:	
• College of Agriculture: AG E 337V, Natural Resource Economics or EPWS 380V, Ecosystem Earth: The Impact of Human Activities	
• College of Arts and Sciences: PHYS 303V, Energy and Society in the New Millennium or HIST 302V, Science in Modern Society or HIST 303V, History of Technology	
<b>Recommended Freshman Year (35 credits)</b>	
CHEM 110G, Principles and Applications of Chemistry .....	4

E T 101, Introduction to Engineering Technology .....	1
E T 110, Introduction to Computer-Aided Drafting and Design .....	3
E T 120, Computation and Presentation Software .....	3
E T 182, Digital Logic .....	3
E T 190 & 191, Applied Circuits (w/Lab) .....	4
E T 210, Computer-Aided Design .....	2
ENGL 111G, Rhetoric and Composition .....	4
MATH 190G, Trigonometry and Precalculus .....	4
PHYS 211G, General Physics II (w/Lab) .....	4
Humanities & Fine Arts Elective .....	3

Students meet the requirements for a concentration by selecting specific technical electives:

#### **CONCENTRATION: Renewable Energy Technologies**

E T 381, Renewable Energy Technologies .....	3
--	---

#### **2 Courses (6 cr.) from:**

CH E 466, Fuel Cell and Hydrogen Technology .....	3
E T 304, Electrical Machines .....	3
E T 365, Building Utilities .....	3
E T 374, Electric Power Distribution .....	3
E T 382, Solar Energy Technologies .....	3
E T 384, Wind and Water Energy Technologies .....	3
E T 401, Heating and Air Conditioning Systems .....	3
E E 332, Introduction to Electric Power Engineering .....	4

#### **One course from:**

E T 420, Senior Internship (must be related to a renewable energy field)
E T 435, Senior Design and Project Management (project must be related to a renewable energy application)
E T 440, Senior Design (must be related to a renewable energy application)
E T 441, Senior Project (must be related to a renewable energy application)

#### **INFORMATION AND COMMUNICATION TECHNOLOGY**

Information and Communication Technology is a distance education, degree completion program. The program focuses on the knowledge and experience that is required to design, implement, and manage a variety of information systems. The curriculum includes the study of computer hardware, application and operating systems software, system integration, database design and management, networking, and network security. Graduates of the program can expect to enter the workforce with titles that include Information Technologist, Systems or Network Administrator, Project Manager, Database Administrator, and Computer Support Specialist.

The program is designed to be an educational path to the baccalaureate degree for graduates of computer and technology-related associate degree programs from community colleges or other two-year institutions. It is also a viable degree path for students who have completed the freshmen and sophomore years of computer or technology-related programs at four-year institutions including, of course, New Mexico State University.

The ICT program is a distance education program and does not require any on-campus visits, although a limited number of optional, on-campus laboratories may be offered for certain classes. Students who are successful in distance education programs typically are self-motivated, do not rely heavily on face-to-face instruction, work independently, and can remain on schedule. Students must have familiarity with, and access to:

- a computer with a CD/DVD drive
- a current web browser
- a high speed Internet connection
- e-mail capability
- a sound card, and
- Microsoft Office

This program was not designed to be an engineering or engineering technology program although there is significant overlap with one of the engineering technology programs offered by the department. **Thus, the Information and Communication Technology Program differs from the other baccalaureate programs offered by the departments in the College of Engineering in that it is not accredited by ABET Inc., the accrediting agency for engineering and technology. However, the ICT program is accredited under New Mexico State University's**

accreditation by the Higher Learning Commission of the North Central Association of Colleges and Schools.

**DEGREE: Bachelor of Information and Communication Technology (128 credits)**

**PREPARATORY (80 credits)**

As a completion program, entering students are expected to have completed two years of college-level work and satisfied the following requirements. Those who have not must do so.

**GENERAL EDUCATION (43 credits)**

**State of New Mexico Common Core (35 credits)**

**Area I: Communications (9 credits)**

Freshman Composition.....	3
Written Communications elective .....	3
Oral Communications elective.....	3

**Area II: Mathematics (3 credits)**

College Algebra .....	3
-----------------------	---

**Area III: Laboratory Science (8 credits)**

Laboratory Science electives .....	8
------------------------------------	---

**Area IV: Social & Behavioral Sciences (6 or 9 credits\*)**

Anthropology ,Economics, Political Science, Psychology, Sociology electives ...	6-9
---	-----

**Area V: Humanities & Fine Arts (6 or 9 credits\*)**

History, Philosophy, Literature, Art, Music, Dance, Theater, and Religion electives .....	6-9
---	-----

**Miscellaneous (6 credits)**

Object Oriented Programming.....	3
Computation and Presentation Software or Microsoft Office.....	3

**Electives (39 credits)**

(Typically content courses from an A S or AAS).....	39
---	----

**PROGRAM SPECIFIC REQUIREMENTS (48 credits)**

**Institution Specific General Education (6 credits)**

Viewing a Wider World electives .....	6
---------------------------------------	---

**Information and Communication Technology (42 Credits)**

ICT 320, Applications Software for Technologists.....	3
ICT 339, Computer Forensics.....	3
ICT 345, Computer Hardware Fundamentals .....	3
ICT 360, Operating Systems for ICT .....	3
ICT 362, Software Technology II .....	3
ICT 377, Computer Networking .....	3
ICT 435, Senior Design or Internship.....	3
ICT 450, Advanced Topics in ICT.....	3
ICT 457, Introduction to Information Security Technology.....	3
ICT 458, Database Design and Applications .....	3
ICT 460, Advanced Topics in Multimedia Technologies .....	3
ICT 462, Remote Access Operating Systems.....	3
ICT 463, Computer Systems Administration .....	3
ICT 477, Computer Networking II .....	3

\* Students must complete 15 total credits from Area IV and V, with at least six credits from each area.

**Surveying Engineering**

Surveying Engineering involves the application of knowledge to the analysis, design, and execution of surveying and mapping projects and the design of land mapping and information systems. Surveyors rely on an understanding of the science of surveying measurement and analysis, the legal principles of boundary location, the laws related to boundaries and land use, and applicable mathematical and computational theories and principles when performing this work. Positional accuracy, land planning and development concepts pertinent to subdivision sciences such as geodesy are each a part of professional surveying. Surveying engineers work for private surveying or engineering firms, for City,

County, State or Federal Highway Departments, for State Lands Commissions, for the US Forest Service and for the US Bureau of Land Management.

The mission of the Department of Engineering Technology and Surveying Engineering is to provide men and women with the rigorous, fundamental education needed to enter and succeed in the surveying and surveying-related professions.

To accomplish this mission, the department will introduce students to the theory and application of recognized surveying principles.

**DEGREE: Bachelor of Science in Surveying Engineering (total credits 131)**

Students must take the Fundamentals of Surveying examination prior to graduation.

**GENERAL EDUCATION (43 Credits)**

**State of New Mexico Common Core (37 credits)**

**Area I: Communications (10 credits)**

ENGL 111, Rhetoric and Composition.....	4
Written Communications elective .....	3
Recommended: ENGL 218G, Technical and Professional Communication	
Oral Communications elective.....	3
Recommended: COMM 265G, Principles of Human Communication	

**Area II: Mathematics (4 credits)**

MATH 191, Calculus and Analytic Geometry I .....	4
--	---

**Area III: Laboratory Science (8 credits)**

GEOL 111G, Survey of Geology (w/lab).....	4
PHYS 215, Engineering Physics I (w/lab).....	4

**Area IV: Social & Behavioral Sciences (6 or 9 credits\*)**

Anthropology , Economics, Political Science, Psychology, Sociology electives .....	6-9
--	-----

**Area V: Humanities & Fine Arts (6 or 9 credits\*)**

History, Philosophy, Literature, Art, Music, Dance, or Theater electives.....	6-9
---	-----

**Institution Specific General Education (6 credits)**

Viewing a Wider World electives .....	6
---------------------------------------	---

**PROGRAM SPECIFIC REQUIREMENTS (88 credits)**

**Mathematics (10 credits)**

MATH 192, Calculus and Analytic Geometry II.....	4
MATH 280, Linear Algebra or MATH 480, Vector Spaces & Matrix Algebra .....	3
STAT 371, Statistics for Engineers and Scientists I.....	3

**Natural Science (4 credits)**

PHYS 216, Engineering Physics II (w/lab) or PHYS 214, Electricity and Magnetism (w/lab) or PHYS, Heat, Light and Sound (w/lab) .....	4
--	---

**Technical (12 credits)**

C E 450, Engineering Economy and Law.....	3
C S 187, Java Programming or E T 262, Software Technology I.....	3
DRFT 109, Computer Drafting Fundamentals .....	3
DRFT 153, Survey Drafting Applications.....	3

**Other (9 credits)**

BLAW 316, Legal Environment of Business .....	3
Mathematics and/or Natural Science electives.....	6

**Surveying Engineering (53 credits)**

SUR 101, Introduction to Surveying.....	1
SUR 222, Plane Surveying.....	3
SUR 264, Introduction to LIS.....	3
SUR 285, Introductory Photogrammetry .....	3
SUR 292, Public Land Survey System Boundaries .....	3
SUR 312, Legal Principles of Boundary Surveying .....	3
SUR 328, Principles and Practices of Construction Surveying .....	3
SUR 330, Computer Applications of Surveying.....	3
SUR 351, Intro Survey Measurements, Analysis, and Adjustments .....	3
SUR 361, Introduction to Geodesy .....	3
SUR 370, Control Surveying .....	3
SUR 401, Ethics and Professionalism in Surveying and Mapping.....	3

SUR 412, Advanced Topics in Boundary Surveying.....	3
SUR 450, Senior Project.....	1
SUR 451, Advanced Survey Measurements, Analysis and Adjustments.....	3
SUR 452, Land Development Design.....	3
SUR 461, Introduction to Satellite Geodesy.....	3
Surveying Engineering Electives.....	6

\* Students must complete 15 total credits from Area IV and V, with at least six credits from each area.

Additionally, it is strongly recommended that students select the following elective courses:

#### MINOR: Digital Electronic Applications (19 credits)

A grade of C (or better) is required in each class. No courses may be taken S/U. All prerequisites must be met before enrolling in a class. Engineering Technology students can meet most of the requirements for this minor by judicious use of their electives.

ET 182, Digital Logic.....	3
ET 282, Digital Electronics.....	4
ET 362, Software Technology II.....	3
ET 344, Microcontroller Systems.....	3
ET 398, Digital Systems.....	3
ET 444, Hardware and Software Design.....	3

#### MINOR: Information Technologies (18 credits)

A grade of C (or better) is required in each class. No courses may be taken S/U. All prerequisites must be met before enrolling in a class. Engineering Technology students can meet most of the requirements for this minor by judicious use of their electives.

BCIS 350, Information Systems Analysis and Design.....	3
ET 339, Computer Forensics.....	3
ET 377, Networking I.....	3
ET 362, Software Technology II or BCIS 322- Advanced Object-Oriented Programming.....	3

#### Choose one (1) of the following three paths for the additional 6 credits:

##### Path 1:

BCIS 480, E-Commerce Security.....	3
ET 477, Computer Networking II.....	3

##### Path 2:

BCIS 450, Systems Design, Development and Implementation or BCIS 475- Database Management System.....	3
ET 458, Database Technology for Engineering.....	3

##### Path 3:

ET 463, Computer System Administration.....	3
ET 457, Introduction to Information Security Technology or BCIS 482, Management of Information Security.....	3

#### MINOR: Manufacturing (18 credits)

A grade of C (or better) is required in each class. No courses may be taken S/U. All prerequisites must be met before enrolling in a class. Engineering Technology students can meet most of the requirements for this minor by judicious selection of their electives.

ET 110, Introduction to Computer-Aided Drafting and Design; or ET 210, Computer-Aided Design; or M E 159, Graphical Communication and Design; or similar approved course.....	3
ET 217/217L or I E 217/217L, Manufacturing Process/Laboratory; or M E 222, Introduction to Product Development.....	3/1 or 2/1 or 3
ET 305, Design for Manufacturing; or I E 424, Manufacturing Systems.....	3
ET 415, Manufacturing Management and Productivity; or I E 316, Methods Engineering; or E T 309V**, Manufacturing History and Technology.....	3
ET 482 or I E 482, Concepts in Computer Integrated Manufacturing.....	3
I E 310V, Continuous Quality Improvement; I E 365, Quality Control; or MGT 344, Production and Operations Management; or MGT 345V, Quality and Competitiveness: An International Perspective.....	3

\*\* Students majoring in Engineering Technology or Surveying Engineering may not use E T 309G as a technical elective, or to meet Viewing a Wider World General Education requirements.

#### MINOR: Renewable Energy Technologies (18 credits)

A grade of C (or better) is required in each class. No courses may be taken S/U. All prerequisites must be met before enrolling in a class. Engineering Technology students can meet most of the requirements for this minor by judicious use of their electives.

##### Selected 9 credits from:

E T 381/WERC 381, Renewable Energy Technologies.....	3
E T 382/WERC 382, Solar Energy Technologies.....	3
E T 384/WERC 384, Wind and Water Energy Technologies.....	3
E T 386, Sustainable Construction and Green Building Design.....	3

##### Select 6 credits from:

CH E/WERC 466, Fuel Cell and Hydrogen Technology.....	3
E E 332, Introduction to Electric Power Engineering.....	4
E T 365, Building Utilities.....	3
E T 304, Electric Machines.....	3
E T 374, Electric Power Distribution.....	3
E T 396 or M E 341 (not both), Heat Transfer and Applications.....	3
E T/M E 401, Heating and Air Conditioning Systems.....	3

Students may only take only one class from the following choices:

E T 420*, Senior Internship.....	1-6
E T 435*, Senior Design and Project Management.....	3
E T 440/441*, Senior Design and Senior Project.....	2
WERC 200, Intro. To Environmental Fundamentals.....	3
WERC 300, Intro. To Pollution Prevention and Application.....	3
WERC 350, Introduction to Energy, Environment and Risk Assessment.....	3

\* (must be related to a renewable energy field and approved by faculty advisor)

##### Select 3 credits from:

Note: if the selected class is outside the student's college it may also satisfy a Viewing a Wider World requirement:

AG E 337V, Natural Resource Economics or AGHE 380V, Ecosystem Earth; The Impact of Human Activities.....	3
E T 360V, Technology in Business and Society.....	3
ECON 337V, Natural Resource Economics or ECON 384V, Water Resource Economics.....	3
HON 378V, Technology and Policy: Energy Technology, Their Impact and Policy.....	3
PHYS 303V, Energy and Society in the New Millennium or HIST 302V, Science in Modern Society or HIST 303V, History of Technology.....	3

#### MINOR: Security Technology (18 credits)

A grade of C (or better) is required in each class. No courses may be taken S/U. All prerequisites must be met before enrolling in a class. Students must declare the minor before enrolling in upper division Criminal Justice courses.

E T/ICT 339, Computer Forensics.....	3
--------------------------------------	---

##### Select 6 credits from:

C J 321, Criminal Investigation and Intelligence.....	3
C J 412, Introduction to Security Technology and Loss Prevention.....	3
C J 425, Ethics in Criminal Justice.....	3

##### Select 3 credits from:

E T/ICT 457, Introduction to Information Security Technology.....	3
E T/ICT 458, Database Design and Application.....	3

##### Select 6 credits from:

C J 322, Organized Crime.....	3
C J 411, Nature of Crime.....	3
C J 432, Issues in Criminal Justice.....	3
C J 480, Criminal Justice Planning and Crime Analysis.....	3
C J 483, Terrorists.....	3
C J 484, Hate Crimes and Domestic Terrorism.....	3
E T/ICT 377, Computer Networking (non-E T majors only).....	3
E T/ICT 490, Selected Topics.....	3

**MINOR: Surveying Engineering (24 credits)**

SUR 222, Plane Surveying.....	3
SUR 264, Introduction to LIS.....	3
SUR 285, Photogrammetry.....	3
SUR 292, Public Lands and Survey System Boundaries.....	3
SUR 312, Legal Principles of Boundary Surveying.....	3
SUR 328, Principles and Practices of Construction Surveying or SUR 354, Advanced Plane Surveying).....	3
SUR 361, Introduction to Geodesy.....	3
Surveying elective.....	3

## INDUSTRIAL ENGINEERING

---

**Associate Professor Edward Pines, department head**

**Associate Professors** Mullen, Pines, Valles-Rosales; **Assistant Professors**

Huang, Kammerdiner, Sohn

(575) 646-4923

<http://ie.nmsu.edu/>

**DEGREE: Bachelor of Science in Industrial Engineering**

Industrial engineers design, develop, install and improve integrated systems of people, equipment, information, financial resources, software, materials, and energy. Industrial engineers work in a variety of manufacturing, health care, utility, retail, government and research settings, therefore the tools and methods of the industrial engineer are both varied and broad. They use knowledge and skills in engineering, mathematics, and physical and social sciences along with the principles and methods of engineering analysis and design to monitor and improve such systems. New Mexico State University's undergraduate degree program in Industrial Engineering prepares students to join the work force or pursue graduate education while setting the foundation for life-long learning.

Specifically, graduates of the program will be:

- able to apply various industrial engineering techniques in an integrated fashion to solve real world problems in process design and/or improvement;
- able to obtain meaningful employment or enroll in a graduate program; and
- prepared for a long-term, successful career sustained by life-long learning experiences.

In addition, the Engineering Accreditation Commission of ABET, Inc. criteria in conjunction with the Institute of Industrial Engineers, requires that:

- baccalaureate degree graduates will be able to demonstrate the ability to design, develop, implement and improve integrated systems that include people, materials, information, equipment and energy;
- industrial engineering curriculums include in-depth instruction allowing students to accomplish the integration of systems using appropriate analytical, computational and experimental practices; and
- that faculty teaching in industrial engineering departments show evidence of understanding professional practice and maintain currency in their respective professional areas. Program faculty must have responsibility and sufficient authority to define, revise, implement, and achieve program objectives.

**Requirements (Total credits 132)**

In addition to the university requirements for graduation, a student must have a 2.0 grade-point average in all departmental courses and take the Fundamentals of Engineering Examination prior to graduation.

**GENERAL EDUCATION (43 credits)****State of New Mexico Common Core (37 credits)****AREA I: COMMUNICATIONS (10 credits)**

ENGL 111G, Rhetoric and Composition.....	4
Written Communication Elective.....	3
Oral Communications Elective.....	3

**AREA II: MATHEMATICS (4 credits)**

MATH 191G, Calculus I.....	4
----------------------------	---

**AREA III: NATURAL SCIENCES (8 credits)**

CHEM 111G, General Chemistry I (with lab).....	4
PHYS 215, Engineering Physics I (with lab).....	4

**AREA IV: SOCIAL & BEHAVIORAL SCIENCES (6 or 9 credits\*)**

Economics, Political Science, Psychology, Sociology, and Anthropology electives.....	6-9
--	-----

**AREA V: HUMANITIES & FINE ARTS (6 or 9 credits\*)**

History, Philosophy, Literature, Art, Music, Dance, Theater, Foreign Language, and Religion electives.....	6-9
--	-----

**INSTITUTION SPECIFIC GENERAL EDUCATION (6 credits)**

Viewing a Wider World Elective.....	6
-------------------------------------	---

**PROGRAM SPECIFIC REQUIREMENTS (89 credits)****Mathematics (13 credits)**

MATH 192G, Calculus II.....	4
MATH 291G, Calculus III.....	3
MATH 392, Differential Equations.....	3
Math elective*.....	3

**Natural Science (7 credits)**

CHEM 112G or PHYS 216G.....	4
Science elective.....	3

**Engineering (23 credits)**

C E 233 or M E 236, Statics.....	3
CH E 361, Engineering Materials.....	3
M E 159, Graphical Communication and Design.....	2
Engineering Electives.....	15

**Industrial Engineering (46 credits)**

I E 110, Industrial Engineering Orientation.....	1
I E 151, Computational Methods I.....	3
I E 152, Introduction to Industrial Engineering.....	2
I E 217, Manufacturing Processes (with lab).....	3
I E 311, Engineering Data Analysis.....	3
I E 316, Methods Engineering.....	3
I E 351, Computation Methods II.....	3
I E 365, Quality Control.....	3
I E 413, Engineering Operations Research I.....	3
I E 423, Engineering Operations Research II.....	3
I E 424, Manufacturing Systems.....	3
I E 451, Engineering Economy.....	3
I E 460, Evaluation of Engineering Data.....	3
I E 467, Simulation of Modeling.....	4
I E 478, Facilities Planning and Design.....	3
I E 480, Senior Design.....	3

\*Students must complete 15 total credits from Area IV and V, with at least six credits from each area.

**Recommended Freshman Year (35 credits)**

CHEM 111G, General Chemistry I.....	4
ENGL 111G, Rhetoric and Composition.....	4
I E 110, Industrial Engineering Orientation.....	1
I E 151, Computational Methods in Industrial Engineering I.....	3
I E 152, Introduction to Industrial Engineering.....	2
M E 159, Graphical Communication and Design.....	2
MATH 191G, Calculus and Analytic Geometry I.....	4
MATH 192G, Calculus and Analytic Geometry II.....	4
PHYS 215G, Engineering Physics I (w/Lab).....	4
Humanities and Fine Arts Elective.....	1
Science elective.....	4



# MECHANICAL ENGINEERING and AEROSPACE ENGINEERING

**Associate Professor Ian H. Leslie, interim department head**

**Professors** Genin<sup>†</sup>, Hardee<sup>\*†</sup>, Ma, Smith\* (emeritus); **Associate Professors** Butcher, Choo, Conley<sup>†</sup>, Garcia, Leslie, Park, Pederson<sup>†</sup> (emeritus), Sevostianov, Shashikanth; **Assistant Professors** Cai, Lee, Sanyal, Shu, Wei; **College Professor** Donaldson\*,  
(575) 646-3502

<http://mae.nmsu.edu/>

\*Registered Professional Engineer (NM)

<sup>†</sup>Registered Professional Engineer (State other than NM)

## DEGREE: Bachelor of Science in Mechanical Engineering

The mechanical engineering program prepares students for a wide range of professional engineering careers in such areas as research and development, design, facilities operation and maintenance, management, and production. Graduates of the program will be prepared to apply engineering sciences, mathematics, computational methods, modern experimental methods, and effective communication skills to problems of interest in industry and government or scholarly topics. Employment opportunities for graduates are extensive. These include energy and utility, manufacturing, automotive, aerospace, defense and space, research and development, and many others. The emphasis in the curriculum is on engineering sciences (solid mechanics, thermal sciences, fluid mechanics, and materials science), mathematics, engineering analysis, engineering design, general sciences, and communication balanced with general education topics and electives. Graduates of the program will also be prepared for graduate studies (subject to grade-point and standardized test qualifications). Students will be prepared to take the fundamentals of engineering examination (and are encouraged to do so) as a step towards professional registration.

### Mechanical Engineering Educational Goals and Objectives

The goals of the Department of Mechanical Engineering, as set forth in the departmental strategic plan, are:

- to educate those who will advance knowledge and become the future leaders of industry and academia;
- to conduct both basic and applied research in mechanical engineering and related interdisciplinary areas; and
- to provide service to the profession, to the State of New Mexico, to the country, and to the future development of engineering worldwide.

A critical focus within the department is to afford undergraduates of varying backgrounds and abilities every opportunity for achieving success in the mechanical engineering profession. To address this focus, the faculty of the mechanical engineering department, with input from other constituents, have established the following educational objectives for the undergraduate program:

- **Technical Knowledge:** Graduates will possess a mastery of the fundamentals of mechanical engineering necessary to be productive and innovative engineers in industry or government, prosperous entrepreneurs, and/or succeed in graduate or other professional schools, and to advance in their employment.
- **Problem-Solving Skills:** Graduates will be able to formulate, analyze, and creatively participate in the solution of multidisciplinary technical problems through the use of modern engineering tools, be they experimental, analytical or computational.
- **Communication Skills:** Graduates will be able to formulate, analyze, and creatively participate in the solution of multidisciplinary technical problems through the use of modern engineering tools, be they experimental, analytical or computational.
- **Professionalism:** Graduates will possess the skills needed to fulfill their professional duties and responsibilities in teamwork, collegiality, ethics, technical leadership, business acumen, and lifelong learning.

In addition to the NMSU requirements for graduation, a student must obtain a minimum grade of C in mechanical or aerospace engineering courses.

## REQUIREMENTS (Total credits 130)

### GENERAL EDUCATION (43 Credits)

#### State of New Mexico Common Core (37 credits)

##### Area I: Communications (10 credits)

ENGL 111, Rhetoric and Composition.....	4
Written Communications Elective .....	3
Oral Communications Elective.....	3

##### Area II: Mathematics (4 credits)

MATH 191G, Calculus I .....	4
-----------------------------	---

##### Area III: Natural Science (8 credits)

CHEM 111, General Chemistry I (w/lab).....	4
CHEM 112, General Chemistry II (w/lab) .....	4

##### Area IV: Social & Behavioral Sciences (6 or 9 credits\*)

Economics, Political Science, Psychology, Sociology and Anthropology electives .....	6-9
---	-----

##### Area V: Humanities & Fine Arts (6 or 9 credits\*)

History, Philosophy, Literature, Art, Music, Dance, Theater, Foreign Language, and Religion electives.....	6-9
---	-----

#### Institution Specific General Education (6 credits)

Viewing a Wider World Electives .....	6
---------------------------------------	---

### PROGRAM SPECIFIC REQUIREMENTS (87 credits)

#### Mathematics (13 credits)

MATH 192G, Calculus and Analytic Geometry II.....	4
MATH 291G, Calculus and Analytic Geometry III .....	3
MATH 392, Introduction to Ordinary Differential Equations.....	3
Math Elective (MATH 391, 471, 472, 473, 480, STAT 371, or I E 310) .....	3

#### Natural Science (6 credits)

PHYS 215, Engineering Physics I.....	3
PHYS 216, Engineering Physics II .....	3

#### Engineering (9 credits)

C E 301, Mechanics of Materials.....	3
CH E 361, Engineering Materials .....	3
E E 201, Networks I.....	3

#### Mechanical Engineering (59 credits)

M E 102, Mechanical Engineering Orientation .....	1
M E 159, Graphical Communication and Design .....	2
M E 222, Product Development/ Laboratory .....	3
M E 236, Engineering Mechanics I .....	3
M E 237, Engineering Mechanics II .....	3
M E 240, Thermodynamics.....	3
M E 261, Mechanical Engineering Problem Solving .....	4
M E 326, Mechanical Design.....	3
M E 328, Engineering Analysis I.....	3
M E 338, Fluid Mechanics .....	3
M E 340, Applied Thermodynamics .....	3
M E 341, Heat Transfer.....	3
M E 345, Experimental Methods I.....	3
M E 425, Design of Machine Elements .....	3
M E 426, Design Project Laboratory I.....	3
M E 427, Design Project Laboratory II.....	3
M E 445, Experimental Methods II .....	3
M E 449, Mechanical Engineering Senior Seminar.....	1
Mechanics Elective (M E 331, M E 332, or M E 333) .....	3
Mechanical engineering senior electives.....	6

\* Students must complete 15 total credits from Area IV and V, with at least six credits from each area.

**MINOR: Mechanical Engineering (41 credits)****Prerequisites (20 credits)**

C E 301, Mechanics of Materials.....	3
MATH 191, Calculus and Analytic Geometry I.....	4
MATH 192, Calculus and Analytic Geometry II.....	4
MATH 291, Calculus and Analytic Geometry III.....	3
MATH 392, Introduction to Ordinary Differential Equations.....	3
PHYS 215, Engineering Physics I.....	3

**Mechanical Engineering (21 credits)**

M E 236, Engineering Mechanics I.....	3
M E 237, Engineering Mechanics II.....	3
M E 240, Thermodynamics.....	3
M E 328, Engineering Analysis I.....	3
M E 338, Fluid Mechanics.....	3
M E 341, Heat Transfer.....	3
One 400 level Mechanical Engineering Elective.....	3

**DEGREE: Bachelor of Science in Aerospace Engineering**

The aerospace engineering program prepares students for a range of professional engineering careers in aerospace and related professions. The aerospace engineering curriculum covers the important classical areas of low and high speed aerodynamics, propulsion, orbital mechanics, flight mechanics and control, aerospace structures, and laboratory practice. In addition, the principles of systems engineering and design that are necessary to conceive, design, analyze and troubleshoot complex engineering systems are covered extensively and are considered to be especially important in the overall educational experience. Students will also be encouraged to participate in significant non-classroom experiences, including co-ops and internships, industrial and laboratory field trips, guest speakers from outside NMSU, the New Mexico Space Grant Program, and special seminar programs on current topics in aerospace. Aerospace engineers find employment in areas of launch vehicles, space vehicles and missions, aircraft systems design, land and sea vehicle design, robotics and automated manufacturing, safety, and other areas. The aerospace engineering background also allows graduates to pursue careers in non-aerospace fields of engineering. Graduates of the aerospace engineering program will be prepared to apply engineering sciences, mathematics, computational methods, modern experimental methods, effective communication skills, and systems engineering principles to problems of interest in industry, and in research and development. The aerospace engineering program is also intended to prepare students to pursue graduate study, which can be of significant benefit in the aerospace profession. The general goals of the aerospace engineering program, as well as the program educational objectives, will be the same as those stated above for the mechanical engineering program.

Requirements (Total credits 130)

In addition to the NMSU requirements for graduation, a student must obtain a minimum grade of C in all mechanical and aerospace engineering courses.

**GENERAL EDUCATION (43 Credits)****State of New Mexico Common Core (37 credits)****Area I: Communications (10 credits)**

ENGL 111, Rhetoric and Composition.....	4
Written Communications Elective.....	3
Oral Communications Elective.....	3

**Area II: Mathematics (4 credits)**

MATH 191G, Calculus I.....	4
----------------------------	---

**Area III: Natural Science (8 credits)**

CHEM 111G, General Chemistry I (w/lab).....	4
CHEM 112G, General Chemistry II (w/lab).....	4

**Area IV: Social & Behavioral Sciences (6 or 9 credits\*)**

Economics, Political Science, Psychology, Sociology, and Anthropology electives.....	6-9
--	-----

**Area V: Humanities & Fine Arts (6 or 9 credits\*)**

History, Philosophy, Literature, Art, Music, Dance, Theater, Foreign Language, and Religion electives.....	6-9
--	-----

**Institution Specific General Education (6 credits)**

Viewing a Wider World Elective.....	6
-------------------------------------	---

**PROGRAM SPECIFIC REQUIREMENTS (87 credits)****Mathematics (13 credits)**

MATH 192G, Calculus and Analytic Geometry II.....	4
MATH 291G, Calculus and Analytic Geometry III.....	3
MATH 392, Introduction to Ordinary Differential Equations.....	3
Math Elective (MATH 391, 471, 472, 473, 480, STAT 371, or I E 310).....	3

**Natural Science (6 credits)**

PHYS 215, Engineering Physics I.....	3
PHYS 216, Engineering Physics II.....	3

**Engineering (9 credits)**

C E 301, Mechanics of Materials.....	3
CH E 361, Engineering Materials.....	3
E E 201, Networks I.....	3

**Mechanical Engineering (29 credits)**

A E 102, Introduction to Aerospace Engineering.....	1
M E 159, Graphical Communication and Design.....	2
M E 222, Product Development/ Laboratory.....	3
M E 236, Engineering Mechanics I.....	3
M E 237, Engineering Mechanics II.....	3
M E 240, Thermodynamics.....	3
M E 261, Mechanical Engineering Problem Solving.....	4
M E 328, Engineering Analysis I.....	3
M E 341, Heat Transfer.....	3
M E 345, Experimental Methods I.....	3
M E 449, Mechanical Engineering Senior Seminar.....	1

**Aerospace Engineering (30 credits)**

A E 339, Aerodynamics I.....	3
A E 362, Orbital Mechanics and the Space Environment.....	3
A E 363, Aerospace Structures.....	3
A E 364, Flight Dynamics and Controls.....	3
A E 439, Aerodynamics II.....	3
A E 419, Propulsion.....	3
A E 424, Aerospace Systems Engineering.....	3
A E 428, Aerospace Capstone Design Laboratory.....	3
A E 447, Aerofluids Laboratory.....	3
Aerospace engineering senior elective.....	3

\* Students must complete 15 total credits from Area IV and V, with at least six credits from each area.

**MINOR: Aerospace Engineering (44 credits)****Prerequisites (17 credits)**

MATH 191, Calculus and Analytic Geometry I.....	4
MATH 192, Calculus and Analytic Geometry II.....	4
MATH 291, Calculus and Analytic Geometry III.....	3
MATH 392, Introduction to Ordinary Differential Equations.....	3
PHYS 215, Engineering Physics I.....	3

**Mechanical Engineering (9 credits)**

M E 236, Engineering Mechanics I.....	3
M E 237, Engineering Mechanics II.....	3
M E 240, Thermodynamics.....	3

**Aerospace Engineering (12 credits)**

A E 339, Aerodynamics I.....	3
A E 439, Aerodynamics II.....	3
A E 364, Flight Dynamics and Control.....	3
A E 419, Propulsion.....	3

**Select 3 credits from the following:**

A E 362, Orbital Mechanics & Space Environment.....	3
A E 363, Aerospace Structures.....	3

**Select 3 credits from the following:**

A E 362, Orbital Mechanics & Space Environment .....	3
A E 363, Aerospace Structures.....	3
A E 424, Aerospace Systems Engineering.....	3
A E 447, Aerofluids Laboratory.....	3

# COLLEGE of EXTENDED LEARNING

Interim Dean and Associate Provost • *Roberta Derlin*

Academic Program Coordinator • *Kelley S. Hestir*

---

## **Bachelor of Applied Studies Bachelor of Individualized Studies**

The College of Extended Learning extends New Mexico State University's reach beyond traditional academic programs to provide educational opportunities for students to meet their academic, professional, and personal learning goals. The College of Extended Learning offers flexible degree programs in the Bachelor of Applied Studies and the Bachelor of Individualized Studies, giving students the opportunity to develop their own interdisciplinary studies program, appropriate to their unique educational and career goals.

The College of Extended Learning is located in Milton Hall, room 185. Contact by calling (575) 646-8231 or (800) 821-1574, or <http://extended.nmsu.edu/contact>. For current information visit <http://extended.nmsu.edu/>

### **DEGREE: Bachelor of Applied Studies**

The Bachelor of Applied Studies (BAS) degree promotes the mission and purpose of NMSU by making available flexible degree options and by providing a pathway of study for community college graduates with Associate of Applied Science (AAS,) or equivalent degree, from an accredited institution. It also helps minimize credit loss for associate degree graduates when they want to pursue a baccalaureate degree at NMSU. The student population targeted for this program differs significantly from traditional degree programs at NMSU. The BAS offers new opportunities for current and prospective students, and welcomes those who are employed full-time, completing their degree at a distance, veterans, active duty military personnel or active duty family, transfers from other institutions, or returning to college after time away.

#### **BAS Admission Requirements**

Students seeking admission to the BAS program must have an Associate of Applied Science or similar degree from a regionally accredited institution and must clearly identify their career or educational goals. For admission to the BAS program, you must:

- Have an Associate of Applied Science or a similar degree from a regionally accredited institution
- Have a cumulative grade point average of 2.0 or above
- Demonstrate basic academic skills in English and mathematics at NMSU (see Regulations - Basic Academic Skills)
- Have not yet completed the requirements for, or simultaneously be a candidate for, another baccalaureate degree or a graduate degree
- Develop, in consultation with a BAS advisor, a Program of Study that builds on existing coursework and meets the stated education or career goals
- Submit the application, which requires well written, clearly articulated, education and/or career goals, and a proposed Program of Study, by the 30 day deadline as designated by the academic advisor

Additional information and the BAS application are available on the CEL website at <http://extended.nmsu.edu/>. Applications are accepted throughout the year and may be submitted by students from any major, or college within the NMSU system. Students are accepted to the program by the college associate dean, only upon approval of their application. Students may not declare the BAS major prior to being accepted to the program.

#### **Degree Requirements**

Once admitted into the program, you must:

- Maintain a 2.0 grade point average
- Complete the total number of credits as determined during the application process (Note: a maximum of 30 credit hours in course subjects offered by the NMSU College of Business may be counted towards the degree.)
- Pass all courses approved with a grade of C- or higher

To graduate from the Bachelor of Applied Studies program, you must:

- Complete a minimum of 128 credit hours (or more, depending on your program of study)
- Complete a minimum of 48 credit hours of upper-division courses (300-499 level) including six hours of Viewing a Wider World
- Complete the university's general education core requirements (at least 35 credit hours of approved New Mexico Common Core courses)
- Not have completed the requirements for, or be a candidate for another baccalaureate degree

### **DEGREE: Bachelor of Individualized Studies**

The Bachelor of Individualized Studies (BIS) program is ideal for students with academic and career aspirations that require inter- or multi-disciplinary study. The program attracts motivated and self-directed students who feel constrained by the specialized nature of traditional degree programs and want to design their own, personalized plan of study. Other students, particularly those returning to the university after years away, or those with full-time jobs, choose the BIS degree because they have specific personal or job-related academic needs that can be met most efficiently through the BIS.

#### **BIS Admission Requirements**

Students seeking admission to the BIS program must:

- Demonstrate basic academic skills in English and mathematics at NMSU (see Regulations - Basic Academic Skills)
- Have a minimum of 28 credit hours with a cumulative grade point average of 2.0 or above
- Have not yet completed the requirements for, or simultaneously be a candidate for, another baccalaureate degree or a graduate degree
- Develop, in consultation with a BIS advisor, a Program of Study that builds on the applicant's existing coursework and meets the stated education or career goals
- Submit the application, which requires well written, clearly articulated, education and/or career goals, and a proposed Program of Study, by the 30 day deadline as designated by the academic advisor.

Additional information and the BIS application are available on the CEL website at <http://extended.nmsu.edu/>. Applications are accepted throughout the year and may be submitted by students from any major, or college within the NMSU system. Students are accepted to the program by the college associate dean, only upon approval of their application. Students may not declare the BIS major prior to being accepted to the program.

#### **Degree Requirements**

Once admitted into the BIS program, you must:

- Maintain a 2.0 GPA
- Complete the total number of credits as determined during the application process (Note: a maximum of 30 credit hours in course subjects offered by the NMSU College of Business may be counted towards the degree).
- Pass all courses approved with a grade of C- or higher

To graduate from the Bachelor of Individualized Studies program, you must:

- Complete a minimum of 128 credit hours (or more, depending on the Program of Study)
- Complete a minimum of 48 credit hours of upper-division courses (300-499) including six hours of Viewing a Wider World
- Complete the University's general education core requirements (at least 35 hours of approved New Mexico Common Core courses)
- Not have completed the requirements for, or be a candidate for another baccalaureate degree



### Focused Studies

The College of Extended Learning works closely with other NMSU Colleges, and the NMSU Community College academic departments and advisory boards, to establish focused studies for associate degree graduates seeking a BAS degree. Students who are studying and/or working in any of the focus areas should consider the respective course recommendations, concentrations, and minors when applying to, and continuing study in the BAS degree program. Students who have not completed an associates degree, but are studying and/or working in any of the focus areas, should consider the respective course recommendations, concentrations, and minors when applying to, and continuing study in the BIS degree program.

### Concentrations

Students seeking either the Bachelor of Applied Studies or the Bachelor of Individualized Studies may elect to complete a concentration, which is designated on their transcript and consists of a minimum of 24 credits, at least 12 of which must be upper-division. A concentration may be in a single subject or may be interdisciplinary. Courses required to complete concentrations are offered through various NMSU colleges and departments and are subject to availability. Concentrations will not be acknowledged after the degree has been conferred. For information and specific requirements on concentrations, see the College of Extended Learning website at <http://extended.nmsu.edu/academics/bas/focused-study.html>

### Minors

Students seeking a Bachelor of Applied Studies or Bachelor of Individualized Studies degree are encouraged to complete one or more minors offered through various NMSU colleges. A minor will be designated on a transcript and consists of a minimum of 18 credits, at least nine of which must be upper-division. Courses required to complete a minor may be in a single department or inter-departmental, are offered through various NMSU colleges, and are subject to availability. Students seeking to complete a minor must have the minor verified, prior to graduation, by the respective college academic department. Specific requirements for minors are available in printed form in departmental and college deans' offices, and may also be found in the college departmental listings of this catalog. (Note: the College of Business offers only the Business Administration minor to BAS and BIS majors.)

## PROGRAMS AND SERVICES

The College of Extended Learning extends New Mexico State University's reach beyond traditional campuses, classrooms, and academic programs. The college also provides educational and partnership opportunities for faculty and staff in the University community through professional development, networking, and mentoring. The College of Extended Learning offers:

- Technology Assisted and Off-site (TAOS) education, designed to serve students who live a significant distance away from the main campus or have scheduling conflicts due to family or work obligations, and find technology-assisted learning the best solution to educational advancement
- Instructional Media Services provides course delivery through a variety of synchronous and asynchronous technologies
- Professional development through the Teaching Academy, the Online Course Improvement Program, and the Instructional Innovation and Quality unit
- Weekend courses for those who find it difficult or impossible to take classes during the week because of work or family responsibilities. Regular, full-credit courses are taught weekly on Friday evening, Saturday, and Sunday at the Las Cruces campus

### TECHNOLOGY-ASSISTED AND OFF-SITE EDUCATION (TAOS)

The College of Extended Learning provides comprehensive distance learning opportunities to meet diverse educational and professional needs anytime, anywhere. Technology-Assisted and Off-Site (TAOS) courses from NMSU are delivered using the most innovative technology and methods available, including web-based technologies, ITV (Interactive Television), faculty exchanges, and off-site classes.

### Programs Offered Through TAOS

NMSU's TAOS programs are designed to serve students who may not be able to pursue an education through traditional means, and include certificate and licensure programs, undergraduate, master's and doctoral programs. In some cases, brief residencies on the NMSU Las Cruces campus may be a requirement of the program. Visit <http://distance.nmsu.edu/degrees/> for a complete listing of programs.

### Technology-Based Programs

Distance Education TAOS- programs listed under this category are delivered primarily using distance learning technologies. In some cases, programs may require brief residencies on the main campus for orientation, assessment, or other activities. Technologies used to deliver distance education at NMSU include:

- Instructure Canvas - enables instructors to utilize the Internet in the delivery of a course
- Adobe Connect - A synchronous Web delivery solution for conducting virtual or "live" classroom events through the Web
- Instructional Media Services - provides course delivery through a variety of synchronous and asynchronous technologies. Courses may use a "blended approach" to instruction by integrating two or more types of technologies shown above to promote engaging and effective learning

### Instructional Media Services (IMS)

Instructional Media Services (IMS) coordinates and facilitates live, interactive, and two-way video conferencing; Media Site video streaming and voiceover IP (Adobe Connect) for distance education course delivery/reception; dissertation defenses; meetings, conferences and job interviews worldwide. Three classrooms, one conference room and a portable desktop video conference unit are available. IMS also provides video duplication, format and standard conversions, and VHS, DVD, CD and game disk refurbishing. Courses at NMSU may use a 'blended' approach to instruction that integrates two or more types of these technologies including face-to-face teaching to promote engaging and effective learning.

### Teaching Academy

The Teaching Academy supports teachers, enhances learning, and builds community by providing training, networking, and mentoring to all NMSU educators. The Academy provides workshops and short courses on teaching, time management, mentoring, scholarly writing, and other topics, as well as trips to teaching conferences. The Teaching Academy is located in room 50, Milton Hall. Detailed information is available at <http://teaching.nmsu.edu>, by telephone at (575) 646-2204, or through email at [teaching@nmsu.edu](mailto:teaching@nmsu.edu).

### Online Course Improvement Program

The Online Course Improvement Program provides faculty with a variety of free services and options for discounted external services. These services focus on improving the quality of online teaching and learning. This program complements services currently available through The Teaching Academy and Instructional Innovation and Quality. Services include online course consultations and reviews, workshops and webinars, a resource center for online teaching and learning, and a professional development program for main campus faculty who want to commit to a one-year facilitated program.

### Instructional Innovation and Quality (IIQ)

The Instructional Innovation and Quality (IIQ) unit provides support for learning technologies to the NMSU community. Instructional Innovation services include professional development for the learning management system, technology integration tools and strategies, and consistency in high quality course design and delivery on the NMSU campuses and at a distance.

### Weekend Courses

For students who find it difficult or impossible to take classes during the week because of work or family responsibilities, the College of Extended Learning offers regular, full-credit courses taught weekly on Friday evening, Saturday, and Sunday at the Las Cruces campus. Courses are available for anyone wanting to start or return to college and for those wishing to take courses for personal enrichment. Detailed information is available at <http://www.nmsu.edu/weekend> or by telephone at (575) 646-5837 or (800) 821-1574.

# COLLEGE of HEALTH and SOCIAL SERVICES

Dean • *Tilahun Adera*

Associate Dean for Academic Affairs • *Donna L. Wagner*

Administrative Assistant, Intermediate, Student Records • *Jane L. Boykin*

Senior Program Specialist • *Robert Nosbisch*

---

## **Bachelor Of Community Health Bachelor Of Science In Nursing Bachelor Of Social Work**

The College of Health and Social Services brings together associated disciplines and professional fields of study directly applied to the improvement of the quality of life and its existence in rapidly changing family and community environments. The college includes the Department of Health Science, and the Schools of Nursing and Social Work.

### **Bachelor Degree Graduation Requirements**

Three bachelor degree programs are available. To be awarded a bachelor degree in any of the three programs (i.e., Bachelor of Community Health, Bachelor of Science in Nursing, and Bachelor of Social Work) you must:

1. Complete the requirements for the degree as shown by the department in which the degree is offered including a minimum of 48 credits of upper-division courses (numbered 300 and above) and the minimum total number of credits required for the degree.
2. Complete the general education common core presented in the general education section of this catalog, the specific general education courses that may be required by each department, and Viewing a Wider World requirements specified elsewhere in this catalog.\*
3. Complete any other requirements for graduation as discussed under "Regulations" in the "General Information" chapter of this catalog.

*\*Students must check with their academic advisor for current requirements and lists of specific courses that meet these requirements.*

While the ultimate responsibility for planning an academic program in compliance with university, college, and departmental requirements rests with you, the college recognizes the importance of helping you work out appropriate academic programs. All Health and Social Service students pursuing baccalaureate degrees are advised about academic matters in their respective department. Students are encouraged to contact departments for specific subject area information and career planning.

---

## **HEALTH SCIENCE**

**Mark J. Kittleson, department head**

**Professors** Kittleson, Robinson, Young; **Associate Professors** Forster-Cox, Kozel, Rao, Wilson; **Assistant Professors** Amatya, Gladstone, Kratzke, Palacios; **College Assistant Professors** Hawe, Kendall.

(575) 646-4300

<http://publichealth.nmsu.edu/>

**DEGREE: Bachelor of Community Health**

**MINORS: Community Health  
Gerontology  
U.S.-Mexico Border Health Issues**

**DEGREE: Bachelor of Community Health**

The curriculum in community health prepares students for careers in community and public health programs, and in voluntary, private, and governmental agencies. Upon completion of the degree, the graduate is eligible to take the

national Certified Health Education Specialist (CHES) examination administered by the National Commission for Health Education Credentialing, Inc. The Bachelor of Community Health degree has the full approval of the Society for Public Health Education (SOPHE)/American Association for Health Education (AAHE)/Baccalaureate Program Approval Committee (SABPAC).

Students seeking admission to the Bachelor of Community Health degree in the Department of Health Science at NMSU are first admitted as pre-community health (PCHL) students. Students keep this designation until they have met the following admissions requirements:

- A) A cumulative grade-point average of at least 2.0 after completing specified general education coursework (the common core).
- B) A grade of C or better in prerequisite departmental courses (HL S 100, 150, 275, and 395).
- C) A grade of C or better in both MATH 120 and A ST 251G/STAT 251G or STAT 271.
- D) A score of 37 or better on the Conventions of Written English examination.
- E) Submission of an application packet that includes (1) a brief personal statement of interest in the profession, and (2) a completed application for the Bachelor of Community Health degree program.

The Bachelor of Community Health degree program accepts applicants during the Spring and Fall semesters. The deadlines for accepting application packets are September 15 for Spring admission and February 15 for Fall admission. All applications must be submitted to the College of Health and Social Services, CHSS, Room 102.

Applicants may receive a conditional acceptance into the program if they are currently enrolled in the last of the required pre-requisites at the time that they submit an application to the Bachelor of Community Health degree program. Such conditional acceptance will be revoked if the applicant does not successfully complete each of the pre-requisite courses.

Students must attain a grade of C or better in all required HL S core coursework.

Any student who receives two or more grades of D or F in required HL S core courses must petition, in writing, to continue as a major. Unsuccessful petitioners will be dismissed from the program.

### **General Requirements (44 credits)**

General education requirements for the Department of Health Science follow those outlined by the university in this catalog.

### **Departmental Requirements**

You are required to complete the following Health Science core courses. Of the 128 credits required for the degree, you must have a minimum of 48 upper division credit hours (300- and 400-level courses).

### **Accreditation**

Within the College of Health and Social Services, the baccalaureate degree program in the School of Nursing is accredited by the Commission of Collegiate Nursing Education (CCNE). The baccalaureate degree program in the School of Social Work is accredited by the Council on Social Work Education. The Bachelor of Community Health degree program in the Department of Health Science is accredited by the Society for Public Health Education/American Association of Health Education Baccalaureate Program Approval Committee.

**Prerequisite Courses (16 credits)**

A ST/STAT 251G, Statistics for Business and the Behavioral Sciences, or *A ST 311, Statistical Applications .....	3
HL S 100, Introduction to Health Science.....	1
HL S 150G, Personal Health and Wellness.....	3
HL S 275, Foundations of Health Education.....	3
HL S 395, Foundations of Public Health.....	3
MATH 120, Intermediate Algebra .....	3

(\* A ST 311 does not meet the Common Core Area II)

**Community Health Education Core (25 credits):**

HL S 471, Resources and Computer Applications in Health Education.....	3
HL S 473, Health Program Planning.....	3
HL S 475, Methods of Community Health Education.....	3
HL S 476, Theoretically-Based Interventions.....	3
HL S 478, Health Program Evaluation and Research .....	3
HL S 496, Community Health Education Field Experience .....	6
HL S 497, Senior Seminar in Community Health Education.....	1
HL S 499, Problems in Health Education.....	3

**Public Health Core (15 credits)**

HL S 450, Epidemiology .....	3
HL S 451, Biometrics and Health Research.....	3
HL S 452, Environmental Health.....	3
HL S 457, Administration of Health Programs.....	3
HL S 459, Infectious/Noninfectious Disease Prevention .....	3

**Select one (1) of the following (3 credits) Cultural Foundations Course Requirements**

HL S 461, Health Disparities: Determinants and Interventions.....	3
HL S 462, Hispanic Health Issues .....	3
HL S 463, Interdisciplinary Seminar.....	3
HL S 464V, Cross Cultural Aspects of Health.....	3
HL S 465, International Health Problems.....	3
HL S 466, International Health Practicum .....	1-3
HL S 467, Rural Health Issues.....	3
HL S 468, Coping With Loss and Grief: A Cross-Cultural Perspective .....	3
HL S 469, U.S.-Mexico Border Health Issues.....	3

**Elective (31 credits)**

An additional 31 credit hours of elective courses are required. You must select additional electives to bring your total number of credit hours to the University requirement of 128. Students are encouraged to select additional HL S and GERO courses to satisfy the elective requirement. Students with an associate degree in an allied health field may transfer up to 31 credit hours of electives.

**Minors in Health Science**

A grade of C or better is required for all minors coursework.

**MINOR: Community Health (18 credit hours)**

Core Community Health Education Courses (12 credit hours): HL S 275, Foundations of Health Education; HL S 395, Foundations of Public Health; HL S 450, Epidemiology; HL S 457, Administration of Health Programs .....	12
Select one (3 credit hours): HL S 300, Drugs and Behavior; HL S 355, Responding to Emergencies; HL S 301V, Human Sexuality; HL S 380V, Women's Health Issues; HL S 320, Human Stress Management; HL S 492, Health Care of the Aged .....	3
Select one (3 credit hours): HL S 461, Health Disparities: Determinants and Interventions; HL S 462, Hispanic Health Issues; HL S 463, Interdisciplinary Seminar; HL S 464V, Cross-Cultural Aspects of Health; HL S 465, International Health Problems; HL S 466, International Health Practicum; HL S 467, Rural Health Issues; HL S 468, Coping with Loss and Grief: A Cross-Cultural Perspective.....	3

**MINOR: Gerontology (18 credit hours, on-line program only)**

Core Gerontology Courses (12 credit hours): GERO 415, Intro to Gerontology; GERO 493, Adulthood and Aging; GERO 456, Biological Aspects of Aging; GERO 494, Aging in a Multicultural Society.....	12
---	----

Select two (6 credit hours): FCS 448, The Aging Family; HNDS 406, Geriatric Nutrition; GERO 450, Health Promotion for the Older Adult; GERO 451, Aging and Public Policy; NURS 324, Nursing Care of the Older Adult.....6

**MINOR: U.S.-Mexico Border Health Issues (18 credit hours)**

Core - U.S.- Mexico Border Health Issues Courses (6 credit hours): HL S 463, Interdisciplinary Seminar (when subtitle relates to US-Mexico Border Health) or HL S 466, International Health Practicum; HL S 469, US-Mexico Border Health Issues.....6

Select four (12 credit hours): HL S 461, Health Disparities: Determinants and Interventions; HL S 462, Hispanic Health Issues; HL S 464V, Cross-Cultural Aspects of Health; HL S 465, International Health Problems; HL S 467, Rural Health Issues; HL S 486, Special Topics (when subtitle relates to US-Mexico Border Health); GERO 494, Aging in a Multi-Cultural Society; HL S 484, Alcohol and Drug Prevention and Control .....

## NURSING

**Director & Associate Dean for Nursing Education: Pamela Schultz**

**Professors** Hoke, Huttlinger; **Associate Professors** Borges, Keele, Keller, Pase, Sizemore; **Assistant Professors** Mullins, Reinhardt, Schmotzer, Summers (575) 646-3812

<http://www.nmsu.edu/~nursing/>

**DEGREE: Bachelor of Science in Nursing**

NMSU's School of Nursing offers a Bachelor of Science in Nursing (B.S.N.) degree. The degree plan provides three options to accommodate either the beginning nursing student, the beginning nursing student with a baccalaureate degree in another field, or the returning registered nurse. Students in the beginning categories are eligible to take the NCLEX-RN examination for licensure as a registered nurse upon completion of their program studies. Option three is designed for the registered nurse who wishes to complete a B.S.N.

The Bachelor of Science in Nursing degree program is approved by the New Mexico Board of Nursing and accredited by the Commission on Collegiate Nursing Education (CCNE). Approval by the New Mexico Board of Nursing is required for graduates to be eligible for the National Council Licensing Examination for licensure as a registered nurse. Accreditation by the CCNE assures prospective students and employers that the program has met national education standards.

**Requirements for B.S.N. Program Admission**

Requirements and procedures to follow for admission to the four-year B.S.N. program are as follows:

- 1) Obtain admission to NMSU as a regular student.
- 2) Contact the pre-nursing advisor in the College of Health and Social Services, Suite 132C for complete Nursing Program information and advisement.
- 3) Satisfy NMSU basic academic competency requirements in English and Math.
- 4) Complete all prerequisite coursework before final admission to the nursing major.
- 5) Prerequisite science courses must have been completed within the past seven years.
- 6) Achieve a grade of C or better in each nursing prerequisite course.
- 7) Achieve a competitive minimum prerequisite GPA of 3.0 which includes grades earned from all higher education institutions.
- 8) Prelicensure applicants to the NMSU School of Nursing are required to take a standardized admission exam and to obtain a satisfactory score prior to final admission to the nursing major.
- 9) Applicants will be considered for admission to the nursing major during the fall or spring semester of anticipated completion of prerequisite coursework or after prerequisite courses are completed. Applicants for fall semester admission may not finish prerequisites in the summer session immediately preceding the fall semester in which they wish to be admitted.

- 10) Submit an official application to the four-year B.S.N. program to the College of Health and Social Services Student Resource and Advising Center, Suite 132C by February 1—for consideration for Fall admission to the nursing major  
September 1—for consideration for Spring admission to the nursing major

**NOTE:** Admission is competitive. Priority for admission will be given to applicants with the highest GPAs in the required prerequisite coursework, to those applicants who have completed prerequisite coursework at NMSU, and/or to those who have not repeated a prerequisite course or courses where a D or F was earned.

Any applicant not admitted to the nursing major may reapply.

**Second Degree/BSN (Pathway option)**

Requirements and procedures for admission to the second degree option are as follows:

1. Obtain admission to NMSU as a second bachelor's degree with official transcripts
2. Contact the pre-nursing advisors in the College of Health and Social, Suite 132C for advisement on program application and admission.
3. Have a minimum 3.0 GPA on a 4.0 scale in first bachelor's degree
4. Have a minimum of a 3.0 GPA on a 4.0 scale in the required prerequisite Anatomy and Physiology or A&P I and A&P II(8 credits), third science course (3 credits in BIOL, MOLB, CHEM, or PHYS), a Pathophysiology course (3-4 credits), and Statistics (3 credits). All courses must be completed before submitting a nursing application and must not be older than 7 years.
5. Submit an official application to the second degree option to the College of Health and Social Services Student Resource and Advising Center, Suite 326 by February 1, for consideration for Fall admission or September 1 for Spring admission to the nursing program
6. Complete a resume documenting prior education and work experience.
7. A Medical Terminology Course is recommended
8. Applications are considered after all requested documentation is received by the Pre-Nursing Advisors.
9. Three letters of recommendation are required.

**FOUR-YEAR CURRICULUM PLAN COURSES\***

Math basic academic skills requirement must be satisfied.

**Departmental Requirements**

A ST 311, Statistical Applications or STAT 251G, Statistics for Business and the Behavioral Sciences.....	3
BIOL 211G and Lab, Cell and Organismal.....	4
BIOL 219 or BIOL 311, Microbiology.....	3
BIOL 253 Anatomy or Anatomy and Physiology II.....	4
BIOL 254 Physiology or Anatomy and Physiology I.....	3-4
BIOL 311L, Microbiology.....	2
C EP 110, Human Growth and Behavior.....	3
CHEM 110G, Principles and Applications of Chemistry or CHEM 111G, General Chemistry I or CHEM 112G, General Chemistry II with Lab.....	4
HNDS 251, Human Nutrition or HNDS 163, Nutrition for Health.....	3
MATH 121G, College Algebra.....	3
NURS 328, Human Pathophysiology in Nursing.....	4
PSY 201, Introduction to Psychology.....	3
Total Credits.....	39-40

**Common Core**

Communications Area 1.....	9-10
Math Area II (counted in department)	
Science Area III (counted in department)	
Social/Behavior Science Area IV (3 cr. counted in department).....	3
Humanities Area V.....	6-9

**University Requirements**

VWW (from specified list).....	3
VWW (from specified list).....	3
Total Credits.....	27-28

**Formal Acceptance required before taking NURSING courses**

**Semester 5**

NURS 300, Principles of Professional Nursing Practice.....	7
NURS 302, Foundations of Health Assessment.....	3
NURS 326, Pharmacology in Clinical Nursing Practice.....	4

**Semester 6**

NURS 372, Adult Health Nursing I.....	8
NURS 373, Nursing the Psychiatric Mental Health Client.....	5
NURS 375, Introduction to Nursing Research.....	3

**Semester 7**

NURS 410, Adult Health Nursing II.....	6
NURS 415, Parent-Child Nursing.....	8
NURS 416, Older Adult Nursing.....	2

**Semester 8**

NURS 470, Nursing Organization and Management.....	3
NURS 472, Community and Population-Focused Nursing.....	6
NURS 479, Nursing Care for Complex Patients.....	8

\* A grade of C or better is required for all courses in the curriculum. You must also complete 6 elective credits from the Part III Viewing a Wider World general education category.

**Note:** 1) An applicant who is not a U.S. citizen or who has been convicted of a felony is advised to contact the appropriate State Board of Nursing regarding eligibility for licensure. 2) Clinical clearances are required for all students prior to admission and concurrent with each semester of studies. These include: current immunizations; background screening; drug testing; current CPR status, various health agency orientations as well as other requirements mandated by clinical affiliation agreements. Failure to complete and provide documentation within timelines established by the School of Nursing may prevent admission to/ or continuation within the nursing program. 3) Students are required to make a satisfactory score on nationally-normed, standardized tests before admissions and also throughout the curriculum to determine progression through the nursing major. In the last semester of the curriculum, students are required to take a comprehension exam and to make a satisfactory score on this exam prior in their preceptored experience. 4) Newly admitted students are required to attend an orientation session which occurs prior to the start of classes for their first nursing semester. 5) School-wide activities usually occur 1-3 days prior to the start of classes and attendance is required.

**R.N.-B.S.N.**

Requirements and procedures for admission to the R.N. to B.S.N completion program area are as follows:

1. Regular status admission to the University.
2. All Nursing coursework is 100% online.
3. Contact the School of Nursing for complete program information and application materials.
4. Submit an official application to the School of Nursing.
5. Provide evidence of graduation from an accredited associate or diploma nursing program.
6. Provide evidence of current R.N. licensure.
7. Apply during fall or spring for summer admission.
8. Satisfy NMSU basic academic competency requirements in English and Math.
9. Submit official transcripts from all nursing schools, colleges and universities attended to the School of Nursing. These will be evaluated for allowable transfer credits.
10. Achieve a minimum GPA of 2.5 on a 4.0 scale for prerequisite courses and prior nursing coursework.
11. Completed prerequisite course work.
12. A ST 311 or STAT 251 prerequisite for NURS 376, Research and Evidence-Based Practice for the Practicing RN.
13. Attend MANDATORY 2-3 day onsite orientation.
14. Have access to a computer and internet service.
15. Meet Clinical Clearance requirements to include background check.



Note: Nursing class sizes are limited. Students admitted to the R.N.-B.S.N. program may be accommodated based on space availability in any given nursing course. All documentation must be submitted to the school by December 1st to begin nursing classes the following May. Generally, the sequence of nursing courses start in Summer I (May). If additional classes are added, students must submit all documentation at least 6 months prior to the start of the nursing sequence to allow for timely reviews and selection of the nursing cohort.

#### R.N. to B.S.N. Completion Curriculum

Non-nursing and General education (or equivalent) courses (See the "General Information" section of this catalog for details of NMSU general education requirements). A grade of C or better is required in all courses within the curriculum. In addition all students must complete:

- Inferential statistics
- Two Viewing a Wider World: "V" courses
- Upper division elective courses as required to satisfy NMSU's 48 upper division credit hour requirements and all the general education requirements prior to or concurrently with completion of the last semester of nursing.

In addition, it is the student's responsibility to complete a minimum of 128 total credit hours including 48 upper-division credits.

The nursing course sequence for this degree option normally starts in the first summer session. The core nursing courses required for the R.N. to B.S.N. completion are listed below:

NURS 314, Computer Technology for Nurses.....	3
NURS 315, Introduction to Professional Nursing for the R.N.....	3
NURS 322, Nursing Health Assessment.....	3
NURS 324, Nursing Care of the Older Adult.....	3
NURS 325, Human Pathophysiology for Nursing.....	3
NURS 352, Bioterrorism.....	3
NURS 353, Nursing Informatics.....	3
NURS 376, Research and Evidence-Based Practice for the Practicing RN.....	3
NURS 420, Community Health Nursing.....	3
NURS 426, Community Health Nursing for the R.N.: Clinical.....	3
NURS 475, Issues and Trends in Professional Nursing.....	3
NURS 476, Nursing Organization and Management for the R.N.: Clinical.....	3
NURS 477, Nursing Organization and Management for the R.N. ....	3
Upper Division Elective/Stats Elective.....	3
WWW.....	6

#### Notes:

1. The R.N.-B.S.N. Option uses a compressed scheduling format designed for registered nurses from diverse educational and multicultural backgrounds.
2. Students must complete all NURSING courses online.
3. Students are required to attend MANDATORY onsite orientation.
4. Approved clinical preceptors available in your area.
5. Clinical clearances are required for all nursing students (i.e. current immunizations, background screenings, current CPR status and various health agency orientation workshops).
6. Failure to complete and provide documentation within timelines established by the School of Nursing may prevent admission or continuation within the nursing program.

## SOCIAL WORK

#### School of Social Work

**Tina Hancock, DSW, Director**

**Professors** Sandau-Beckler, Wagner; **Associate Professors** Barnett-Queen, Barney, Blair, de la Rosa; **Assistant Professor** Whittlesey-Jerome; **College Assistant Professors** Ortiz

**Student Services Coordinator**, Irma Hernandez

(575) 646-2143

<http://socialwork.nmsu.edu>

#### DEGREE: Bachelor of Social Work (B.S.W.)

The B.S.W. degree allows you to join a profession dedicated to helping people in personal and social situations. As a unique and challenging field, social work addresses the complexity of human behavior and the ever-present needs and potential of people. From rural communities to inner cities, social workers are at work in social service agencies, mental health centers, hospitals, schools, neighborhood organizations, probation offices, and private agencies—just about anywhere there are people. Social work roles are varied and flexible. Social workers practice in areas such as child abuse, community organization, direct services with individuals and families, mental health, group work, and the administration, planning, and development of social programs. With each consumer group and in every agency setting, social workers help to correct the causes or alleviate the results of poverty, racism, poor health, mental illness, or any condition that prohibits people from reaching their potential.

The B.S.W. program prepares you for a beginning professional level of generalist social work practice with an understanding and appreciation of the cultural diversity of the Southwest.

To be admitted as a B.S.W. candidate, you must formally apply for admission to the program. A 2.5 grade-point average is required for admission. Consult the pre-social work major advisor, located in the School of Social Work in the College of Health and Social Services. The deadline for submitting applications is the last Friday in January. The program is fully accredited by the Council on Social Work Education and all students have access to copies of the Curriculum Policy Statement.

#### General Education Requirements

Students need to complete the New Mexico State University general education requirements before applying to the Bachelor of Social Work program. The School of Social Work requirements include S WK 221 and two semesters of a second language. Once accepted into the program, students also need to meet a Cultural Emphasis requirement.

Students may choose one of three tracks to complete a minimum of 6 credit hours.

- 1) Take two more semesters of any language.
- 2) Take an approved language immersion program.
- 3) Take two approved upper-level courses with a multicultural emphasis (you can get the approved list of courses from your social work advisor).

If the cultural emphasis classes are also Viewing a Wider World classes, you still need to complete the total number of specified upper-division credits necessary for graduation. Highly recommended electives for social work students include courses in sociology, history, Spanish, psychology, family life, child development, English, philosophy, anthropology, computer science, criminal justice, government, and economics. Electives must be sufficient to bring total credits to 128, including 54 upper-division credits, for graduation.

#### Departmental Requirements

Preparation for entry-level professional social work requires a thorough knowledge of theory and skills; therefore, the high number (57) of core social work credits is required.

#### Freshman Year

##### Fall Semester (16-18 credits)

ENGL 111G/111H, Rhetoric and Composition.....	3-4
BIOL 101G/Lab*.....	4
Communications.....	3
Second language.....	3-4
Elective.....	3

##### Spring Semester (15-16 credits)

MATH 121G, 112G, 210G, 142G, STAT 251G, STAT 271G.....	3
C EP 110G*.....	3
Lab Science.....	4
Second language.....	3-4
S WK 221G, Introduction to Social Welfare*.....	3

#### Sophomore Year

##### Fall Semester (18 credits)

A ST 311G or STAT 251G.....	3
ENGL 203G, ENGL 211G, or ENGL 218G.....	3

Humanities/Fine Arts.....	3
Humanities/Fine Arts.....	3
Social/Behavioral Science.....	3
Elective.....	3

**Spring Semester (18 credits)**

Viewing a Wider World/C E.....	3
Viewing a Wider World/C E.....	3
Elective/C E.....	3
Elective/C E.....	3
Elective.....	3
Elective.....	3

NOTE: Students need to submit a formal application packet to the School of Social Work in January and be accepted into program before they can take junior or senior year courses.

**Junior Year**

**Fall Semester (13 credits)**

S WK 300, Social Work Practice Skills.....	3
S WK 301, Orientation to Field.....	3
S WK 309, Sociocultural Concepts.....	3
S WK 311, Human Behavior and the Social Environment I.....	3
S WK 331V, Introduction to Social Policy: History.....	3

**Spring Semester (15 credits)**

S WK 302, Service Learning in the Field.....	3
--	---

S WK 312, Human Behavior and the Social Environment II.....	3
S WK 313, Social Work Practice with Individuals.....	3
S WK 352, Social Welfare Policy: Legislation.....	3
Elective.....	3

**Senior Year**

**Fall Semester (15 credits)**

S WK 401, Field Experience I.....	6
S WK 414, Social Work Practice with Families.....	3
S WK 415, Social Work Practice with Org/Comm.....	3
S WK 467, Social Work Research I.....	3

**Spring Semester (16 credits)**

S WK 402, Field Experience II.....	6
S WK 404, Integrative Senior Seminar.....	1
S WK 416, Social Work Practice with Groups.....	3
S WK 468, Social Work Research II.....	3
Social Work Practice Elective or Elective.....	3

A grade of C or better is required for all social work courses.

\* A prerequisite with an asterisk (\*) must be completed before starting the S WK program and require a grade of C or better.

# HONORS COLLEGE

Dean • *William Eamon*

Associate Dean and Director of National Scholarships • *Mark C. Anderson*

Assistant Dean for External Relations • *Nigel Holman*

Administrative Assistant • *Valerie Torres*

Crimson Scholars Coordinator • *Yvonne Flores*

The Honors College is located in the Conroy Honors Center on the corner of University and Espina Avenues. Most honors classes are taught either in the Conroy Honors Center or in the honors residence center in Monagle Hall.

(575) 646-2005

<http://honors.nmsu.edu/>

## Mission of the Honors College

The mission of the New Mexico State University Honors College is to serve the citizens and state of New Mexico by providing an enriching environment for diverse, academically talented, and motivated students. The Honors College also seeks to create a community of scholars and mentors that fosters personal growth, critical thinking, leadership, independence, curiosity, and social responsibility. The college aspires to cultivate student potential to broadly understand and positively impact communities, organizations, and the larger world. The Honors College aims to focus campus attention on excellence in undergraduate education while strengthening New Mexico State University's reputation as the university of choice in New Mexico.

In support of this mission, the Honors College integrates the following objectives:

- Provide students with an interdisciplinary, intellectually challenging curriculum that integrates active and service-based learning;
- Promote university-wide undergraduate research opportunities, linking students with faculty mentors;
- Foster faculty enrichment and professional development;
- Encourage, mentor, and guide students seeking postgraduate scholarships and fellowships;
- Offer students opportunities for developing leadership skills;
- Create a residential community that combines learning inside and outside the classroom.

In small classes taught by master teachers, students in the Honors College engage in lively discussion and collaborative investigation of interdisciplinary topics. By taking honors courses, students may also work toward completing general education requirements and disciplinary requirements in the major.

Students in the Honors College are 'dual citizens', i.e., they enroll in both the college(s) of their major/minor and the Honors College. The Honors College does not offer a degree; instead, it offers students the opportunity to graduate with various levels of honors distinction (described below).

## The Honors Faculty

The Honors College faculty come from academic departments from throughout the university. Members of the faculty are chosen through a rigorous selection process and include many of New Mexico State University's most distinguished teachers and researchers.

**Professors** Andersen, Baker, Bronstein, Catlett, Cooke, Eamon, Ellis, Falk, Fouillade, Gehrke, Giles, E. Hammond, K. Hammond, Lapid, Lawton, Linkin, Lodder, Manning, McNamara, Pollack, Serrano, Shearer, Stanford, Thompson

**Associate Professors** Ackleson, Alexander, Bond-Maupin, Butler, Cleveland, Ellis, Gregware, Harvey, Holtzman, Ketelaar, Lee, Lindsey, Malamud, Miller-Tomlinson, Murrell, Olberding, Salamaca-Riba, Scoccia, Storm, Wolf

**Assistant Professors** Amato, Duran, Dylko, Garay, Guynn, Hagelin, Horodowich, Horowitz, Hubbell, Knapp, Lamonica, Rourke, Schirmer, Throop

**College Professors** Fitzsimmons, Gambrell, Lavender, LaPorte

**Adjunct Professor** Lewis, Loy

**Emeritus Professors** Compton, Denk, Ocepek, Pengelley, Rundell, Staffeldt, Townley, Trevathan

## Admission to the Honors College

Students admitted to the Honors College are designated as Crimson Scholars, the following eligibility criteria apply:

**Automatic Eligibility.** Entering freshmen are automatically eligible for admission to the Honors College and Crimson Scholars by meeting one of the following criteria:

- composite ACT score of 26 (or 1170 SAT score); or
- high school GPA of 3.75 or higher and an ACT of at least 24 (or 1090 SAT)

**Admission by Petition.** Entering freshmen who have an ACT score of at least 24 (or 1100 SAT score) or a high school GPA of 3.50 may submit a written petition for provisional admission to the Honors College using a form provided by the Honors College office upon the request of the student.

**Transfer and Continuing Students.** Transfer and continuing students who have earned at least 3 college credit hours will be eligible for admission to the college on the basis of a cumulative college GPA that meets eligibility requirements for continuing students (see below).

**Eligibility for Continuing Membership.** The eligibility criteria for continuing membership in the Honors College is the same as for continuing Crimson Scholars status:

- Fewer than 28 hours earned: 3.3 GPA
- More than 28 hours earned: 3.5 GPA

**Appeals.** Students who fall below the designated GPAs and lose their eligibility for Honors College status due to extraordinary circumstances may petition the College Admission Committee for readmission.

## Enrolling in Honors Courses

Students do not have to be members of the Honors College to enroll in honors courses. Any eligible student may enroll. The eligibility requirements to enroll in lower-division honors courses are the same as those pertaining to admission to the college and continuance in the college. For upper-division courses, the requirement is a cumulative 3.2 GPA. Students lacking these requirements may petition the Honors College Dean for permission on a case-by-case basis.

## Graduating with University Honors

The Honors College offers two program options: graduation with University Honors and the Honors Certificate. Each option has separate eligibility requirements, benefits, and forms of recognition for the student. Almost all honors courses fulfill university general education requirements. To have these courses count toward one of these programs, a student must earn at least a B.

Any student who attains an overall GPA of 3.5-3.749 and who completes 15 credits of honors coursework and the honors thesis is eligible to graduate with University Honors. Students who attain an average of 3.75 or better and who complete 15 credits of honors coursework and the honors thesis are eligible to graduate with Distinction in University Honors. Transcripts will certify graduation with University Honors or Distinction in University Honors. Students who complete the requirements for graduation with either distinction receive recognition in the commencement program, a Certificate of Distinction, and a medallion upon graduation.

## University Honors Requirements

### Freshman-Sophomore Years

Three courses from the Honors Core (lower division) ..... 9.

### Junior-Senior Years

Two 300- or 400-level Honors Certificate Program courses ..... 6

Thesis or Final Project ..... 3

Total Credits Required ..... 18

### Final Project

In order to graduate from the Honors College with the designation of University Honors or Distinction in University Honors, a student must complete a final project. The final project is normally done during the senior year and may be undertaken only if the student meets the eligibility requirements for graduation from the College (3.5 minimum GPA and the required courses). The final project carries 3 graded credit hours.

Before beginning the final project, the student must choose a faculty advisor and file with the College a proposal that is approved by the faculty advisor and the Dean of the Honors College. The final project is graded by the faculty advisor, who submits a final grade to the Dean of the Honors College.

Candidates for graduation with University Honors and Distinction in University Honors are expected to make public presentations of their final projects at one or more of the following: (1) the Undergraduate Research and Creative Arts Symposium, (2) a department seminar, (3) and/or a seminar sponsored by the Honors College. The method of presentation shall be that deemed appropriate for the discipline in which the project is undertaken.

The written component of the final project shall be filed with the Honors College in a bound copy according to the guidelines established by the college.

The final project may be any one of the following:

**Thesis** — The thesis is an independent scholarly or scientific research project that is undertaken with the advice and direction of a member of the university faculty. The thesis does not need to be on a topic in the student's major field, but must meet the guidelines and protocols of the discipline in which it is written. The faculty advisor, in consultation with the thesis committee, will examine the student's thesis and determine a final grade.

**Creative Arts or Performance Project** — The Senior Creative Arts/Performance project may take the form of an exhibition, recital, or other venue deemed appropriate by the faculty advisor and the Dean of the Honors College. In addition to the performance or exhibition, the student must complete a written report or description of the project that is approved by the faculty advisor, to be filed with the Honors College.

**Service Learning Project** — The Service Learning Project shall be undertaken under the auspices and supervision of an agency approved by the Dean of the Honors College. A faculty advisor must approve the project and monitor its progress. The Service Learning Project must be more than simply a certain number of hours volunteered to an agency. It must also involve a creative and leadership element, such as the design of a program or policy that identifies a problem and meets a specific need of the agency. A time log and journal shall be kept by the student during the course of the project. A written report describing the objective and design of the project, as well as an evaluation of its successes and failures, must be submitted to the Honors College according to norms established by the college. The report must also contain a reflective component, demonstrating increased self-awareness and personal growth.

At the completion of the final project, the student will be required to do an exit interview with the faculty advisor and/or Dean of the Honors College. Such interviews will be used in the formal assessment process.

### Community Service Options

The Honors College encourages its students to perform volunteer public service. Under certain circumstances, public service may be used as an alternative to completing some of the requirements for graduation from the Honors College. The following guidelines apply:

During the sophomore, junior, or senior year, a student with at least a 3.5 GPA may undertake community service with an agency or organization in Doña Ana County (or an agency outside the area approved by the Honors College Dean) to earn a waiver of up to 3 of the hours required for University Honors (not including the Final Project). A minimum of 15 hours of community service per week, per semester is required for each honors credit hour to be waived. Community service hours must be verified by a supervisor of the agency or organization on a form approved by the Honors College. On-campus activities are not included under this option. The student must also certify that the community service hours are not being used for any course or degree requirement. Approval of the Dean of the Honors College must be obtained prior to beginning volunteer service to be eligible for this option.

### International Study Option

Students in the Honors College are strongly encouraged to participate in international study. An NMSU honors student with at least a 3.5 GPA may earn a waiver of up to 3 credit hours required for University Honors for such international study (not including the Final Project). This waiver will be awarded

for college credit earned while participating in any international study program approved by the Honors College or the Office of International Study. One honors hour will be waived for each 3 semester credit hours earned with a grade of 'A', 'B', or 'S'. Permission to use this option must be approved in advance by the Honors College.

Note: Waiver of university honors credit for service learning or international study does not reduce or affect in any way the total number of hours required for graduation. Waiver of honors credit for service learning or international study cannot be applied toward the final project requirement.

### Honors Certificate Program

Sophomores, juniors, and seniors with a cumulative grade-point average of 3.2 are eligible for the Honors Certificate Program. A student who completes at least two 300- or 400-level honors seminars will be given a Certificate of Distinction at graduation and special recognition in the commencement program. See the honors Dean for details on available seminars, Honors College, Conroy Honors Center.

### Crimson Scholars Program

The Crimson Scholars Program is a benefits and recognition program for academically superior students who have a cumulative 3.5 GPA and are taking three or more credits per semester. Crimson Scholars receive a number of benefits, including:

- Automatic eligibility for all Honors courses
- Early registration
- Extended library check-out privileges
- Special advising
- Notation on college transcript (to students who have maintained Crimson Scholar status for 90 credit hours\*)
- Recognition in the commencement program (to students who have maintained Crimson Scholar status for 75 credit hours\* at the time of applying for degree)
- A lapel pin (to students who have maintained Crimson Scholars status for 24 credit hours\*)

To be eligible for the Crimson Scholars Program, applicants must be degree seeking.

- Entering freshmen must have either: a minimum ACT standard composite score of 26; *or* a minimum ACT standard composite score of 24 or 25 *and* a 3.75 or better high school GPA; *or* a minimum SAT score of 1170; *or* a minimum SAT score of 1090 and a 3.75 or better high school GPA.
- Currently enrolled students must have a minimum cumulative GPA of 3.5 for 3 or more credits\* at NMSU.
- Transfer students must have a 3.5 cumulative GPA from their previous institution(s) or complete 3 or more credits\* at NMSU for eligibility.

\* does not include I or audit course designations at NMSU

#### To maintain Crimson Scholar status:

- Freshmen entering on an ACT score must maintain a cumulative GPA of 3.5 and complete three or more credits per semester to continue in the program.
- Sophomores, juniors, and seniors must maintain a minimum cumulative GPA of 3.5 and be currently enrolled in a total of 3 or more credits\* per semester at NMSU or any NMSU community college to retain their Crimson Scholars status.
- Crimson Scholars whose GPA drops below the required cumulative 3.5 or drop below the three credit minimum will be dropped from the program. If in the following semester, the student's cumulative GPA and credits again meet the minimum requirement, the student will *automatically* be reinstated.

\* does not include I or audit course designations at NMSU

In recognition of the student's academic achievement, a statement designating "Crimson Scholar Graduate" is placed on the student's transcript after completion of 90 credit hours\* as a Crimson Scholar and a minimum cumulative GPA of 3.5. To be designated in the commencement program as a Crimson Scholar graduate, a student must complete a minimum of 75 credit hours\* as a Crimson Scholar and must have a minimum cumulative GPA of 3.5. Students who complete 24 credit hours\* as Crimson Scholars and have a minimum GPA of 3.5 receive a lapel pin. Crimson Scholars are entitled to early registration and library privileges. Additional information is available from the Crimson Scholars Office, located in the Conroy Honors Center.



NOTE: Crimson Scholars interested in work-study positions must submit a yearly Free Application for Federal Student Aid (FAFSA) and complete a financial aid file with the NMSU Office of Financial Aid.

**The Honors Living and Learning Community (HLLC)**

The New Mexico State University Honors Living and Learning Community (HLLC) is an educational initiative that links in-class and out-of-class learning experiences for honors students. The goals of the Honors Living and Learning Community are to: (1) supplement classroom learning experiences with co-curricular programming; (2) foster the development of an honors community that includes honors students, faculty, and staff; and (3) create a supportive environment for honors students. Above all, the Honors Living and Learning Community aims to develop a small-college environment within the context of a large research university, thus giving students the benefits of both. Honors students, especially first-year students, are encouraged to take advantage of this special opportunity. The Honors Living and Learning Community is comprised of three components:

The Conroy Honors Center — is the academic home of the Honors College. This historic building was designed by the renowned southwestern architect Henry C. Trost and built in 1908 to house the campus chapter of the YMCA.

The Conroy Center houses the administrative offices of the program along with three seminar rooms, a student commons area, a kitchen, and a computer lab.

The Honors Residence Hall — is located in Monagle Hall and is the focus of NMSU's vibrant honors community. It is a place where honors students live among a community of excellent students with outstanding academic records and who are interested in getting the most out of the academic opportunities offered to them at a large research institution. It also hosts many social and extracurricular academic activities.

The Honors Residence Hall is equipped with two electronic classrooms, where many introductory honors courses are taught. The honors faculty participate in residence hall programming and frequently attend residence hall floor meetings with students. The Honors Residence Hall is open to both men and women of any university class standing.

The Crimson Scholar Residential Mentors Program — Crimson Scholar Residential Mentors live in the Honors Residence Hall and promote academic success of the entire student body by tutoring and mentoring residence hall students. Mentors also foster a sense of community throughout the Honors Residence Hall by creating personal affiliations, engaging in scholarly conversation, and lending academic support to their peers.

# NMSU COMMUNITY COLLEGES

President • *Barbara Couture*

Executive Vice President and Provost • *Wendy K. Wilkins*

Associate Vice President and Deputy Provost • *Greg Fant*

President NMSU-Alamogordo • *Cheri Jimeno*

President NMSU-Carlsbad • *John Gratton*

President NMSU-Doña Ana • *Margie Huerta*

President NMSU-Grants • *Felicia Casados*

Administrative Assistant • *Kimberly Altamirano*

---

## Associate of Arts

### Associate of Science

**Associate:** *Applied Business*

**Associate:** *Applied Science*

**Associate:** *Art and Graphic Design*

**Associate:** *Business Office Technology*

**Associate:** *Criminal Justice*

**Associate:** *3-D Computer Animation*

**Associate:** *Diagnostic Medical Sonography*

**Associate:** *Early Childhood Education*

**Associate:** *Education*

**Associate:** *Fine Arts*

**Associate:** *General Studies*

**Associate:** *Heritage Interpretation*

**Associate:** *Nursing*

**Associate:** *Occupational Business*

**Associate:** *Pre-Business*

**Associate:** *Pre-Engineering*

**Associate:** *Radiologic Technology*

**Associate:** *Social Services*

**Associate:** *Water Utility - Operation*

---

NMSU's Community College campuses make two years of college education available to students in their home environment. The community colleges provide a high quality program of education for all full-time and part-time students; provide occupational education; and provide noncredit community education courses.

Degree completion programs have been established at all NMSU Community College campuses. Students who live outside the Las Cruces campus area may pursue a degree in Grants, Alamogordo or Carlsbad. Some Las Cruces campus courses are available through distance education so students may complete their degree without ever having to relocate.

A student attending any NMSU Community College campus is enrolled as a New Mexico State University student and may change campuses without completing additional admission procedures.

## Associate Degree Graduation Requirements

Associate degree programs are offered at the NMSU Community College campuses for those desiring specialized training for employment. Community, junior, and technical college transfer students may be admitted and classified on the basis of acceptable credits at two-year institutions. The Associate in pre-business degree, administered by the College of Business, is available to NMSU Community College campus students completing the requirements as outlined in the "College of Business" section of this catalog. Most courses required for the Associate in Applied Science degree with options in electronics technology offered at the Carlsbad, Grants, and Alamogordo campuses meet lower division requirements for the baccalaureate degree program in Electronics Engineering Technology, which is offered on the Las Cruces campus through the College of Engineering. The Associate Degree in Pre-Engineering is administered through the College of Engineering.

Math requirements in some associate degree and certificate programs vary. ENGL 111G and all developmental studies courses in English, math, and reading must be completed with a grade of C or better. Please refer to your

NMSU Community College campus catalog for details. The last 15 semester credits for an associate degree must be taken in residence at NMSU or one of the NMSU Community Colleges. Degree requirements remain in effect for six years. The designation, Meritorious Graduate, is awarded to the top 15 percent of the students receiving associate degrees within each college in any one academic year, provided 45 or more credits have been completed at NMSU and/or an NMSU Community College with computable grades.

## Occupational Education (OE prefix) Courses

OE prefix courses may be applicable toward four-year degrees at New Mexico State University without special approval of the appropriate department head and college dean. The College of Agriculture and Home Economics, the College of Business, the College of Health and Social Services, and the College of Extended Learning will accept a number of OE prefix courses in certain degree programs. Contact the respective college's advisor for detailed information.

## Certificate Programs

In addition to the regular degree programs offered by the NMSU Community College campuses, certificate programs in selected areas are offered. Students are advised to contact the NMSU Community College campus for information on available certificate programs.

## NMSU Community College Campus Information

Information concerning NMSU Community College campus programs, class schedules, catalogs, registration, and other data may be obtained from the NMSU Community College campus administration.

### Dr. Cheri Jimeno, President

#### NMSU-Alamogordo Community College

2400 N. Scenic Dr.

Alamogordo, New Mexico 88310

<http://nmsua.edu/documents/NMSUA-Catalog-2010-11-amended-2.pdf>

(575) 439-3696

### John Gratton, President

#### NMSU-Carlsbad Community College

1500 University Drive

Carlsbad, New Mexico 88220

(575) 234-9210

### Dr. Margie Huerta, President

#### NMSU-Doña Ana Community College

Box 30001, Dept. 3DA

Las Cruces, New Mexico 88003

[http://dacc.nmsu.edu/publications/Our\\_Students/2010-11%20Catalog.pdf](http://dacc.nmsu.edu/publications/Our_Students/2010-11%20Catalog.pdf)

(575) 527-7510

### Felicia Casados, President

#### NMSU-Grants Community College

1500 Third Street

Grants, New Mexico 87020

<http://grants.nmsu.edu/sites/default/files/documents/2010-12catalog.pdf>

(505) 287-6678

# COURSE DESCRIPTIONS

## COURSE LISTINGS

Courses are titled in the following style:

ASTR 110G. Introduction to Astronomy 4 cr. (3+3P)

- Course number - (110) indicates the course is a freshman course.
- Suffix (G) - indicates a New Mexico Common Core course.
- Suffix (V) - indicates a Viewing a Wider World course.
- Credits - The unit of university credit is the semester hour, which is the equivalent of one hour's recitation or a minimum of two hours of practice per week for one semester. The (3+3P) means that the class meets for 150 minutes per week for lecture and also requires 150 minutes per week of "laboratory" (practice, field work, or recitation).

### Course Number Designation

- 100-199 – Freshman courses
- 200-299 – Sophomore courses
- 300-399 – Junior courses
- 400-499 – Senior courses
- 450-499 – Senior or graduate courses
- 500-599 – First-year graduate courses
- 600-699 – Advanced graduate courses
- 700 – Ph.D. dissertation

In order to register for 300-level courses, a student must have met the basic academic skills requirements.

The letter N will be added as a suffix to the course number when the course credits are not applicable to the baccalaureate and specified associate degrees.

## A E- AEROSPACE ENGINEERING

- A E 102. Introduction to Aerospace Engineering 1 cr.  
A survey course of aeronautical, aerospace, and astronautical engineering, with an emphasis on basic aerospace concepts and major aerospace principles without going into detailed math and analysis. Students are given the opportunity to listen to guest speakers and participate in projects utilizing the NMSU Ultralight and NMSU wind tunnel. Restricted to: Main campus only.
- A E 339. Aerodynamics I 3 cr.  
Fluid properties, conservation equations, incompressible 2-dimensional flow; Bernoulli's equation; similarity parameters; subsonic aerodynamics: lift and drag, analysis and design of airfoils. Prerequisite(s): M E 237. Pre/Corequisite(s): M E 328, C E 301. Restricted to A E majors.
- A E 362. Orbital Mechanics 3 cr.  
Dynamics of exoatmospheric flight of orbiting and non-orbiting bodies; 2-body orbital dynamics and Kepler's laws; orbits in 3 dimensions; orbit determination; orbit design and orbital maneuvers; lunar and interplanetary trajectories. Prerequisite(s): MATH 392, M E 237, and M E 261.
- A E 363. Aerospace Structures 3 cr.  
Advanced concepts of stress and strain, introduction to the analysis of aero structures, complex bending and torsion, thin walled sections and shells, computational techniques. Prerequisites: C E 301
- A E 364. Flight Dynamics and Controls 3 cr.  
Fundamentals of airplane flight dynamics, static trim, and stability; spacecraft and missile six degree of freedom dynamics; attitude control of spacecraft. Prerequisite(s): MATH 392, M E 237, and M E 261.

- A E 400. Undergraduate Research 1-3 cr.  
Performed with the direction of a department faculty member. May be repeated for a maximum of 6 credits. Prerequisite(s): Consent of faculty member.
- A E 405. Special Topics 3 cr.  
Topics of modern interest to be offered by the departmental staff. Consent of instructor required.
- A E 419. Propulsion 3 cr.  
Propulsion systems, thermodynamic cycles, combustion, specific impulse; principles of gas turbines, jet engines, and rocket propulsion systems. Prerequisites: A E 439
- A E 424. Aerospace Systems Engineering 3 cr.  
Basic principles of top down systems engineering and current practice; preliminary and detailed design of aircraft and space vehicles, including requirement, subsystem interaction, and integration, tradeoffs, constraints and non-technical aspects. Prerequisite(s): A E 362.
- A E 428. Aerospace Capstone Design 3 cr. (2P)  
Team Project-analysis, design, hands-on build test, evaluate. Prerequisites: A E 424
- A E 439. Aerodynamics II 3 cr.  
Principles of compressible flow, momentum and energy conservation; thermal properties of fluids; supersonic flow and shock waves; basics of supersonic aerodynamics. Prerequisite(s): A E 339, M E 240.
- A E 447. Aerofluids Laboratory 3 cr. (3+2P)  
Use of subsonic wind tunnels and other flow to study basic flow phenomena and methods of fluid measurement and visualization. Prerequisites: M E 345, A E 339, and A E 364

## A EN- AGRICULTURAL ENGINEERING

- A EN 459. Design of Water Wells/Pumping Systems 3 cr.  
Design of water wells; selection and specification of pumps and power units. Prerequisite: C E 382.
- A EN 475. Soil and Water Conservation 3 cr.  
Types and extent of erosion. Design and operation of structural and vegetative systems to control erosion. Elements of hydrology. Prerequisite: C E 331. Corequisite: C E 382 or consent of instructor.
- A EN 478. Irrigation and Drainage Engineering 3 cr. (2+3P)  
Design and operation of surface and sprinkler irrigation systems; pumping and conveyances; introduction to principles and practices of drainage systems and wells. Prerequisite: C E 382 or consent of instructor.

## A S- ARTS AND SCIENCE

- A S 100. Insights: University Experience for Future Careers 1 cr.  
Research and investigation of college majors and career opportunities.
- A S 101. Success Seminar 1 cr.  
Academic and personal strategies and campus resources to enhance scholastic achievement. Prerequisite: limited to freshmen and students on warning or probation.
- A S 102. Career Planning and Development 1 cr.  
Individual assessment of self, the world of work, and the career decision making process.
- A S 200. Interdisciplinary Topics 1-4 cr.  
An interdisciplinary approach to subject matter cutting across departmental fields. Specific subjects to be announced in the Schedule of Classes.
- A S 300. Interdisciplinary Topics 1-3 cr.  
An interdisciplinary approach to subject matter cutting across departmental fields. Specific subjects to be announced in the Schedule of Classes. Graded S/U.

A S 305. Prehealth Internship 1-3 cr. (30P)  
Placement with an office of a health professional. May be repeated for a maximum of 3 credits. Student must be registered with the Prehealth Advisory Committee and must have a minimum of 15 credits completed at NMSU. Consent of instructor required. Graded: S/U. Prerequisite(s): Minimum junior standing, 2.5 GPA.

### A ST- APPLIED STATISTICS

A ST 251G. Statistics for Business and the Behavioral Sciences 3 cr.  
Techniques for describing and analyzing data; estimation, hypothesis testing, regression and correlation; basic concepts of statistical inference. Prerequisite: C or better in MATH 120. Same as STAT 251G.

A ST 311. Statistical Applications 3 cr.  
Techniques for describing and analyzing economic and biological data; estimation, hypothesis testing, regression and correlation; basic concepts of statistical inference.

A ST 450. Special Topics 1-4 cr.  
Specific subjects and credits announced in the Schedule of Classes. Maximum of 4 credits per semester and a grand total of 9 credits.

A ST 456. Statistical Methods and Data Analysis 3 cr. (2+2P)  
Methods for sampling and estimation; analysis of variance and elementary experimental designs; linear regression and correlation; multiple regression, variable selection methods and residual analysis; introduction to statistical packages. Prerequisite: A ST 251G, A ST 311, or equivalent.

A ST 498. Independent Study 1-3 cr.  
Individual studies directed by consenting faculty with prior approval of the department head. Maximum of 3 credits per semester and a grand total of 3 credits.

### ACCT- ACCOUNTING

ACCT 200. A Survey of Accounting 3 cr.  
Emphasis on financial statement interpretation and development of accounting information for management. For engineering, computer science, and other non business majors. Prerequisite: one C S course or consent of instructor. Community Colleges only.

ACCT 251. Management Accounting 3 cr.  
Development and use of accounting information for management decision making.

ACCT 252. Financial Accounting 3 cr.  
Interpretation and use of financial accounting information for making financing, investing, and operating decisions. Prerequisite: ACCT 251 strongly suggested.

ACCT 301. Financial Accounting I 3 cr.  
Concepts, principles, and practices of financial accounting, stressing the determination of income and financial position. Prerequisite(s): ACCT 251 and C or better in ACCT 252.

ACCT 302. Financial Accounting II 3 cr.  
A continuation of ACCT 301. Prerequisite(s): C or better in ACCT 301.

ACCT 351. Accounting Systems 3 cr.  
Covers accounting information systems as processors of data for financial reporting and control of economic organizations. Prerequisite(s): ACCT 251 and ACCT 252.

ACCT 353. Cost Accounting 3 cr.  
The development and use of cost accounting information for inventory valuation, income determination, and cost control. Prerequisite(s): C or better in both ACCT 251 and ACCT 252.

ACCT 356. Federal Taxes and Business Decisions 3 cr.  
The relationship of federal taxes to common decisions affecting businesses and business owners. Not open to accounting majors for degree credit. Prerequisite: ACCT 252.

ACCT 403. Federal Taxation I 3 cr.  
Basic federal income tax laws; emphasis on determination of taxable income of individuals. Prerequisite(s): ACCT 251, BCIS 338, and C or better in ACCT 252.

ACCT 451. Auditing Theory and Practices 3 cr.  
Auditing standards, audit evidence, auditors reports and opinions, and professional responsibilities. Prerequisite(s): ACCT 351 and C or better in ACCT 302.

ACCT 455. Federal Taxation II 3 cr.  
Federal income tax laws applicable to partnerships, corporations, fiduciaries, tax research, tax planning. Prerequisite(s): C or better in ACCT 403 or consent of instructor.

ACCT 456. Accounting for Nonprofit Organizations 3 cr.  
Control and reporting problems unique to governmental units and other nonprofit organizations. Fund accounting principles, procedures, and reports. Prerequisite(s): C or better in ACCT 302.

ACCT 457. Mergers, Acquisitions, and Partnerships 3 cr.  
Consolidated financial statements, accounting for partnership formation and liquidation. Prerequisite(s): C or better in ACCT 302.

ACCT 459. Ethics and Professionalism in Accounting 3 cr.  
Introduction to ethical reasoning, integrity, objectivity, independence, and professional accounting issues. Students will apply the concepts and theories to accounting-specific cases. Prerequisite: grade of C or better in ACCT 451 or concurrent enrollment or consent of instructor. Same as ACCT 559.

ACCT 460. Fraud Examination and Prevention 3 cr.  
Covers business fraud as it is occurring in American society. Emphasis is on occupational fraud and financial statement fraud. Examines various types of fraud, its symptoms and effective investigation techniques. Effective fraud prevention measures are discussed throughout the course. Emphasizes case studies and the application of principles to actual fraud cases. Prerequisites: a C or better in ACCT 451 or concurrent enrollment.

ACCT 490. Selected Topics 1-3 cr.  
Current topics in accounting. Prerequisites vary according to the seminar offered. May be repeated for a maximum of 12 credits under different subtitles.

ACCT 498. Independent Study 1-3 cr.  
Individual studies directed by consenting faculty with the prior approval of the department head. Prerequisites: junior or senior standing and consent of instructor. A maximum of 3 credits may be earned.

### ACES- AGRICULTURE, CONSUMER, & ENVIRONMENTAL SCIENCES

ACES 111. Freshman Orientation 1 cr.  
Orientation to University life, including the understanding and utilization of resources that promote University success. Designed to promote success in achieving a career objective and perseverance for degree completion. Promotes a recognition of changes required in moving from high school to the University. Eight weeks in length, required for all freshmen in the College of Agricultural, Consumer and Environmental Science.

ACES 121. Financial Fitness for College Students 1 cr.  
An introduction to personal financial practices in post high school and/or college lives. Emphasis is placed on budgeting, savings, investment, college debt, student loans, credit cards, scams and consumer protection.

ACES 305. Advanced Leadership and Communication in Agricultural Sciences 1-3 cr.  
Theory and application of advanced communication techniques, focusing on public speaking and public relations, are emphasized in this course for current and potential college ambassadors. May be repeated to a maximum of 8 credits. Consent of instructor required.

### AERO- AEROSPACE STUDIES

AERO 000. Air Force Leadership Laboratory 0-99 cr. (2P)  
Progressive study and application of Air Force customs, courtesies, drill, ceremonies, military commands, and evaluating these skills. Cadets plan and control the military activities of the cadet corps, prepare and present briefings, motivate, and increase the performance of other cadets. Mandatory each semester for cadets pursuing a commission.

AERO 121. The Air Force Today I 2 cr. (1.25+2P)  
Survey course on the USAF and AFROTC. Includes mission and organization of the Air Force, officer ship and professionalism, military customs and courtesies, as well as basic communication skills. Leadership Lab practicum, AERO 000 is included.

AERO 122. The Air Force Today II 2 cr. (1.25+2P)  
Continuation of AERO 121, with emphasis on Air Force officer opportunities, group leadership problems, and further development of communication skills (oral and written). Includes Leadership Lab practicum, AERO 000.

AERO 221. The Air Force Way I 2 cr. (1.25+2P)  
Topics include: Air Force heritage, Air Force leaders, an introduction to ethics and values, and an application of communication skills. Facilitates the transition from Air Force ROTC cadet to Air Force ROTC candidate. Includes Leadership Lab practicum, AERO CIOD.

AERO 222. The Air Force Way II 2 cr. (1.25+2P)  
Continuation of AERO 221, including an introduction to leadership, quality Air Force, and continued application of communication skills. Includes Leadership Lab practicum, AERO 000.



- AERO 223. Air Force Leadership Development** 1 cr. (2P)  
This course prepares cadets to excel in field training. Cadets are prepared in all facets of field training, including: leadership competency evaluations, the Cadet's Guide to Field Training, individual drill evaluations, attention to detail, dining hall procedures, maintenance of living areas, and the group problem solving process. Restricted to: Main campus only.
- AERO 301. Air Force Leadership and Management I** 4 cr. (3+2P)  
Study of the leadership and quality management fundamentals, professional knowledge, Air Force doctrine, leadership ethics, and communication skills required of an Air Force junior officer. Includes Leadership Lab practicum, AERO 000. Prerequisites: Completion of AERO 121/122 and 221/222, or permission of instructor.
- AERO 302. Air Force Leadership and Management II** 4 cr. (3+2P)  
Continuation of AERO 301, with case studies used to examine Air Force leadership and management situations as a means of demonstrating and exercising practical application of the concepts studied. Continued emphasis on developing communication skills. Includes Leadership Lab practicum, AERO 000. Prerequisites: Completion of AERO 121/122 and 221/222, or permission of instructor.
- AERO 401. Preparation for Active Duty I** 4 cr. (3+2P)  
Examines the national security process, regional studies, and Air Force doctrine. Special topics focus on the military as a profession, officership, and civilian control of the military. Communication skills (oral and written) are refined. Includes Leadership Lab practicum, AERO 000. Prerequisites: Completion of AERO 121/122, 221/222, and 301/302, or permission of instructor.
- AERO 402. Preparation for Active Duty II** 4 cr. (3+2P)  
Continuation of AERO 401, concentrating on advanced leadership ethics, military justice, preparation for active duty, and current issues affecting military professionalism. Continued emphasis on communication skills necessary to succeed as a junior Air Force officer. Includes Leadership Lab practicum, AERO 000. Prerequisites: Completion of AERO 121/122, 221/222, 301/302, and 401 or permission of instructor.
- AERO 411. Aerospace Studies Independent Study** 1 cr.  
This course provides in-depth research on specified topics of the United States Air Force and NMSU's Detachment 505 history. Consent of instructor required. Prerequisite(s): AERO 301, AERO 302, AERO 401, AERO 402.
- AERT- AEROSPACE TECHNOLOGY**
- AERT 105. Aerospace Engineering PLTW** 4 cr. (2+4P)  
Introduce the student to Aerospace Engineering (AE) concepts and history. Studied topics include History of Flight, Aerodynamics, Rocket Science, Orbital Physics, Systems Engineering and Life Support/Environmental Systems. Restricted to: Community Colleges only.
- AERT 111. Basic Electricity and Electronics** 3 cr. (2+2P)  
Fundamentals of electricity and electronics, basic circuit devices, meters, transistors, integrated fiber optics, and industrial application topics. Minimum math proficiency of CCDM 103 or CCDM 104 required or math placement into CCDM 114 or higher. Restricted to: Community Colleges only. Crosslisted with: ELT 105
- AERT 112. Introduction to Manufacturing** 3 cr. (2+2P)  
Introduction to manufacturing evolution from basic assembly process to modern automated processes. Covers history, employability, soft skills, quality measurements, teamwork concept, production requirements, and considerations in plan layout and design. Minimum math proficiency of CCDM 114 required or math placement into MATH 120 or higher. Restricted to: Community Colleges only. Crosslisted with: MAT 105
- AERT 113. Print Reading for Industry** 3 cr. (2+2P)  
Reading, interpretation and revisions of industrial technical drawings common to aerospace. Interpretation of aerospace drawings and related shop calculations. Restricted to: Community Colleges only. Crosslisted with: MAT 115
- AERT 114. Applied Manufacturing Practices** 3 cr. (2+2P)  
Course will illustrate how various products are manufactured along with associated manufacturing processes. Restricted to: Community Colleges only. Crosslisted with: MAT 106
- AERT 115. Machine Operation and Safety** 3 cr. (2+2P)  
Introduce the students to the operation and safety aspects of various types of machinery and equipment including both mechanical and electrical. Course will also include maintenance and safety operation of industrial equipment. Restricted to: Community Colleges only. Crosslisted with: MAT 110
- AERT 121. Introduction to the Aerospace Workplace** 4 cr. (2+4P)  
The course covers space history, regulations, controls, aerospace industry terminology and acronyms as well as hands-on activities related to tools, procedures, and standard practices. Restricted to: Community Colleges only.
- AERT 122. Aerospace Safety and Quality** 3 cr. (2+2P)  
Covers identification of hazards, personal protective equipment, safe practices, and protection of personnel, property, and equipment in the aerospace environment. Basic principles of quality assurance engineering and quality control relating to work processes will be discussed. Restricted to: Community Colleges only.
- AERT 123. Electronics I** 4 cr. (2+4P)  
Fundamentals of electronics including: components, schematics, Ohm's Law, Thevenin's and Norton's theorems, and series/parallel circuits incorporating passive, active, and magnetic elements. Introduction to AC circuits. Restricted to: Community Colleges only. Crosslisted with: ELT 110
- AERT 124. Mathematics for Electronics** 4 cr. (2+4P)  
Includes fundamental mathematics, algebra, sine cosine, and other elementary functions as they specifically apply to the operation, manipulation, and evaluation of direct current (DC) and alternating current (AC) circuits. Minimum math proficiency of CCDM 114 required or math placement into MATH 120 or higher. Restricted to: Community Colleges only. Crosslisted with: ELT 120
- AERT 211. Electromechanical Devices** 4 cr. (2+4P)  
Theory and application of electromechanical devices and digital control circuits. Includes AD and DA converters, pneumatics, hydraulics, programmable logic controllers, DC, AC and stepper motors, and servomechanisms. Prerequisite(s): ELT 160 and (ELT 105 or (ELT 110 and ELT 135)). Restricted to: Community Colleges only. Crosslisted with: MAT 240
- AERT 212. Materials and Processes (Basic Metallurgy)** 3 cr. (2+2P)  
Basic Metallurgy: Aluminum and its alloys (Alclad), hardening, tempering, annealing, anodizing, magnetism, titanium, copper, stainless steel, surgical steel, safety wire, iron rust. Metallurgical Processes: Welding and soldering. Inspection Fundamentals: Eddy currents, magnetic particles (ferrous and non-ferrous metals), ultrasonic, x-ray, visual, corrosion and corrosion control, and vacuum bagging. Restricted to: Community Colleges only.
- AERT 213. Aerospace Fluid Systems** 3 cr. (2+2P)  
This course includes a familiarization of fluid system components, characteristics, and applications. Cryogenic and hypergolic materials and high pressure systems are also covered. Restricted to: Community Colleges only.
- AERT 214. Aerospace Systems** 3 cr. (2+2P)  
This course provides an introduction to expendable and reusable spacecraft systems including hydraulic, pneumatic, electrical, propulsion, mechanical, HVAC, and ECLSS (Environmental Control and Life Support System). How systems interact with computer and data acquisition systems is also covered. Restricted to: Community Colleges only.
- AERT 221. Inspection Requirements and Planning Metrology** 3 cr. (2+2P)  
Course teaches the benefits of inspection, quality control, material conditions. Also covers measurements, including temperature, ultrasonic, vibration and more. Restricted to: Community Colleges only.
- AERT 222. Electromechanical Systems** 3 cr. (2+2P)  
Principles and applications of preventive and corrective maintenance procedures on industrial production machines using systems technical and maintenance manuals to develop troubleshooting procedures using systems block and schematic diagrams. Pre/Corequisite(s): AERT 221 or MAT 240. Restricted to: Community Colleges only. Crosslisted with: MAT 245
- AERT 224. Aerospace Tests and Measurements** 3 cr. (2+2P)  
This course covers electrical and mechanical testing procedures (primarily non-destructive testing), equipment, measurements, and instrumentation involved in aerospace systems. Verification of tool and equipment calibration is also covered. Pre/Corequisite(s): AERT 221. Restricted to: Community Colleges only.
- AERT 225. Cooperative Experience** 1-3 cr.  
Supervised cooperative work program. Student is employed in an approved occupation and supervised and rated by the employer and instructor. Consent of instructor required. Graded: S/U. Restricted to: Community Colleges only.
- AERT 255. Special Topics** 1-4 cr.  
Specific topics to be announced in the Schedule of Classes. Restricted to: Community Colleges only.
- AERT 290. Independent Study** 1-3 cr.  
Individual studies in areas directly related to aerospace. Consent of instructor required. Restricted to: Community Colleges only.

**AG E- AGRICULTURAL ECONOMICS**

- AG E 100. Introductory Agricultural Economics and Business** 3 cr.  
Orientation to agricultural supply businesses, farm and ranch production, food markets, food processing and distribution, and food consumption. Microeconomic principles for managers.
- AG E 111. Freshman Orientation** 1 cr.  
Orientation to university life, including available resources and methods to promote success at NMSU. General exposure to fields in agriculture and home economics. Open to all freshmen and transfer students. Graded S/U.
- AG E 200. Special Topics** 1-4 cr.  
Specific subjects and credits to be announced in the Schedule of Classes. Maximum of 4 credits per semester. No more than 9 credits toward a degree. Consent of instructor required.
- AG E 210G. Survey of Food and Agricultural Issues** 3 cr.  
Survey of food and agricultural issues, including: geography of food production and consumption; human-agricultural-natural resource relations; agriculture in the United States and abroad; modern agribusiness; food safety; food, agriculture, and natural resources policy; ethical questions; role and impact of technology. Same as HNFS 210G.
- AG E 236. Agribusiness Management Principles** 3 cr.  
Description and application of management and financial principles, market planning, and organization theory in small business situations.
- AG E 250. Life with Microcomputers** 3 cr. (2+2P)  
Provides appreciation of the microcomputer in all areas of life. Applications to informational analysis in a wide variety of social, business, technological, and research situations are presented using presentation packages, web page design, electronic spreadsheets, and database systems. Emphasis is on fundamental understanding of how to apply software. Place of the computer in the large picture is emphasized.
- AG E 260. Farm and Ranch Records** 3 cr.  
Purpose and methods of keeping and analyzing farm and ranch records. Net worth and income statements, efficiency measures, analysis of the business, and tax computations.
- AG E 300. Internship** 1-4 cr.  
Professional work experience under the supervision of a faculty member. Prerequisite: consent of instructor. May be repeated for a maximum of 6 credits.
- AG E 305. Marketing and Pricing Agricultural Products** 3 cr.  
Description of agricultural processes and functions; food production and consumption patterns; agricultural product prices; nature of competition in agricultural product markets; commodity markets. Prerequisites: ECON 201 or ECON 252. Same as MKTG 305.
- AG E 311. Financial Futures Markets** 3 cr.  
Emphasis on financial instruments, currencies, and stock index futures. Principles of hedging, arbitrage, speculation, technical and fundamental price analysis, and trading strategies. Simulated computer trading game. Same as FIN 311.
- AG E 314. Agricultural Law** 3 cr.  
Relationship of common-law principles, statutory law and regulatory law to problems involving agriculture with an emphasis on New Mexico issues. Legal problems relevant to agribusiness, torts, fencing laws, liability for agricultural pollution, irrigation water rights, corporations and partnerships, land tenure, farm and ranch tenancy, agricultural labor, farm and ranch management and taxation.
- AG E 315V. World Agriculture and Food Problems** 3 cr.  
Survey of food and agricultural issues in the U.S. and other countries. Covers: role of agriculture in economic development; trade in food and agricultural products; global food production, consumption, and marketing patterns; economics of technical change and food assistance; agriculture and the environment. Same as GEOG 315V.
- AG E 325. Mastering Financial Agricultural Statements** 3 cr.  
Understanding, using, and constructing financial statements for agribusiness analysis. Learn how to produce integrated pro forma financial statements first on paper and then on a spreadsheet. Prepare and link revenue, cost, and financing input assumptions formulas to the financial outcomes on the spreadsheet. Prerequisite: AG E 250 or equivalent experience using spreadsheets. Same as ANSC 325.
- AG E 330V. Organic Fall Vegetable Production** 3 cr.  
Planning, planting, and harvesting vegetable crops following federal guidelines for certified organic production. Emphasis on planting fall crops, harvesting summer crops, and planning summer and fall crops. Sale of produce through community-supported agriculture system. Distribution; financial management; and fertility, weed, disease, and insect-pest evaluation and management. Evaluation of crop production and financial performance from previous spring. Same as HORT 330V. Same as HON 430G with additional coursework for Honors students.
- AG E 331V. Organic Spring Vegetable Production** 3 cr.  
Planning, planting, and harvesting vegetable crops following federal guidelines for certified organic production. Emphasis on planting spring and summer crops, harvesting spring crops, and planning summer and fall crops. Sale of produce through community-supported agriculture system. Distribution; financial management; and fertility, weed, disease, and insect-pest evaluation and management. Evaluation of crop production and financial performance from previous fall. Same as HORT 331V. Same as HON 430G with additional coursework for Honors students.
- AG E 337V. Natural Resource Economics** 3 cr.  
Gain insight into important natural resource problems of our time. Apply economic principles to problems in the preservation, use, and development of agricultural, range, mineral, water, forestry, fishery, and environmental resources. Understand the use of cost-benefit analysis for government natural-resource projects, policies, and programs. Prerequisite: ECON 201 or ECON 252. Same as ECON 337V.
- AG E 340. Agricultural Prices** 3 cr.  
Focuses on the analysis of supply and demand characteristics of commodities with particular attention to agricultural products. Pays special attention to empirical analysis. Includes institutional aspects of pricing, temporal and spatial price relationships, price forecasting, and the economic consequences of pricing decisions. Prerequisite(s): ECON 252G.
- AG E 342. Economic Analysis of Agribusiness** 3 cr.  
A discussion and application of economic, managerial, and financial considerations in agricultural business. Prerequisite(s): ECON 251G, ECON 252G.
- AG E 370. Current Issues in Food and Agriculture** 3 cr.  
Course will consist of analysis and evaluation of current agricultural issues such as animal welfare/rights, water rights, sustainable agriculture, saving the family farm, food safety, foreign agricultural assistance, and others. Alternative perspectives on the issues and policy implications will be discussed.
- AG E 375. Dairy Economics** 3 cr.  
Integration of production, marketing, accounting, finance, agricultural policy, human behavior, and business environment concepts in management of dairy businesses using economic principles related to western dairies production and marketing businesses. Management and economic characteristics of dairying, government policies, including environment, labor, dairy pricing in federal milk marketing orders, and dairy price supports, will be included. Risk management strategies using futures and revenue insurance will be considered. Prerequisite(s): ECON 201G or ECON 252G.
- AG E 380. Agricultural Economics Survey** 3 cr.  
Survey of businesses and industries involved with agriculture, farming and ranching, environmental and resource concerns. Field trip over spring break. Prerequisite: junior or above standing. Variable fee. Graded S/U.
- AG E 384V. Water Resource Economics** 3 cr.  
Use of economic principles to evaluate current and emerging issues in water resources. Applications focus on use of economic methods of analysis to current policy decisions surrounding agricultural, municipal, industrial, and environmental uses of water. Prerequisite: AG E 100 or ECON 252G. Same as ECON 384V.
- AG E 385. Applied Production Economics** 3 cr.  
Analysis of economic principles of agricultural production and planning, emphasizing marginal principles. Practical application in budgeting and analyzing profit maximizing agricultural-production strategies. Prerequisite: ECON 252G.
- AG E 400. Seminar** 1 cr.  
Current topics and cases in the agribusiness literature stressing rigorous qualitative analysis of current problems and policy issues. Prerequisite: junior standing or above. Graded S/U.
- AG E 406. The Economics of Sports** 3 cr.  
Applying the tools of economic analysis to a particular industry and gaining an in-depth knowledge of the interaction of professional sports teams and leagues with the economy and society. Same as ECON 406.

- AG E 420. Special Problems 1-3 cr.  
Special problems in agricultural economics or agricultural business of particular interest to the individual student. Maximum of 3 credits per semester. No more than 6 credits toward degree. Consent of instructor required.
- AG E 425. Agribusiness Financial Management 3 cr.  
Description and application of techniques and principles of financial management to problem situations faced by agricultural businesses, including financial statement development and analysis, capital budgeting, sources and costs of capital. Prerequisite: ECON 252G and ACCT 252G.
- AG E 440. Ranch Economics 3 cr.  
Economic principles related to western ranch business. Business management, economic characteristics of ranches, ranch land problems and values, and economics of rangeland use. Prerequisite: ECON 201G or ECON 252G.
- AG E 445V. Agricultural Policy 3 cr.  
Historical and cultural background of food and agricultural policy in the United States. Analysis of food and agricultural problems, policy-making and implementation. Economic evaluation of specific U.S. food and agricultural policy instruments, their domestic and international impacts. Prerequisites: ECON 251G and ECON 252G.
- AG E 450. Advanced Microcomputer Applications in Agriculture 3 cr. (2+2P)  
An advanced course in electronic spreadsheets and the concepts and tools of database management emphasizing agricultural application. Same as AECC 550 with additional work for graduate credit. Cannot receive credit for both AG E 450 and AECC 550. Prerequisite: AG E 250 or consent of instructor.
- AG E 451. Agribusiness Market Planning 3 cr.  
Applications course in which self-managed teams develop and present marketing plans for agribusiness firms. Emphasis on integrating the marketing mix, particularly promotional elements. Prerequisites: AG E 305 or MKTG 305 or consent of instructor. Same as MKTG 451.
- AG E 452. Food and Agricultural Products Marketing Research Techniques and Written and Oral Presentation Skill 3 cr.  
This course focuses on learning marketing research methods applicable to developing new food and agricultural products and repositioning existing products for new markets. Students will be required to prepare precise written and oral marketing plans to industry standards and will have opportunities to present written and oral plans at national competitions.
- AG E 454. Community Economic Development 3 cr.  
In this course students acquire knowledge and understanding of the tools and techniques and the process by which people in a community study the economic conditions of that community, determine its economic needs and unfulfilled opportunities, decide what can and should be done to improve the economic conditions in that community, and then move to achieve agreed-on economic goals and objectives. Prerequisite(s): ECON 251G and ECON 252G.
- AG E 456. Agribusiness Management 3 cr.  
Integration of production, marketing, accounting, finance, agricultural policy, human behavior, and business environment concepts in management of agricultural businesses using a decision case approach. Prerequisites: Senior standing. Main campus only.
- AG E 458. Economics of Making and Marketing Wine 3 cr.  
Economics of making and marketing wine for small commercial wineries and amateurs. The class starts with selecting, crushing, and fermenting grapes and all the steps required through bottling the wine. Students must be 21 to enroll in the class. Consent of instructor required.
- AG E 470. Real Estate Appraisal 3 cr. (2+2P)  
This course addresses issues influencing the value of real estate with some emphasis upon rural properties. Topics include courthouse records, property taxes, appraisal methodology, expert courtroom testimony, condemnation, and legal issues. Students will take field trips and write appraisals. Course material is relevant to students in Finance, Accounting, and Pre-Law, as well as Agriculture. Accredited for hours to apply to both pre-licensing and continuing education requirements of the New Mexico Real Estate Commission for both Appraisers and Real Estate Brokers. Prerequisite(s): Junior or above standing. Crosslisted with: FIN 470
- AG E 475. Water Resource Management and Policy 3 cr.  
Emphasis on integrating natural and social sciences, analytic methods, and critical reasoning skills to evaluate water resource policy and management issues. Extensive use of data and numerical applications applied to a variety of water resource topics. Familiarity with MS Excel or similar software is desirable. Prerequisite: junior or above standing.
- AG E 491. Linear Programming Methods 1 cr.  
Methods, techniques, and uses of linear and quadratic programming applications in agricultural economics.
- AG E 499. Senior Thesis 3 cr.  
Develop a thesis project with a faculty advisor. The senior thesis requires students to work creatively to apply business and economic principles to address a problem of concern. Prerequisites: consent of department head and have senior standing. Restricted to AEAB majors.
- AGRO- AGRONOMY**
- AGRO 100G. Introductory Plant Science 4 cr. (3+2P)  
Introduction to the physical, biological, and chemical principles underlying plant growth and development in managed ecosystems. In the laboratory portion of the class, students perform experiments demonstrating the principles covered in lecture. The course uses economic plants and agriculturally relevant ecosystems to demonstrate basic principles. Appropriate for nonscience majors. Same as HORT 100G.
- AGRO 111. Freshmen Orientation 1 cr.  
Orientation to university life, including available resources and methods to promote success at NMSU. General exposure to fields in agriculture and home economics. Open to all freshmen and transfer students. Graded S/U.
- AGRO 200. Special Topics 1-4 cr.  
Specific subjects and credits to be announced in the Schedule of Classes. Maximum of 4 credits per semester. No more than 9 credits toward a degree.
- AGRO 250. Plant Propagation 3 cr. (2+2P)  
Practical methods of propagating horticultural plants by seed, cuttings, layering, grafting, division and tissue culture. Examination of relevant physiological processes involved with successful plant propagation techniques. Crosslisted with HORT 250.
- AGRO 257. Introduction to Meteorology 4 cr. (3+3P)  
Introduction to Earth's atmosphere and the dynamic world of weather as it happens. Working with current meteorological data delivered via the Internet and coordinated with learning investigations keyed to the current weather; and via study of select archives. Consent of instructor required. Crosslisted with: GEOG 257 and SOIL 257.
- AGRO 300. Special Topics 1-4 cr.  
Specific subjects and credits to be announced in the Schedule of Classes. Maximum of 4 credits per semester. No more than 9 credits toward a degree.
- AGRO 303V. Genetics and Society 3 cr.  
Relates the science of genetics with social ramifications. Ways in which genetics and evolution interact with social, political, and economic issues. Includes genetic engineering, gene therapy, DNA finger-printing, ancient DNA, plant and animal improvement, and future prospects. Students required to formulate value judgments on contemporary biological issues that will impact society. Restricted to: Main campus only.
- AGRO 305. Principles of Genetics 3 cr.  
Covers fundamental principles of reproduction, variation, and heredity in plants and animals. Prerequisite(s): BIOL 111G, BIOL 211G and either CHEM 111 or CHEM 115. Crosslisted with: ANSC 305, BIOL 305 and HORT 305
- AGRO 311. Introduction to Weed Science 4 cr.  
Principles of weed science with emphasis on characteristics of invasive plants, methods of integrated weed management, and current issues impacting weed management. Identification of local weeds. Prerequisite: junior standing or consent of instructor and CHEM 111G and either BIOL 190 or BIOL 211G. Same EPWS 311.
- AGRO 315. Crop Physiology 3 cr.  
Whole plant physiological processes as related to growth, development, yield, quality and post harvest physiology of crop plants within the environment of the crop community. Prerequisite(s): EPWS/BIOL 314 or consent of instructor. Crosslisted with: HORT 315
- AGRO 357. Climatology 3 cr.  
Elements and controls of climate. Energy and hydrologic cycles, general circulation, climate classification, distribution of climate types, microscale effects, applications. Prerequisites: MATH 120. Same as GEOG 357, SOIL 357.
- AGRO 365. Principles of Crop Production 4 cr. (3+3P)  
Basic principles of crop production including environmental and physiological factors limiting production, plant nutrition and soil science, soil-water management, cropping systems and management, pest management, and economic factors influencing crop production. Prerequisite(s): AGRO/HORT 100, CHEM 111G or equivalent and Math 120 or equivalent. Cross-listed with: HORT 365



- AGRO 377. Introduction to Turfgrass Management** 4 cr. (3+3P)  
Establishment and maintenance of turfgrass with emphasis on seeding methods, soil and water management, mowing, disease, insects and turfgrass varieties. Consent of instructor required. Crosslisted with: HORT 377
- AGRO 391. Internship** 1-6 cr.  
Professional work experience under the joint supervision of the employer and a faculty member. A written report is required. No more than 6 credits toward a degree. Consent of instructor required. Graded: S/U. Crosslisted with: HORT 391 and SOIL 391
- AGRO 447. Seminar** 1 cr.  
Organization, preparation, and presentation of current topics in agronomy, horticulture, and soil science. Same as HORT 447 and SOIL 447.
- AGRO 449. Special Problems** 1-3 cr.  
Research problem, experience training, or other special study approved by a faculty advisor. Maximum of 3 credits per semester and a grand total of 6 credits.
- AGRO 450. Special Topics** 1-4 cr.  
Specific subjects to be announced in the Schedule of Classes. Maximum of 4 credits per semester and a total of 9 credits toward a degree.
- AGRO 462. Plant Breeding** 3 cr.  
Principles and practices involved with the genetic improvement of plants. Prerequisites: ANSC/AGRO/BIOL/HORT 305. Same as HORT 462.
- AGRO 471. Plant Mineral Nutrition** 3 cr.  
Basic and applied aspects of plant requirements for soil-derived minerals and the processes whereby minerals are acquired, absorbed, translocated, and utilized throughout the plant. Prerequisite: EPWS/BIOL 314, or concurrent enrollment, or consent of instructor. Same as HORT 471 and EPWS 471.
- AGRO 483. Sustainable Production of Agronomic Crops** 3 cr. (2+2P)  
Characteristics and objectives of sustainable agricultural systems with application to the production, utilization, and improvement of cereal grain, fiber, forage and oilseed crops. Corequisite(s): AGRO 365 or HORT 365.
- AGRO 492. Diagnosing Plant Disorders** 3 cr. (2+3P)  
Systematic diagnosis of the physiological, pathological, and entomological causes of plant disorders. Prerequisites: EPWS 303 and EPWS 310. Same as EPWS 492 and HORT 492.
- AHS- ALLIED HEALTH SCIENCE**
- AHS 100. Applied Human Biology** 3 cr. (2+2P)  
Designed for pre-allied health students to explore the fundamentals of human biology, physiology functions.
- AHS 101. Communication for Health Care** 3 cr.  
Oral, written, and affective communication skills for individuals interested in pursuing a career in health care. Restricted to: All Community Colleges.
- AHS 108. Disabilities Support Services** 4 cr. (3+2P)  
Beginning level preservice preparation for providing in-home care for individuals with disabilities. Restricted to: Community Colleges only. Cross-listed with: NA 108
- AHS 116. Math for Health Occupations** 3 cr.  
Principles of math and pharmacology necessary for administration of medications. Prerequisite(s): CCDM 114N or equivalent. Restricted to: All Community Colleges.
- AHS 120. Medical Terminology** 3 cr.  
Study of medical terminology as it relates to understanding diseases, their causes and effects, and the terminology used by the medical specialties. Stress is placed on medical terms, their use, spelling, English translation, and pronunciation. Same as NURS 150 and BOT 150.
- AHS 140. Essentials of Anatomy and Physiology** 4 cr. (3+3P)  
Essentials of anatomy and physiology for those considering a career in health as well as those interested in understanding their own body and the basics of health.
- AHS 153. Introduction to Anatomy and Physiology I** 4 cr. (3+3P)  
Survey of human anatomy and physiology. Prerequisite: high school biology or high school chemistry, or CHEM 110G, or consent of instructor.
- AHS 154. Introduction to Anatomy and Physiology II** 4 cr. (3+3P)  
Continuation of OEHO 153. Prerequisites: CHEM 110G and OEHO 153, or consent of instructor.
- AHS 155. Special Topics** 1-6 cr.  
Topics to be announced in the Schedule of Classes. May be repeated for a maximum of 6 credits.
- AHS 175. Health Careers Survey I** 5 cr.  
An introductory overview class for students interested in the medical field. Information regarding education course requirements in preparation for post-secondary schooling and presentations by guest speakers from a variety of health positions in the community will be featured. Topics include history of medicine, safety, universal precautions and medical ethics; beginning knowledge of communication skills; basic elements of medical terminology and medical abbreviations; procedures for vital sign assessment.
- AHS 176. Health Careers Survey II** 5 cr.  
Builds upon Health Careers Survey I. In depth view of medical terminology and abbreviations and communication techniques; current health care issues and health education. Confidentiality and medical ethics are stressed. Guest speakers from the community will share their experiences in the medical field. Student must have a current TB test. Prerequisites: A C or better in OEHO 175, or consent of instructor.
- AHS 177. Health Careers Coop I** 6 cr. (4+4P)  
Introduction to Certified Nursing Assistant (CNA) nursing and a variety of other medical opportunities. CNA skills and simple assessment; practice of the skills provided in a laboratory setting and may include on-site clinicals. Written and verbal communication skills are emphasized. The legal and ethical aspects of nurse aide practice are also included. Medical terminology will be used throughout the course. Student must have a current TB test. Prerequisites: C or better in OECS 175 and OECS 176 or consent of instructor.
- AHS 178. Health Careers Coop II** 6 cr. (4+4P)  
Builds on Health Careers Survey I, II and Health Careers Coop I. CNA skills and assessments will continue to be practiced and refined in the laboratory setting as well as on site clinicals. Some job shadowing may be included. Legal and ethical standards will be a primary focus. Written and verbal communication skills will be expanded. Confidentiality will be stressed. Medical terminology will be used throughout the course. Student must have a current TB test. Prerequisites: OEHO 175, OEHO 176 and OEHO 177 or consent of instructor.
- AHS 200. Independent Study** 1-4 cr.  
Individual studies directed by a consenting faculty member. Prior approval of the department head required. Prerequisite: consent of instructor. May be repeated for a maximum of 10 credits. Restricted to majors.
- AHS 202. Legal and Ethical Issues in Health Care** 3 cr.  
Consideration of legal and ethical issues in modern health care delivery.
- AHS 225. Nutrition for Health Occupations** 3 cr.  
Principles of normal and clinical nutrition for health professions. Prerequisites: high school biology and high school chemistry and CHEM 110G and OEHO 153 or equivalent or consent of instructor. Corequisite: OEHO 154 or consent of instructor.
- AHS 253. Microbiology for Health Occupations** 4 cr. (3+3P)  
Study of the relationship between pathogenic organisms and disease processes. Prerequisites: high school biology and high school chemistry, CHEM 110G, and OEHO 153 or equivalent or consent of instructor. Corequisite: OEHO 154 or equivalent.
- AHS 255. Special Topics** 1-6 cr.  
Topics to be announced in the Schedule of Classes. May be repeated for a maximum of 6 credits.
- ANSC- ANIMAL SCIENCE**
- ANSC 100. Introductory Animal Science** 3 cr.  
Orientation and survey of livestock industry in the United States; introduction to feeding, breeding, and management practices for producing farm animals and select companion animals.
- ANSC 100 L. Introductory Animal Science Laboratory** 1 cr. (2P)  
Students will observe and participate in activities related to farm animal management and will include areas of livestock selection, nutrition, reproductive physiology, animal ID and animal health. This lab is required for animal science majors. Pre/Corequisite(s): ANSC 100.
- ANSC 103. Introductory Horse Science** 3 cr. (2+2P)  
The light horse industry; breeds; introduction to feeding, breeding, marketing and management; handling and selecting horses for breeding and performance.
- ANSC 111. Freshmen Orientation** 1 cr.  
Orientation to university life, including available resources and methods to promote success at NMSU. General exposure to fields in agriculture and home economics. Open to all freshmen and transfer students. Graded S/U.



- ANSC 112. Companion Animals in Society 3 cr.  
Examination of the history, evolution, and future roles of companion animals in human society. The companion animal industry, governmental policies and laws, and sports and competitions involving interactions between companion animals and humans will be explored. Special emphasis will be given to canine, equine, and feline species. Restricted to: Main campus only.
- ANSC 190. Western Equitation I 2 cr. (4P)  
Basic principles of Western riding, including care and management of the riding horse, equitation equipment, and development of riding skills.
- ANSC 200. Introduction to Meat Animal Production 3 cr. (2+2P)  
Production and utilization of beef cattle, sheep and swine; emphasis on feeding, breeding, management problems and marketing; selection of animals for breeding and market.
- ANSC 201. Introduction to Genetics for Animal Production 3 cr.  
Introduction to genetics and inheritance relative to livestock production. Introduction to procedures for collection and use of performance information in livestock improvement programs. Prerequisite: BIOL 111.
- ANSC 220. Animal Science Career Development 1 cr.  
Introduction to scientific disciplines and career options in animal-agriculture career-skill development, including resume preparation, networking, importance of internships, and leadership experiences in animal agriculture.
- ANSC 250. Special Topics 1-4 cr.  
Specific subjects and credits to be announced in the Schedule of Classes. Maximum of 4 credits per semester. No more than 9 credits toward a degree.
- ANSC 251. Companion Animals and the Human-Animal Bond 3 cr.  
The science behind the human-animal bond. An examination of the interactions between humans and companion animals and the effects on human health and wellness. Topics will include Animal Assisted Activity (AAA), Animal Assisted Therapy (AAT), and service animals. Restricted to: Main campus only.
- ANSC 261. Introduction to Animal Metabolism 3 cr.  
Principles underlying the mechanisms of animal metabolism as they relate to production, maintenance, and health of animals. Prerequisite: CHEM 111G.
- ANSC 262. Introduction to Meat Science 3 cr. (2+3P)  
Fundamental aspects of the red meat industry. Lecture topics and laboratory exercises include the nutrient value of meat, meat preservation, meat safety, muscle structure and contraction, slaughter and processing of beef, lamb, and pork, sausage manufacture, meat curing, meat cookery, and muscle and bone anatomy.
- ANSC 265. Horse Evaluation 2 cr. (4P)  
Selection and classification of horses.
- ANSC 285. Companion Animal Management 3 cr.  
Introduction to care and management of companion animals. Topics will include an understanding of common varieties of pets and their place within human cultures, domestication, breeding ethics, nutrition, management; and health care topics.
- ANSC 288. Horse Fitting and Selling 3 cr.  
Preparation of horses for sale; planning and conduct of auction sale; application of marketing principles relating to selling horses. Prerequisite: ANSC 103 or consent of instructor.
- ANSC 289. Management of Equine Operations 3 cr.  
Introduction and application of business skills necessary to effectively manage the equine operation. Students will learn how to use strategic thinking and sound business management practices to succeed in the demanding equine industry. Prerequisite(s): ANSC 103 or consent of instructor.
- ANSC 290. Western Equitation II 2 cr. (4P)  
Intermediate principles of Western riding, including reading horse behavior, limbering-up exercises, and developing riding skills. Introduction to rollbacks, turnarounds and stops. Prerequisite: consent of instructor.
- ANSC 295. Team Competition in Animal Science 1-2 cr.  
Training in team competition in the animal sciences. May be repeated for a maximum of 6 credits.
- ANSC 301. Animal and Carcass Evaluation 3 cr. (2+2P)  
Determination of the market value of meat animals by relating live animal and carcass traits. Topics include the identification of economically important traits, grading, growth and development, wholesale and retail pricing, and futures and options markets.
- ANSC 302. Therapeutic Horseback Riding I 3 cr.  
Basic principles and understanding of horsemanship and therapeutic riding, including equipment, safety, how to be an effective volunteer, side walker, and horse handler. Consent of instructor required.
- ANSC 303. Livestock, Meat and Wool Evaluation 4 cr. (3+2P)  
Selection, classification, grading, and judging of livestock, meat, and wool.
- ANSC 304. Feeds and Feeding 3 cr. (2+2P)  
Digestibility of feeds, their nutritive values, grades, and classes, principles of ration formulation and computer ration formulations, and practical feeding of farm animals.
- ANSC 305. Principles of Genetics 3 cr.  
Covers fundamental principles of reproduction, variation, and heredity in plants and animals. Prerequisite(s): BIOL 111G, BIOL 211G and either CHEM 111 or CHEM 115. Crosslisted with: AGRO 305, BIOL 305 and HORT 305
- ANSC 310. Exhibiting Livestock 3 cr. (1+4P)
- ANSC 311. Companion Animal Behavior and Training 3 cr.  
An examination of the behavior of companion animals and the role that genetics, physiology, neurobiology and domestication have played. Training methods and problem behaviors will be examined. The influence of companion animal owners in shaping their animal's behavior will be explored. Emphasis will be on canine and feline species.
- ANSC 312V. Companion Animals and the Human/Animal Bond 3 cr.  
The science behind the human-animal bond. An examination of the interactions between humans and companion animals and the effects on human health and wellness. Cultural and geographical differences in the human-animal bond will be explored. Topics will include Animal Assisted Activity (AAA), Animal Assisted Therapy (AAT), and service animals. Emerging and future uses of companion animals in human-animal interactions will be discussed.
- ANSC 314. Swine Production 3 cr. (2+2P)  
Breeding, feeding, and care of swine. Prerequisite: ANSC 304.
- ANSC 320. Applied Horsemanship 3 cr. (6P)  
Basic principles, methods and philosophies of handling, breaking and training the two-year-old Western horse. Prerequisite: ANSC 290 and/or consent of instructor.
- ANSC 321. Applied Horsemanship II 3 cr. (6P)  
Continuation of ANSC 320. Further development of skills required to advance the training of the two-year-old Western horse. Emphasis will be placed on lateral work, lead changes, turn-arounds, obstacles, and making the horse accustomed to ranch and trail riding situations. Prerequisites: ANSC 320 or consent of instructor.
- ANSC 325. Mastering Financial Agricultural Statements 3 cr.  
Same as AG E 325.
- ANSC 350. Special Topics 1-4 cr.  
Specific subjects and credits to be announced in the Schedule of Classes. Maximum of 4 credits per semester. No more than 9 credits toward a degree.
- ANSC 351V. Agricultural Animals of the World 3 cr.  
Global study of the development and use of animals for production of food and nonfood products. Climatic, cultural, and economic influences on systems of livestock production and species and breeds of livestock utilized will be evaluated.
- ANSC 353. Advanced Livestock Evaluation 2 cr. (4P)  
Advanced selection, classification and grading of livestock.
- ANSC 355. Advanced Horse Evaluation 2 cr. (4P)  
Advanced selection and classification of horses.
- ANSC 363. Meat Technology 3 cr.  
Structure function and composition of muscles; factors influencing conversion of muscle to meat; buying, palatability and nutritive value of meat and meat products.
- ANSC 370. Anatomy and Physiology of Farm Animals 4 cr. (3+2P)  
Structure and function of the animal body. Includes studies of the horse, cow, sheep, pig, and comparisons with the human body. Prerequisites: CHEM 111G and BIOL 190 or 211G.
- ANSC 383. Equine Reproductive Management 3 cr. (1+4P)  
Anatomy, physiology, and endocrinology of reproduction of the mare and stallion; training in modern reproductive techniques employed in the horse industry. Prerequisites: ANSC 103, ANSC 289, and ANSC 370.

- ANSC 390. Internship 1-3 cr.  
Professional work experience under the joint supervision of the employer and a faculty member. A written report is required. No more than 3 credits toward a degree. Prerequisite: consent of instructor. Graded S/U.
- ANSC 395. Team Competition II 1-2 cr.  
Advanced training in team competition in the animal sciences. May be repeated for a maximum of 6 credits.
- ANSC 402. Animal Science Seminar 1 cr.  
Review of the current literature in animal sciences. Oral and written reports.
- ANSC 412. Companion Animal Health and Diseases 3 cr.  
Examination of the differences between infectious and non-infectious diseases and the basics of the immune system. Pathophysiology and treatment of common diseases affecting canines and felines and the role the pet owner plays in pre-disposing their animals to disease. Prerequisite(s): ANSC 370 or consent of instructor.
- ANSC 414. Sheep and Wool Production 3 cr. (2+2P)  
Genetics, nutrition, physiology and management of sheep. Wool grading, shearing, and disease control. Prerequisites: ANSC 304 and junior status.
- ANSC 415. Horse Science and Management 3 cr. (2+2P)  
Senior level course requiring students to apply basic knowledge acquired in the prerequisite courses to solve typical problems encountered in the horse industry. Specific topics include genetics and animal breeding, business and legal issues, reproduction, health, nutrition and exercise physiology. Prerequisites: ANSC 304 and ANSC 370 or concurrent registration.
- ANSC 416. Beef Production 3 cr. (2+2P)  
Breeding, nutrition, management and marketing of beef cattle. Prerequisite(s): ANSC 304 and (ANSC 201 or ANSC 305) or concurrent registration.
- ANSC 417. Dairy Production 3 cr. (2+2P)  
Breeding, nutrition, physiology and management of dairy cattle. Prerequisite(s): ANSC 304 and (ANSC 201 or ANSC 305) or concurrent registration.
- ANSC 421. Physiology of Reproduction 4 cr. (3+2P)  
Fertility and the role of hormones, nutrition, selection, management and environment in the maintenance of high reproductive rate. Prerequisite(s): ANSC 370.
- ANSC 422. Animal Nutrition 3 cr.  
Nutrient utilization and measurement; nutrient requirements for the various body functions. Prerequisite: CHEM 211.
- ANSC 423. Animal Breeding 3 cr. (2+2P)  
Mating systems, and selection procedures; calculation of inbreeding coefficients, genetic relationships, and gene frequency. Prerequisite(s): ANSC 201 or 305.
- ANSC 448. Problems 1-4 cr.  
Individual investigation in a specific area of animal science. Maximum of 4 credits per semester. No more than 6 credits toward a degree.
- ANSC 450. Equine Assisted Learning 3 cr.  
Covers the complex relationship between horses and humans. Students are introduced to human psychological theories and methods of how people and horses can work together and the application of such structured learning settings using horses to achieve learning outcomes. Students will also be introduced to horsemanship including proper use and maintenance of equipment, safety, handling, basic care, behavior of horses and benefits of the horse. Consent of instructor required. Crosslisted with: FCS 450
- ANSC 458. Livestock Behavior, Welfare and Handling 3 cr. (2+3P)  
Principles of animal behavior and evaluation of management practices on animal welfare in confined and rangeland livestock operations. Low stress livestock handling techniques. Design of livestock handling facilities. Prerequisite(s): RGSC 294 or ANSC 100. Crosslisted with: RGSC 458
- ANSC 462. Parasitology 3 cr.  
Same as EPWS 462.
- ANSC 462 L. Parasitology Lab 1 cr.  
Classification, biological effects, and management of animal parasites of man, domestic animals, and wildlife. One-hour lab is optional. Same as EPWS 462.
- ANSC 468. Advanced Dairy Herd Management 3 cr.  
The course is offered through the Southern Great Plains Dairy Consortium in Clovis, NM, and will include breeding, nutrition, physiology, health and management of large herd dairies of the Southwest. Students must apply for the course through the Consortium, and can take it more than once, as topics vary. Consent of instructor required. Prerequisite(s): ANSC 304.
- ANSC 480. Environmental Physiology of Domestic Animals 3 cr.  
Influence of environmental factors on physiological processes of domestic animals. Prerequisite: ANSC 370.
- ANSC 484. Ruminant Nutrition 3 cr.  
Energy, nitrogen, and mineral nutrition of ruminants with special emphasis on digestive physiology and metabolism of nonprotein nitrogen compounds. Prerequisite: ANSC 422.
- ANSC 485. Advanced Animal Breeding 3 cr.  
Population genetics, heritability, selection, gene x environment and gene x gene interactions, composite development, molecular genetic technology and manipulation. Prerequisite: ANSC 423 and A ST 311.
- ANTH- ANTHROPOLOGY**
- ANTH 110. New World Prehistory 3 cr.  
Survey of major prehistoric developments in North and South America from the first entry of people into the New World to the arrival of European settlers.
- ANTH 115. Native Peoples of North America 3 cr.  
General survey of the ethnology of selected native American groups.
- ANTH 116. Native Peoples of the American Southwest 3 cr.  
Introduction to the early history and culture of native people of the Southwest.
- ANTH 118. Introduction to Historic Preservation 3 cr.  
Introduction to historic preservation, its history, goals, methods, legal basis, and economic importance. Explores public role in decision-making. Community Colleges only.
- ANTH 120G. Human Ancestors 3 cr.  
Evolutionary history of the human species from its origin in the primate order, with primary emphasis on the evolution of humankind during the past three million years. Examination of the social lives of apes and consideration of similarities to and differences from them. Biological foundations of human behavior, emphasizing thought, movement, and interaction.
- ANTH 125G. Introduction to World Cultures 3 cr.  
Introductory survey of anthropological studies of human thought and behavior in different world cultures, covering social, cultural, economic, political, and religious practices and beliefs.
- ANTH 130G. Human's Place in Nature: Introduction to Biological Anthropology 3 cr.  
This course uses scientific methods and principles to examine human evolutionary history and family tree relationships, as well as the biological foundations of human behavior. Through lectures, readings and laboratory assignments students are introduced to the history and development of modern evolutionary biology, molecular and population genetics, the primate and human fossil record and modern human biological diversity. By examining the social lives of apes and other primates, primitive and unique aspects of human behavior are identified and the lives of fossil ancestors are reconstructed. Corequisite(s): ANTH 130GL.
- ANTH 130GL. Human's Place in Nature Laboratory 1 cr. (2P)  
This one credit laboratory course uses scientific methods and principles to examine evidence for human evolutionary history and family tree relationships, primate ecology and behavior, and modern human diversity.
- ANTH 201G. Introduction to Anthropology 3 cr.  
Exploration of human origins and the development of cultural diversity. Topics include biological and cultural evolution, the structure and functions of social institutions, belief systems, language and culture, human-environmental relationships, methods of prehistoric and contemporary cultural analysis, and theories of culture.
- ANTH 202G. Introduction to Archaeology and Physical Anthropology 3 cr.  
Provides an introduction to the methods, theories, and results of two sub-fields of anthropology: archaeology and physical anthropology. Archaeology is the study of past human cultures. Physical anthropology is the study of human biology and evolution.
- ANTH 203G. Introduction to Language and Cultural Anthropology 3 cr.  
Provides an introduction to the methods, theories, and results of two sub-fields of anthropology: linguistics and cultural anthropology. Linguistics is the study of human language. Cultural anthropology is the study of the organizing principles of human beliefs and practices.
- ANTH 205. Basic Methods in Archaeology 3 cr.  
Examines the aims and methods of archaeology with particular emphasis on the nature of archaeological evidence and its interpretation. Community Colleges only.
- ANTH 297. Elementary Special Topics 1-4 cr.  
Specific subjects to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits.

- ANTH 301. Cultural Anthropology 3 cr.  
Human concepts of culture and life processes.
- ANTH 304. Contemporary SW Native Americans 3 cr.  
Introduction to the contemporary Native American peoples of the Southwest borderlands. Emphasis on sociocultural change and persistence including present day socioeconomic status.
- ANTH 305V. Contemporary Native Americans 3 cr.  
Introduction to contemporary native peoples and cultures of North America. Emphasis on sociocultural and socioeconomic history, sociocultural change and persistence, present day reservation life, and current social and economic goals.
- ANTH 306V. Peoples of Latin America 3 cr.  
Introduction to cultural patterns and diversity of Latin America with emphasis on indigenous groups, peasants, plantation workers, and urban residents throughout South America, the Caribbean, Mexico, and Central America.
- ANTH 307. Peoples of Mexico and Guatemala 3 cr.  
Ethnographic study of cultural groups in Mexico and Guatemala. Critical examination and discussion of a variety of ethnographies. Designed for ANTH and SOC majors.
- ANTH 308. Peoples of the Southwest 3 cr.  
Ethnographic study of cultural groups in the southwest. Critical examination and discussion of a variety of ethnographies. Designed for ANTH and SOC majors.
- ANTH 312. The Ancient Maya 3 cr.  
Archaeological evidence of culture change in the Maya civilizations of Mexico and Central America from 2000 BC to the Spanish Conquest.
- ANTH 313. Ancient Mexico 3 cr.  
Archaeological evidence of culture change among the Aztecs, Zapotecs, and their predecessors in Central Mexico and Oaxaca from 7,000 BC to the Spanish Conquest.
- ANTH 315. Introduction to Archaeology 3 cr.  
Concepts and methods for study of prehistoric cultures; history of archaeological research.
- ANTH 316. Archaeology of the American Southwest 3 cr.  
Introduction to the prehistoric peoples of the North American Southwest, a historical approach emphasizing the rise of method and theory in the region.
- ANTH 318. Historical Archaeology 3 cr.  
Method and theory of the archaeology of historical periods.
- ANTH 320. Anthropological Linguistics 3 cr.  
The study of language and culture with particular emphasis on the cultural factors in the communication process.
- ANTH 330V. Introduction to Religious Studies 3 cr.  
Provides an overview of old and new methods and theories for the study of religion. Exposure to the ways groups of people in diverse cultural systems construct and change their religious traditions to serve practical and meaningful ends. Same as SOC 330V and HIST 330V.
- ANTH 334. Anthropology of Art 3 cr.  
Cross-cultural survey of art traditions asking the following: Why do people make art? What meanings do art traditions convey? What are the relationships between art traditions, artists, and their societies?
- ANTH 335. History of Christianity 3 cr.  
Emphasizes perceptions about Jesus, the changing nature and role of the Bible, especially the new testament, interactions of religion and government, issues of faith and culture, and development of modern Christianity. Same as HIST 335 and SOC 335.
- ANTH 336. Drugs, Culture and Society 3 cr.  
Historical cross-cultural survey of human's experiences with psychoactive substances, including the use of these substances for spiritual purposes as well as their relationship to social problems.
- ANTH 345. Introduction to Museology 3 cr.  
Museum philosophy, history, administration, and collection management. Emphasis on cataloging, care, and exhibition, as well as ethics and public responsibility.
- ANTH 350. Anthropological Theory 3 cr.  
Historic and contemporary thought.
- ANTH 355. Physical Anthropology 3 cr.  
An introduction to primate behavior, human evolution, and physical variation in modern human populations.
- ANTH 357V. Medical Anthropology 3 cr.  
Evolutionary, epidemiological, and cross-cultural perspectives on disease, curing, and health care systems.
- ANTH 360V. Food and Culture Around the World 3 cr.  
Study of the interaction between food and human culture from an anthropological perspective. Examines the traditional role of food in local economies, social relations, and identity around the world. Also examines the impact of globalization on traditional food systems and cultures.
- ANTH 361V. Social Issues in the Rural Americas 3 cr.  
Discussion of major social issues in the rural United States and Latin America. Topics include social history, cultural groups, land tenure, irrigation, government policy, markets, and agricultural labor. Same as SOC 361V.
- ANTH 362. Environmental Anthropology 3 cr.  
This course examines ecology and current environmental studies from an anthropological point of view. The class focuses on how cultural values mediate environmental management. The class will cover topics such as theoretical foundations of ecological anthropology, large scale development, biodiversity conservation, sustainable environmental management, indigenous groups, consumption and globalization.
- ANTH 370. Human Osteology and Forensic Anthropology 3 cr.  
An introduction to the human skeleton and to forensic anthropology.
- ANTH 378. Introduction to Lab Methods in Archaeology 3 cr.  
Laboratory techniques used in the analysis of archaeological materials.
- ANTH 385. Internship in Anthropology 3-12 cr.  
Applied or field experience to gain professional expertise. Placements with public agencies, NGOs, or research organizations. Topical focus tailored to student's individual needs through consultation with instructor. Prerequisite(s): Junior status, consent of instructor and GPA 2.8 or better.
- ANTH 387. Field work in Latin America 3-12 cr.  
Anthropological field methods in Latin America including in-field lab analysis. Prerequisite: consent of instructor. May not be taken S/U.
- ANTH 388. Intermediate Field Session 2-6 cr.  
Training in archaeological field methods, including excavations of prehistoric sites, record keeping, mapping and analysis of data. Prerequisite: consent of instructor.
- ANTH 389. Archaeological Mapping 3-6 cr.  
Techniques for mapping archaeological sites and recording spatial distributions of archaeological data using a variety of surveying equipment and computer mapping software.
- ANTH 398. Intermediate Historical Field Archaeology 3-6 cr.  
Training in historical archaeological field methods, including excavation, record keeping, mapping, historic research, and analysis of data. Prerequisite: consent of instructor.
- ANTH 401. Ethnography Seminar 3 cr.  
A literature review of ethnographic field research, data gathering, and analysis. A wide variety of anthropological publications will be critically examined and discussed. Designed for ANTH and SOC majors.
- ANTH 404. Cultures of Africa 3 cr.  
Explores the rich history and cultural diversity of the continent of Africa. The course first examines the historical processes that shaped modern Africa, including the evolution of modern humans in Africa, the origins of agriculture and pastoralism, the formation of indigenous African states, the slave trade, and European colonialism. The course also looks at contemporary African societies, including hunter-gatherer, pastoral, and farming/fishing peoples. In addition, contemporary issues facing modern Africa such as famine and agricultural policy, the status of women, and environmental challenges such as deforestation are discussed. Taught with ANTH 504. Crosslisted with: HIST 404
- ANTH 405. Native Cultures of North America 3 cr.  
Description and analysis of the Native peoples north of Mexico.
- ANTH 406. Introduction to Anthropological Practice 3 cr.  
Capstone course for seniors designed to allow students to synthesize the anthropological knowledge they have acquired and connect theory and application in preparation for entry into a career. Among other things, students are required to write a paper in one of the subdisciplines.
- ANTH 414. The Archaeology of Religion 3 cr.  
Exploration of the methods and theories used by archaeologists to study prehistoric religion.
- ANTH 415. Applied Anthropology 3 cr.  
Examines the intellectual roots of applied anthropology and early case studies of anthropologists working as administrators. Examines the ethical and methodological approaches that applied anthropologists employ. Examination of case studies that show role of applied anthropologists in improving human service delivery, cultural preservation, planning and implementing programs of participatory change, advocacy, and economic development. Taught with ANTH 515.



- ANTH 419. Topics in Prehistoric Archaeology 3 cr.  
Specific subjects in prehistoric archaeology as announced in the Schedule of Classes. Prerequisite: junior or senior standing. May be repeated for a maximum of 6 credits.
- ANTH 431. Nutritional Anthropology 3 cr.  
Evolutionary and cross-cultural perspective on human nutrition.
- ANTH 432. Anthropology of Religion 3 cr.  
Cross-cultural overview of spiritual beliefs and practices in societies in which religion and world view are often the same.
- ANTH 433. Women, Gender, and Culture 3 cr.  
Survey of the history of ideas about women and gender in the discipline of anthropology and a comparison of gender roles, relations, and ideologies across a range of cultures. Same as W S 433.
- ANTH 434. Human Evolution 3 cr.  
Overview of human biological evolution from the emergence of Miocene apes to modern human diaspora. Prerequisite(s): ANTH 355 or consent of instructor. Corequisite(s): ANTH 434L. Crosslisted with: BIOL 434
- ANTH 434 L. Human Evolution Laboratory 1 cr. (1P)  
Laboratory in human evolution, includes exercises and activities to learn the human fossil record. Corequisite: ANTH 434. Prerequisite: ANTH 355 or consent of instructor. Crosslisted with BIOL 434 L.
- ANTH 449. Directed Reading 1-6 cr.  
Comprehensive reading on selected topics. May be repeated for a maximum of 6 credits. Prerequisite(s): Upper division anthropology majors with consent of instructor.
- ANTH 449 H. Directed Reading Honors 1-3 cr.  
Same as ANTH 449. Additional work to be arranged. May be repeated for a maximum of 6 credits.
- ANTH 451. Practical Forensic Anthropology 1 cr. (3P)  
Advanced laboratory exercises in identification of human skeletal remains. May be repeated for a maximum of 3 credits. Prerequisite: ANTH 430 or ANTH 530.
- ANTH 452. Practical Fauna Analysis 1 cr.  
Advanced laboratory exercises in the identification of animal bone recovered from paleontological and archaeological contexts. Prerequisite: consent of instructor. May be repeated for a maximum of 3 credits.
- ANTH 455. Federal Indian Policy 3 cr.  
Federal Indian policy and its impact on Native Americans. This course will provide basic understanding of how federal Indian policy impacts almost all activities and situations with Native Americans. Course will also look at issues such as sovereignty and how it impacts most interactions with tribal groups.
- ANTH 458. Anthropology of Reproduction 3 cr.  
Human life cycle is studied from biological, evolutionary, cross-species, and cross-cultural perspectives. Coverage of pregnancy, birth, infancy, childhood, puberty, adulthood, menopause, aging, senescence, and death. Prerequisite: ANTH 201G or consent of instructor.
- ANTH 459. Peru: From Incas to Inca Kola 3 cr.  
Explores issues of cultural and national identity in Peru from the Incas to the present, focusing on the modern period. Themes include indigenous resistance and adaptation to colonial rule, nationalism, militarism, terrorism, globalization, and the drug trade. Crosslisted with: HIST 459
- ANTH 467. Archaeology of the American Southwest 3 cr.  
Description and analysis of prehistoric archaeology of the American Southwest including paleo-environmental reconstruction, culture change, and relations with contemporary cultures. Prerequisite: ANTH 315.
- ANTH 472. Primate Behavior and Ecology 3 cr.  
Survey of the social behavior and ecology of nonhuman primates.
- ANTH 473. Primate Adaptation and Evolution 3 cr.  
Survey of the adaptations and evolutionary history of nonhuman primates. Prerequisite: ANTH 355 or consent of instructor.
- ANTH 473 L. Primate Evolution Laboratory 1 cr. (1P)  
Laboratory with exercises on non-human primate adaptation and evolution. Consent of instructor required. Prerequisite(s): Anth 355 or consent of instructor.
- ANTH 474. Human Osteology 3 cr.  
A survey of the functional, developmental, and evolutionary biology of the human skeleton. Identifying bones and teeth from hands-on experience with skeletal and dental material. Provides a foundation for human evolutionary studies, bioarchaeology and forensic anthropology. Prerequisite: ANTH 355, 370 or equivalent.
- ANTH 474 L. Human Osteology Lab 1 cr. (1P)  
Laboratory for ANTH 474. Experiences and activities related to identifying teeth and bones of the human skeleton. Prerequisites: ANTH 355, 370 or equivalent.
- ANTH 475. Bioarchaeology and Forensic Anthropology 3 cr.  
An examination of human skeletal remains at the level of the population (bioarchaeology) and the individual (forensic anthropology). Introduction to methods used for determination of age, sex, and biological affinity and identification of pathological conditions. Principles of analysis in prehistoric demography and epidemiology will be discussed. Prerequisite: ANTH 474 or consent of instructor.
- ANTH 477. Faunal Analysis 3 cr.  
Detailed study and analysis of taphonomic processes affecting animal bone recovered from archaeological and paleontological contexts. Prerequisite: either ANTH 315, ANTH 355, or BIOL 330.
- ANTH 485. Field Experience 1-3 cr.  
Anthropological or archaeological field work experience in private, state and federal agencies. Must spend 30 hours in a field setting per credit hour earned. Prerequisite: complete 12 ANTH credits and consent of instructor. May be repeated for a maximum of 6 credits.
- ANTH 488. Advanced Field Session 1-6 cr.  
Archaeological field methods, including excavations of prehistoric sites, record keeping, mapping, and analysis of data. Prerequisites: previous field experience and consent of instructor.
- ANTH 497. Special Topics 1-6 cr.  
Specific subjects to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits. Prerequisite(s): Junior or above standing.
- ARAB- ARABIC**
- ARAB 111. Elementary Arabic I 4 cr.  
Arabic language for beginners.
- ARAB 112. Elementary Arabic II 4 cr.  
Arabic language for beginners. Prerequisite: C or better in ARAB 111.
- ARAB 211. Intermediate Arabic I 3 cr.  
Speaking, reading and writing. Prerequisite: C or better in ARAB 112.
- ARAB 212. Intermediate Arabic II 3 cr.  
Speaking, reading and writing. Prerequisite: C or better in ARAB 211.
- ARCT- ARCHITECTURE**
- ARCT 101. Introduction to Architecture 3 cr. (2+2P)  
This course provides students the tools and vocabulary to analyze, interpret, and discuss the built environment from the social, historical, perceptual, and technical determinants. Lectures and assignments will introduce students to the elements of current and likely future directions of architecture from experiential, aesthetic, structural, functional, and historical perspectives. The course will provide students with knowledge about the people and processes involved with professional issues of architectural practice. Students will be required to participate in individual and group presentations and projects, as well as compile a portfolio of their work completed in the course.
- ARCT 104. Introduction to Architectural Drawing 4 cr. (2+4P)  
This course is designed as an introduction to architectural drawing and design for students without prior experience in the fine arts. Students are guided through a series of spatial and analytical exercises that focus attention on not only how architects draw, but also the reasoning and processes embedded within the technique. Direct linkages with the Introduction to Architecture course provide exposure to a wide range of interconnected architectural concepts.
- ARCT 111. Architectural History I 3 cr. (2+2P)  
A survey of the development of world architecture from the ancient era to the advent of the enlightenment in Europe. Major emphasis is on the visual, intellectual, cultural and technological aspects of the ancient and indigenous cultures/classical /pre-modern world. Community Colleges only.
- ARCT 115. General Construction Safety 3 cr. (2+2P)  
Overview of general construction safety related to building construction, highway and road construction, and surveying field work.
- ARCT 151. Construction Principles and Print Reading 4 cr. (3+2P)  
Introduction to construction materials, methods, and basic cost estimating and print reading applicable in today's residential, commercial, and public works industry. Instruction by print reading and interpretation, field trips, and actual job-site visits and progress evaluation. Restricted to: Community College campuses only. Crosslisted with: DRFT 151.



- ARCT 170. Computers in Architecture** 3 cr. (2+2P)  
Explore various software and photography techniques widely used in the architectural field. In addition to using industry standard CAD program as primary 2-d drafting tool, focus is to produce digital architectural models and renderings, presentation boards, and animations. Digital images will be produced and enhanced through basic techniques in photography and integration of various software. Both individual and group work will be required.
- ARCT 204. Architectural Design Studio I** 5 cr. (1+8P)  
Enhancement of general graphic communication skills. Strengthens fundamental design by addressing issues of conceptual design, structural order, and application of three-dimensional processes to architectural graphic expression. 2-D and 3-D design and presentation techniques. Studio/critique-based with considerable number of outside assignment/hours required. Prerequisite: ARCT 104.
- ARCT 210. Architectural Delineation I** 3 cr. (2+2P)  
Introduction to visual literacy, architectural graphic communication, & basic analytical skills. Architectural concepts primarily explored through the application of technical drawing, descriptive geometry, & material manipulation; primarily black & white media.
- ARCT 211. Architectural History II** 3 cr. (2+2P)  
A survey of the development of world architecture from the enlightenment in Europe to the present. Community Colleges only.
- ARCT 250. Construction Documents** 3 cr. (2+2P)  
Basic use of CAD to produce residential, commercial, and industrial architectural working drawings, including floor plans, sections, foundation plans and details, exterior and interior elevations, framing plans, and site plans. Use and application of building and zoning codes, typical construction methods and materials, and accessibility requirements. Basic 3-D modeling, AIA layering standards, sheet layout, and construction document coordination. Pre/Corequisite(s): DRFT 109. Restricted to: Community Colleges only.
- ARCT 254. Architectural Design Studio II** 5 cr. (1+8P)  
Advanced graphic communication and 3-D physical model representation. Focus on site analysis, programming and fundamental design issues of context, environment, program development and space planning, 2-D and 3-D design and presentation techniques. Studio/critique-based with considerable number of outside assignments/hours requires. Prerequisite: ARCT 204.
- ARCT 255. Special Problems** 1-6 cr.  
Instructor-approved projects in architecture or related topics specific to student's areas of interest and relevant to pre-architecture curriculum. Prerequisite: consent of instructor. May be repeated for a maximum of 12 credits.
- ARCT 260. Architectural Delineation** 3 cr. (2+2P)  
Continuation of ARCT 210 with an emphasis in color media. Prerequisites: ARCT 210.
- ARCT 288. Portfolio Development** 4 cr. (2+4P)  
Production of a portfolio consisting of student produced work related to individualized projects based on degree option. Completed portfolio to include, working and presentation drawings, material take-offs, cost estimates, specifications, 3D models, renderings, and technical animation files as assigned by the instructor. Job search and resume preparation activities will also be required.
- ARCT 290. Special Topics** 1-6 cr.  
Topics subtitled in the Schedule of Classes. Prerequisite: consent of instructor. May be repeated for a maximum of 12 credits.
- ARCT 291. Cooperative Experience** 1-6 cr.  
Supervised cooperative work program. Student employed in approved occupation; supervised and evaluated by employer and instructor. Student meets weekly with instructor. Prerequisite: consent of instructor. Graded S/U.
- ARCT 295. Professional Development and Leadership-AIAS** 1-3 cr.  
As members and/or officers of student professional organizations, architecture students gain experience through undertaking leadership roles, participating in team building, and becoming involved in service to the community. Students can also gain actual work experience involving skills related to their field of study. Graded S/U.
- ART- ART**
- ART 101G. Orientation in Art** 3 cr. (2+3P)  
A multicultural examination of the principles and philosophies of the visual arts and the ideas expressed through them.
- ART 110G. Visual Concepts** 3 cr. (2+4P)  
Introduction to the philosophies of art, visual thinking, and principles of visual organization. Designed to give students a broad view of aesthetic traditions, ideologies, and techniques basic to the creation and evaluation of art. Principles and concepts are taught in a common lecture and applied in parallel small studio sections. For non-art majors only.
- ART 150. Drawing I** 3 cr. (2+4P)  
Introduction to the skill of seeing through exercises that emphasize careful drawing from the still life and utilize a range of drawing materials and techniques. Outside assignments required.
- ART 151. Drawing II** 3 cr. (2+4P)  
Continued emphasis on drawing from observation by focusing on still life and other subject matter. Covers a range of materials, techniques and concepts. Outside assignments. Prerequisite(s): ART 150. Restricted to Restrict to Art and CMI majors majors.
- ART 155. 2-D Fundamentals** 3 cr.  
Introduction to two-dimensional space emphasizing visual elements and design principles as they apply to composition. A variety of materials are used in the studio projects and sketchbook exercises. Developing knowledge in vocabulary, color theory and skill in translating ideas into design are encouraged.
- ART 156. 3-D Fundamentals** 3 cr.  
Compositional organization of three-dimensional space explored through a broad range of visual exercises. Resourceful and creative problem solving encouraged.
- ART 157. Color Theory** 3 cr. (2+4P)  
Various color theories as they relate to compositional organization. Required for art education majors.
- ART 160. Computer-Based Illustration** 3 cr. (2+4P)  
Introduction to the principles of computerized drawing and design. Using the basic concepts, drawing tools, and vocabulary of Adobe Illustrator. Prerequisite: ART 150, ART 155, or consent of instructor.
- ART 161. Digital Imaging I** 3 cr. (2+4P)  
Work with basic concepts, tools, and vocabulary of Adobe Photoshop to create effective visual communication. Includes selection tools, cloning, copying and pasting, color correction, image restoration, filters, and special effects. Community Colleges only.
- ART 163. Digital Graphics** 3 cr. (2+4P)  
Importing and exporting images and text into various desktop publishing formats. Exploring imaging, drawing, and page layout applications. Introduction to typography. Prerequisite: ART 161.
- ART 165. Web Page Design** 3 cr. (2+4P)  
Introduction to the creation of well-designed and organized Web sites. Emphasis on building creative but functional user-friendly sites. Introduction to HTML, Flash, Java Script, and Web-authoring software. Prerequisite: ART 161. Community Colleges only. Same as DEPT 165.
- ART 250. Drawing III** 3 cr. (2+4P)  
Introduction to intensive drawing from the figure with a focus on observation. Outside assignments may be required. Prerequisite: ART 151 (for art majors) or ART 155.
- ART 252. Aspects of Drawing** 2-3 cr.  
Continued work in drawing with emphasis on personal creative endeavor. Prerequisites: ART 150, ART 151, and ART 250. Community Colleges only.
- ART 255. Introduction to Graphic Design and Digital Media** 3 cr. (2+4P)  
Introduction to the principles of visual communication and digital media, with an emphasis on the creation of graphic form and style. Prerequisite(s): ART 155.
- ART 256. Introduction to Letter Forms and Typographic Design** 3 cr. (2+4P)  
Introduction to letter forms, typography and identify marks. Projects produced using conventional and digital graphic designer tools. Prerequisite(s): ART 155.
- ART 260. Introduction to Painting** 3 cr. (2+4P)  
Introduction to basic skills of painting through various exercises that emphasize working from observation.
- ART 261. Painting Methods, Techniques and Applications** 3 cr. (2+4P)  
The investigation of formal aspects of painting, an examination of painting techniques, and an exploration of various methodologies regarding form and content as applied to critical thinking skills through medium of paint. Prerequisite(s): ART 150, ART 260.
- ART 262. Aspects of Painting** 2-3 cr.  
Varied painting media: continued development of painting skills. Prerequisites: ART 150, ART 155 (for art majors), ART 260, or consent of instructor.

- ART 265. Sculpture I, A Introduction to Sculpture: Process and Possibility 3 cr. (2+4P)  
A series of interpretive assignments incorporating such processes as mold making, welding and woodworking. Creative problem solving and visual thinking skills emphasized. Examples of contemporary sculpture regularly presented and discussed.
- ART 266. Go Figure: The Body in Contemporary Art 3 cr. (2+4P)  
Cultivation of individual direction through constant creative action. Emphasis on self-styled assignments. Rotating themes pertinent to contemporary sculpture supplement aesthetic and conceptual awareness. Restricted to: Main campus only.
- ART 267. Art Portfolio Preparation 3 cr. (2+4P)  
Refine general marketing strategies, personal portfolio and resumes. Define, target, and penetrate personal target markets. Students develop individual promotional packages. Prerequisites: ART 163, ART 269, and ART 272, or consent of instructor.
- ART 268. Desktop Publishing II 3 cr. (2+4P)  
Advanced principles of typography and page layout. Combining multiple images and text from different applications; study of pre-press preparation and image readiness for separations and for the service bureaus. Prerequisite: ART 163.
- ART 269. Advanced Computer-Based Illustration 3 cr. (2+4P)  
Design custom graphics and create special effects with filtering, special effects on type, graphing, technical illustrations, and three-dimensional drawing using Adobe Illustrator. Prerequisites: ART 157, ART 160, and ART 161, or consent of instructor.
- ART 270. Introduction to Photography 3 cr. (2+4P)  
Introduction to photography with digital cameras. Basic camera operation, picture composition, image processing and digital workflow. Image culture and the role of the still, lens-made image in contemporary society. Students must come equipped with an appropriate laptop computer, software and digital camera (consult with instructor).
- ART 271. Introduction to Film and Darkroom 3 cr. (2+4P)  
Introduction to silver based photographic materials, film development, enlargement printing and darkroom work. Students will work with a range of cameras including: medium format, toy and pinhole. Emphasis on understanding the syntax of silver halide photographic materials. Development of conceptual vocabulary and the creation of images with thematic unity. May be repeated for a maximum of 6 credits. Prerequisite(s): ART 270.
- ART 272. Digital Imaging II 3 cr. (2+4P)  
Refining of individual creative styles and technical skills using Adobe Photoshop. Emphasis on input and output predictability, and working with large file productions. Community colleges only. Prerequisite(s): ART 161. Restricted to: Community Colleges only.
- ART 274. Digital Capture and Output 3-9 cr.  
Digital workflow, scanning, image processing software, digital printing, color management. Advanced digital printing skills. Emphasis on understanding the syntax of digital photographic processes. Development of conceptual vocabulary and the creation of images with thematic unity. Consent of instructor required. Restricted to ART majors.
- ART 275. Ceramics I, A 3 cr. (2+4P)  
Introduction to clay arts. Techniques of handbuilding, wheel throwing, and glazing.
- ART 276. Ceramics I, B 3 cr. (2+4P)  
Beginning ceramics, complementary half to ART 275. (Art 275 and ART 276 do not need to be taken consecutively.) Basic building techniques of coil, slab, and throwing are introduced. High-fire and low-fire clays are used.
- ART 280. Printmaking I 3 cr. (2+4P)  
Varied media in printmaking and compositional problems.
- ART 281. Printmaking II 3 cr. (2+4P)  
Printmaking materials and techniques, with emphasis in intaglio and relief procedures. Prerequisites: ART 150, Art 156 (for art majors) and 280. Corequisite: Art 150.
- ART 285. Metals and Jewelry I 3 cr. (2+4P)  
Fundamental processes and design necessary for metal fabrication of jewelry, functional and non-functional objects.
- ART 286. Stained Glass 3 cr. (2+4P)  
Instruction in the fundamental fabrication and design techniques for stained glass. Introduction to visual decision making skills, historical, and critical issues of the medium. Community Colleges only.
- ART 294. Special Topics in Studio 1-3 cr.  
Specific subjects and credits to be announced in the Schedule of Classes. No more than 9 credits toward a degree. Prerequisite: consent of instructor.
- ART 295G. Introduction to Art History I 3 cr.  
An introduction to the principles of art history within a chronological framework of the art of the Western World. All media will be discussed. From prehistoric times to the fourteenth century.
- ART 296G. Introduction to Art History II 3 cr.  
Continuation of ART 295. Art of the Western world from Late Gothic to the Rococo.
- ART 297. Introduction to Art History III 3 cr.  
Continuation of ART 296. Art of the Western world from the Enlightenment to the present.
- ART 300. Special Topics in Art History 3 cr.  
Specific subjects to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits. Prerequisite(s): ART 295G, ART 296G, and ART 297.
- ART 302. The Classical Style in the Western Tradition 3 cr.  
Analysis of the emergence of Greco-Roman style in the Ancient world and its interpretation and reception in the Western European art tradition up to the contemporary period; taught with ART 504.
- ART 305. Medieval Art 3 cr.  
History of painting, stained glass, sculpture, architecture and manuscript illumination in Europe from the Early Christian period to the end of the Gothic period; taught with ART 505.
- ART 306. Medieval Manuscript Illumination 3 cr.  
History of manuscript production and illumination in Western Europe from the Early Christian period to the middle of the 16th century; taught with ART 506.
- ART 310. Native American Art 3 cr.  
Cross-cultural introduction to art of the prehistoric and historic native people of the North, Central, and South Americas. Considers the artistic expression and the function of art in diverse cultural and environmental contexts. Prerequisite(s): ART 295G.
- ART 311. Art of China 3 cr.  
Survey of the art of China from the Pre-historic period to modern day; taught with ART 511. Prerequisite(s): ART 295G and ART 296G, or HIST 211G and HIST 212G.
- ART 320. Art and Architecture in Pre-Columbian Meso-America 3 cr.  
Analysis of the art and culture of the Mesoamerican peoples before the arrival of Columbus in the New World. Includes an in-depth formal and historical analysis of architecture, sculpture, painting, pottery, and metal works of Mixtec, Toltec, Aztec, Maya, and other cultures and civilizations. Prerequisite(s): ART 295G.
- ART 321. Pre-Columbian Art and Architecture of the Andes 3 cr.  
Examines the arts and history of pre-Columbian Andean cultures in a cultural context. Analysis of architecture, sculpture, pottery, jewelry, textiles, and feather work. Prerequisite(s): ART 295G.
- ART 323. Italian Renaissance Art 3 cr.  
History of painting, sculpture and architecture in Italy from the 14th century to the end of the 16th century; taught with ART 523.
- ART 325. Northern Renaissance Art 3 cr.  
History of painting, manuscript illumination and graphics in Northern Europe from the late 14th century to the mid-16th century; taught with ART 525.
- ART 328. Baroque Art and Architecture in Northern Europe 3 cr.  
Study of architecture, painting sculpture in Flanders, Holland, France, England, and Germany as indigenous developments and as reflections of the Italian Baroque. Prerequisite(s): ART 295G.
- ART 329. Survey of Western Architecture 3 cr.  
Survey of history of Western architecture from prehistoric time to the present. Prerequisite(s): ART 295G, ART 296G, and ART 297.
- ART 330. Modern Architecture 3 cr.  
Prerequisite(s): ART 295G, ART 296G, and ART 297.
- ART 333. Baroque Art and Architecture in Italy, Spain, and Hispanic Latin America 3 cr.  
Concentration of Italian Baroque architecture, painting, and sculpture; and on Spanish painting, sculpture, and architecture, as well as the art and architecture of Spanish vice-royalties of the Americas. Prerequisite(s): ART 295G and ART 296G.
- ART 336. The African American in Art 3 cr.  
Traces the inclusion of African-American subjects and procedures of art in the U.S. from the nation's beginnings to the present. Slavery, civil rights, and racial pride are discussed as academic and avant-garde traditions in African-American art. Consent of instructor required. Prerequisite(s): ART 295G, ART 296G, and ART 297.

- ART 337. American Art to 1900 3 cr.  
History of painting, sculpture, architecture, and other arts in the United States from the colonial period to 1900. Prerequisite(s): ART 295G, ART 296G, and ART 297.
- ART 338. Late Eighteenth- and Nineteenth-Century European Art 3 cr.  
History of painting, sculpture, architecture, and other arts created in Europe from 1789 to 1900.
- ART 339. History of Photography 3 cr.  
Course studies history, theory and use of photographic practices in art, especially from formal introduction of the process in 1839 to the present. Prerequisite(s): ART 295G, ART 296G, and ART 297.
- ART 342. Twentieth-Century Art I, 1900-1945 3 cr.  
History of painting, sculpture, and other arts in Europe, the United States, and elsewhere from 1900 to 1945.
- ART 343. Twentieth-Century Art II, 1945-Present 3 cr.  
History of painting, sculpture, and other arts in Europe, the United States, and elsewhere from 1945 to the present.
- ART 350. Drawing IV 3 cr.  
Drawing from observation of the figure. Outside assignments may be required. Prerequisite(s): ART 150, ART 151, ART 155 (for art majors), ART 250 or consent of instructor.
- ART 354. History of Graphic Design 3 cr.  
History of graphic language and evolution of graphic communication.
- ART 355. Graphic Design and Digital Production 3 cr. (2+4P)  
Introduction to the design and graphic production of projects, using conventional and digital techniques. Prerequisite(s): Grades of B or higher in both ART 255 and ART 256.
- ART 356. Graphic Design and Multicolor Digital Production 3 cr. (2+4P)  
Design and production of multicolor projects using conventional and digital techniques. Prerequisite(s): Grades of B or higher in each of ART 255 and ART 256; prior passage of ART 355 with a grade of C or higher.
- ART 357. Digital Graphic Design and Illustration 3 cr. (2+4P)  
Graphic illustrations and icons using vector and bitmap software programs. Emphasis on editorial, information and cultural applications. May be repeated for a maximum of 6 credits. Prerequisite(s): ART 150, ART 255, ART 256.
- ART 359. Digital Image-Making for Graphic Designers 3 cr.  
Creation of graphic icons, stylizations and archetypes. Projects produced using vector-based computer programs. Some computer experience required. Prerequisite(s): ART 150, ART 255, ART 256, and CMT 145.
- ART 360. Innovation and Creativity in Painting 3 cr. (2+4P)  
Innovative and creative solutions to painting within a contemporary context. Prerequisite(s): ART 261.
- ART 361. Painting IIIB 3 cr. (2+4P)  
Media, materials and technical problems of contemporary painting continued. May be repeated for a maximum of 6 credits. Prerequisite(s): ART 295G and ART 360.
- ART 363. Images in Sequence and the Photography Book 3 cr.  
Intermediate to advanced level course for students in junior year. Course addresses project ideation, thematic development and methods for dissemination of visual content. Each student will propose and produce an independent project culminating in publication of a photography book produced through an on-demand book publishing service. Topics addressed will include: narrative content in images; image sequencing; conceptual, thematic and stylistic unity; and choice of image distribution format (gallery, book, web). Regular lectures, readings and critiques will support course objectives. Offered Fall semesters. Prerequisite(s): ART 270, ART 274, ART 277.
- ART 365. Sculpture II A - Emerging Sensibility 3 cr. (2+4P)  
Cultivation of individual direction through constant creative action. Emphasis on self-styled assignments. Rotating themes pertinent to contemporary sculpture supplement aesthetic and conceptual awareness.
- ART 366. Sculpture II, B Emerging Sensibility 3 cr. (2+4P)  
Additional study of topics covered in ART 365. Prerequisite: ART 265, 266, 365.
- ART 367. Large Format Photo and Advanced Printing 3 cr.  
Introduction to the 4x5 view camera, advanced printing techniques, zone system and hybrid darkroom/digital practice. Emphasis on development of advanced skills in technical process, ideation, content generation and critical inquiry. Prerequisite(s): ART 270, ART 274, ART 277.
- ART 369. The Constructed Image 3 cr.  
Introduction to digital workflow in photography. Topics include digital camera operation, RAW file processing, scanning, color management and printing. Course will emphasize concepts of ideation and thematic coherence. Prerequisite(s): ART 270, ART 274, and ART 277.
- ART 370. Color Photography. 3 cr.  
Intermediate level studio course that introduces students to color photographic processes and materials. Topics include color positive and negative films; enlargement printing from color negatives; alternative color print materials; Polaroid processes; readings and critiques. Prerequisite: ART 271, or concurrent enrollment, or consent of instructor.
- ART 373. Nonsilver Photographic Processes 3 cr.  
Intermediate to advanced-level studio course exploring creative possibilities of historic photographic processes. Topics include production of large-format contact negatives; pin hole photography; hand applied emulsions and photo printmaking techniques. Readings and critiques. May be taken up to 6 credits. Prerequisite(s): ART 270, ART 271, ART 274.
- ART 374. Ceramic Tile 3 cr. (2+4P)  
Instruction in a variety, of ceramic tile-making techniques with considerable exploration of surface finishing. Assignments focus on tile paintings and murals with an emphasis on content.
- ART 375. Ceramics II 3 cr. (2+4P)  
Instruction in ceramic techniques with an emphasis on conceptual development and study of issues in contemporary ceramics.
- ART 376. Museum/Gallery Research Internship 1-9 cr.  
Research internship in museum or gallery. Requirements determined by instructor in cooperation with supervising museum/gallery professional. For art history credit. Prerequisites: ART156, Art 275 and ART 276. May be repeated for a maximum of 9 credits. Course may not be audited.
- ART 380. Printmaking III 3 cr. (2+4P)  
Materials and techniques, with emphasis in intaglio and relief procedures. Prerequisite: ART 281.
- ART 385. Metals and Jewelry II 3 cr. (2+4P)  
Sophisticated technical and conceptual development are emphasized. Must be repeated for 6 credits.
- ART 387. Exhibition Studies 3 cr.  
Exhibition theory through practice. Gallery operations and management: collecting, conversation, exhibiting, and public responsibility.
- ART 389. Visual Culture of the 1950s 3 cr.  
Focus on major cultural trends and historical events in 1950's America. Offers analysis of art, films, and pop culture phenomena of the period. Prerequisite(s): ART 295G, ART 296G, and ART 297.
- ART 390. Visual Culture of the 1960s 3 cr.  
Focus on major cultural trends and historical events in 1960's America. Offers analysis of art, films, and pop culture phenomena of the period. Prerequisite(s): ART 295G, ART 296G, and ART 297.
- ART 391. Visual Culture of the 1970s 3 cr.  
Focus on major cultural trends and historical events in 1970's America. Offers analysis of art, films, and pop culture phenomena of the period. Prerequisite(s): ART 295G, ART 296G, and ART 297.
- ART 392. Visual Culture of the 1980s 3 cr.  
Focus on major cultural trends and historical events in 1980's America. Offers analysis of art, films, and pop culture phenomena of the period. Prerequisite(s): ART 295G, ART 296G, and ART 297.
- ART 393. History of Collage 3 cr.  
Examines theory and practice of collage, assembly and montage in 2- and 3- dimensional 20th century art. Emphasis on the art of the Schwitters, Picasso, Cornell, Hoch, Ernst, Ryan, Rauschenberg, and Schapiro. Prerequisite(s): ART 295G, ART 296G, and ART 297.
- ART 394. Special Topics in Studio 3 cr.  
Specific subjects and credits to be announced in the Schedule of Classes. No more than 9 credits toward a degree.
- ART 401. Museum Conservation Techniques I 3 cr. (2+3P)  
Examines the philosophy of museum conservation of works of art in all media and in all contexts. Includes discussions of the theory of conservation as well as student laboratory projects involving testing and conservation objects. Enrollment limited to twelve. First of two consecutive courses. Instructor permission required.



- ART 402. Museum Conservation Techniques II 3 cr. (2+3P)  
Examines the philosophy of museum conservation of works of art in all media and in all contexts. Includes discussions of the theory of conservation as well as student laboratory projects involving testing and conservation of objects. Enrollment limited to twelve. Second of two consecutive courses. Prerequisite: ART 401 and consent of instructor.
- ART 403. Preventative Conservation/Collections Care 3 cr.  
Museum conservation of art work.
- ART 444. Art and Life in Renaissance Italy 3 cr.  
Examines how Italian Renaissance textual and visual culture offered Europe new ways of seeing and portraying itself. 1350-1550. Topics include: Florence, Venice, Rome, Leonardo, Michelangelo, titian, humanism, the Medici, and republican and courtly culture. Prerequisite(s): ART 295G. Crosslisted with: HIST 442
- ART 449. Advance Figure Drawing 3 cr. (2+4P)  
Advance figure drawing class with emphasis on developing technical and conceptual skills. Prerequisites: ART 150, 151, 250, and 350.
- ART 450. Drawing Workshop 3 cr.  
Critique class on drawings done outside of class. Emphasis on development of conceptual and technical skills. Prerequisite(s): ART 350.
- ART 451. Time-Based Media 3 cr.  
Advance figure drawing class with emphasis on developing technical and conceptual skills. Prerequisite: ART 350. May be repeated up to 27 credits. Restricted to ART majors.
- ART 454. Design Discourse 3 cr.  
Discussion of issues related to visual communications and graphic design. Research and semester-long studio project supplement readings and discussion. May be repeated for a maximum of 6 credits. Prerequisite(s): ART 356.
- ART 455. Advanced Graphic Design: Conceptual Development and Professional Practice 3 cr. (2+4P)  
Advanced graphic design projects in graphic form, typographic design, and comprehensive layouts, with emphasis on conceptual development and professional practices. May be repeated to a maximum of 6 credits. Prerequisite(s): ART 356.
- ART 456. Advanced Graphic Design: Portfolio Development and Professional Practice 3 cr. (2+4P)  
Advanced graphic design projects with an emphasis on conceptual development, portfolio preparation, and professional practices. Prerequisite: ART 455. May be repeated for a maximum of 12 credits. Restricted to majors.
- ART 457. Advanced Typographic Design and the Computer 3 cr.  
Advanced projects exploring use of typography in visual communication. Electronic and conventional print applications emphasized. May be repeated for a maximum of 6 credits. Prerequisite(s): ART 255 and ART 256.
- ART 458. The New Mexico Studio of Design 3 cr.  
An advanced graphic design studio providing a design service for nonprofit community organizations. Client-based projects produced by students from concept to completion. May be repeated for a maximum of 6 credits. Prerequisite(s): ART 355.
- ART 459. Advanced Digital Illustration 3 cr. (2+4P)  
Illustration course for graphic designers emphasizing the creation of editorial, informational, and cultural illustrations, using vector and bitmap computer programs. Prerequisite: ART 359, or consent of instructor. May be repeated for a maximum of 6 credits.
- ART 460. Painting Workshop 3 cr.  
Media, materials and advanced technical problems of contemporary painters. May be taken up to 6 credits. Prerequisite(s): ART 350 and ART 361.
- ART 461. Painting Workshop II 3 cr. (2+4P)  
Advanced issues in contemporary painting. May be repeated for a maximum of 6 credits. Restricted to majors. Prerequisite(s): ART 460.
- ART 465. Sculpture Workshop 3-6 cr. (2+4P)  
Development of content and personal vision via self-styled projects. Emphasis on critical self-evaluation. Contemporary topics and research presentation furthering the development of a cohesive body of work. Prerequisite: ART 366. May be repeated for a maximum of 12 credits.
- ART 470. Studio Photography 3 cr.  
A critique and reading course in which students pursue independent work. Emphasis placed on portfolio production and professional practice. Consent of instructor required.
- ART 471. Large Format Photography and Lighting 3 cr. (2+4P)  
Introduction to the 4x5 view camera, medium format cameras, Zone system and artificial lighting. Emphasis on refinement of technical process and critical thinking. Prerequisite: ART 271. May be repeated up to 6 credits. Restricted to ART majors.
- ART 473. Photography Workshop 3-6 cr.  
Project based critique seminar for advanced BFA students. Regular critique sessions and readings required. Participation in the annual BFA exhibition for graduating seniors required.
- ART 474. Advanced Ceramic Tile 3 cr. (2+4P)  
Instruction in a variety of ceramic tile-making techniques with considerable exploration of surface finishing. Assignments focus on tile paintings and murals with an emphasis on content. Prerequisite: ART 374. May be repeated for a maximum of 9 credits.
- ART 475. Ceramics Workshop 3-6 cr. (2+4P)  
Continuation of ART 375. Prerequisite: ART 375. May be repeated for 18 credits.
- ART 476. Advanced Museum/Gallery Research Internship 1-9 cr.  
Advanced research internship in museum or gallery. Requirements determined by instructor in cooperation with supervising museum/gallery professional. For art history credit. Prerequisite: ART 376 and consent of instructor. May be repeated for a maximum of 9 credits. Course may not be audited.
- ART 477. Independent Research Problems in Art History 1-9 cr.  
Advanced research on special problems to be conducted under supervision of art history faculty. May be taken up to 12 credits. Consent of instructor required. Prerequisite(s): ART 295G, ART 296G, ART 297 and one 300 level art history course and consent of instructor.
- ART 478. Seminar: Selected Topics in Art History 3 cr.  
Reading, research, and discussion of advanced problems. May be taken up to 12 credits. Consent of instructor required. Prerequisite(s): ART 295G, ART 296G, ART 297 and one 300 level art history course and consent of instructor.
- ART 479. Art Theory, Criticism, and Historiography 3 cr.  
Theories and methodologies in art history and art criticism. Consent of instructor required. Prerequisite(s): ART 295G, ART 296G, ART 297 and one 300 level art history course and consent of instructor.
- ART 480. Printmaking Workshop 3-6 cr.  
Problems in printmaking. May be repeated for a maximum of 15 credits. Prerequisite(s): ART 380.
- ART 485. Metals Workshop 3-6 cr.  
Advanced individual problems. Prerequisite: 6 credits of ART 385. May be repeated for a maximum of 15 credits.
- ART 490. Museum Conservation Internship 3-6 cr.  
The goal of this internship is to provide a student with a practical learning experience in museum collection conservation so that they can relate their experience to what they learn in the classroom about preventive conservation techniques and policies. It will provide the student an opportunity to learn skills and knowledge needed in working with museum collections. Tasks and projects will be assigned by the instructor. Consent of instructor required.
- ART 494. Special Topics in Studio 3 cr.  
Specific subjects and credits to be announced in the Schedule of Classes. No more than 9 credits toward a degree.
- ART 495. Undergraduate Studio Thesis 3 cr.  
Special research and independent study leading to undergraduate thesis exhibition. Prerequisite: consent of instructor. Restricted to majors. Course may not be audited.
- ART 496. Fundamentals of Studio Management 1 cr.  
Advanced studio course designed to introduce students to the fundamentals of studio management. Includes training in proper tools use and maintenance; safety procedures; and practical experience with studio oversight. Concurrent registration in advanced level studio course of the same media area required. Prerequisite: consent of instructor. May be repeated for a maximum of 3 credits. Restricted to majors. Graded S/U.
- ART 497. Readings in Art History 3 cr.  
In-depth study of art historical writing. May be taken up to 12 credits. Consent of instructor required. Prerequisite(s): ART 295G, ART 296G, ART 297 and one 300 level art history course.
- ART 499. Problems in Studio 3-6 cr.  
Individual study in specialized studio areas not covered by other advanced courses. Prerequisite: consent of instructor. May be repeated for a maximum of 12 credits.



**ASTR- ASTRONOMY**

- ASTR 105G. The Planets** 4 cr. (3+2P)  
Comparative study of the planets, moons, comets, and asteroids which comprise the solar system. Emphasis on geological and physical processes which shape the surfaces and atmospheres of the planets. Laboratory exercises include analysis of images returned by spacecraft. Intended for non-science majors, but some basic math required. This lecture/lab course satisfies the New Mexico Common Core Area III: Lab Sciences requirement
- ASTR 110G. Introduction to Astronomy** 4 cr. (3+2P)  
A survey of the universe. Observations, theories, and methods of modern astronomy. Topics include planets, stars and stellar systems, black holes and neutron stars, supernovas and gaseous nebulae, galaxies and quasars, and cosmology. Emphasis on physical principles involving gravity, light and optics (telescopes). Generally non-mathematical. Laboratory involves use of the campus observatory and exercises designed to experimentally illustrate principles of astronomy. This lecture/lab course satisfies the New Mexico Common Core Area III: Lab Sciences requirement.
- ASTR 210. The Search for Extraterrestrial Life** 3 cr.  
Recent discoveries concerning life within the Solar System are discussed and generalized to other star systems. Current space travel and interstellar communication efforts are reviewed.
- ASTR 301V. Revolutionary Ideas in Science** 3 cr.  
Examines fundamental scientific revolutions that have shaped our view of Earth and the universe. Topics range from biology to geology to astronomy and provide the perspective necessary to evaluate scientific issues in current public policy debates. Includes in-class debates. Prerequisite: any general education science course.
- ASTR 305V. The Search for Life in the Universe** 3 cr.  
Use of information from several of the sciences to explore the likelihood that life exists elsewhere in the universe. Subjects include an overview of historical ideas about the possibility of life elsewhere in the universe, the chemistry and biology of life on Earth, recent explorations for life within our solar system, and current search strategies for life in the universe and their scientific basis.
- ASTR 308V. Into the Final Frontier** 3 cr.  
Exploration of space: a brief review of the history of space flight, the Apollo program, joint U.S.-Soviet space missions, and unstaffed exploration of the planets. Emphasis on knowledge gained through these efforts. Includes new space initiatives. Same as HON 308V.
- ASTR 330V. Planetary Exploration** 3 cr.  
A current planetary exploration mission is studied within the context of the solar system. The data acquired and principles involved in executing the mission, as well as political and economic implications of planetary exploration, are examined. Same as HON 330V. Main campus only
- ASTR 400. Undergraduate Research** 1-3 cr.  
Supervised individual study or research. Prerequisite: consent of instructor. May be repeated for a maximum of 6 credits.
- ASTR 401. Topics in Modern Astrophysics** 3 cr.  
This course is designed for students interested in astrophysics who have some background in math and physics and want to learn about basic astrophysics and interesting current topics. The course will cover basic astrophysical concepts such as orbital mechanics, light, and radiative processes and transfer. These concepts will be applied to the discussion of exciting modern topics involving planets, exoplanets, stars, galaxies, and/or cosmology, with topical emphasis determined by the instructor. Prerequisite(s): MATH 192G and (PHYS 213 or PHYS 215G).
- ASTR 402. Introduction to Astronomical Observations and Techniques** 3 cr.  
Designed for students interested in astrophysics who have some background in math and astronomy and want to learn about techniques for obtaining and analyzing astronomical data. This course will review the properties of light and discuss the process of experimental design. The course will describe basic observational tools such as telescopes and detectors. It will discuss how data is obtained, and how features of the detector and the Earth's atmosphere can be corrected for. Some topics in basic astronomical data analysis will be discussed, with topical emphasis determined by the instructor. Some simple data analysis projects will be assigned. Prerequisite(s): MATH 191G and (PHYS 214 or PHYS 216G) and (ASTR 105, ASTR 110, or ASTR 401).
- ASTR 405. Astronomy and Astrophysics I** 3 cr.  
Application of physical principles to problems in modern astronomy. Emphasis on radiation mechanisms and radiation transfer in astronomical systems. Prerequisite: consent of instructor. No S/U grading. Same as ASTR 505 with less advanced work.
- ASTR 406. Astronomy and Astrophysics II** 3 cr.  
Sequel to ASTR 405 with emphasis on basic dynamics and (magneto) hydrodynamics. Prerequisite: consent of instructor. No S/U grading. Same as ASTR 506 with less advanced work.
- ASTR 435. Observational Techniques I** 3 cr.  
Up-to-date introduction to modern observational astronomy. Includes computers, data analysis, optical telescopes, optical and infrared photometry, image processing, and detection. Prerequisite: consent of instructor. No S/U grading. Same as ASTR 535 with less advanced work.
- ASTR 461. Astronomy for Teachers** 3 cr.  
Illustration and presentation of concepts of astronomy in different subject areas to broaden teacher preparation for science education in public schools.

**AUTO- AUTOMOTIVE TECHNOLOGY**

- AUTO 100. General Mechanics** 3 cr. (1+4P)  
Use of hand tools; shop machinery; measuring devices, fasteners, couplings; application of fuels; lubricants; bearings; V-belt, gear and chain drives. Shop safety.
- AUTO 101. Introduction to Automotive Technology** 1 cr.  
An overview and history of modern automotive technology. Career specializations including career options and description of career fields. Related math, communication skills, and DC electronics.
- AUTO 102. Electrical Measuring Instruments** 2 cr. (1+2P)  
Selection, operation, and care of electrical measuring instruments.
- AUTO 103. Auto Mechanics Fundamentals** 4 cr. (2+4P)  
Theory and operation of all areas of auto mechanics. Basic repair and maintenance operations.
- AUTO 104. Introduction to Auto Body Repair** 4 cr. (2+4P)  
Basics of automotive body repair, including safety, preparation of surfaces for painting, metal straightening, brazing, heat shrinking, use of plastic body fillers, and refinishing of repaired areas.
- AUTO 105. Welding** 4 cr. (2+4P)  
Set-up and adjustment of oxyacetylene and arc welding equipment, identification of metals and rod application. Skill development in laying weld beads and different weld positions.
- AUTO 107. Automotive Reference/Schematic Reading** 2 cr. (1+2P)  
Reading, understanding, and use of automotive references/schematics.
- AUTO 110. Basic Electricity/Electronics** 5 cr. (3+4P)  
Same as DEET 110.
- AUTO 111. Automotive Mechanics Basics** 4 cr.  
Basic maintenance procedures of the major components of the automobile using service repair manuals, hand and power tools, precision measurement equipment, fasteners and chemicals. Restricted to: Community Colleges only.
- AUTO 112. Basic Gasoline Engines** 5 cr. (2+6P)  
Principles of gasoline engine operation. Identification, design, function of engine components; engine disassembly and reassembly; trouble shooting, and rebuilding heads.
- AUTO 113. Automotive Electricity and Electronics PT I** 4 cr.  
Topics include mastery of DC electricity, use of digital multimeters, troubleshooting electrical problems in starting, charging and accessory systems. Prerequisite(s): AUTO 111. Restricted to: Community Colleges only.
- AUTO 114. Automotive Electricity and Electronics PT II** 4 cr.  
Advanced AC and DC automotive electronic circuits. Troubleshooting electronically controlled components including supplemental restraint systems and convenience accessories. Prerequisite(s): AUTO 111. Restricted to: Community Colleges only.
- AUTO 115. Automotive Engine Repair** 5 cr.  
Principles of gasoline engine operation. Identification of engine parts, operation, and function. Disassembly and reassembly. Engine problem diagnoses (cooling system, lubrication system, engine noises). Prerequisite(s): AUTO 111. Restricted to: Community Colleges only.
- AUTO 117. Electronic Analysis and Tune-Up of Gasoline Engines** 5 cr. (2+6P)  
Theory and operation of ignition and emission control systems and fuel system. Use of troubleshooting equipment and diagnostic equipment. Prerequisite: OEAT 120 or consent of instructor.
- AUTO 118. Technical Math for Mechanics** 3 cr. (2+3P)  
Mathematical applications for the automotive trade.
- AUTO 119. Manual Transmission/Clutch** 5 cr. (2+6P)  
Manual transmission, transfer cases, and clutch operating principles. Students will diagnose problems, remove and replace, disassemble, repair, and assemble units.

- AUTO 120. Electrical Systems** 4 cr. (2+4P)  
Troubleshooting and repair of starters, alternators, and associated circuits. Reading electrical diagrams, diagnosis and repair of electrical accessories. Prerequisite: consent of instructor.
- AUTO 121. Differentials/Drivelines** 4 cr. (2+4P)  
Differential, driveline, drive axles, CV joint operating principles. Students will diagnose problems, remove and replace, disassemble, repair, and assemble units.
- AUTO 122. Automotive Brakes** 4 cr.  
Focus is on theory, diagnosis, and service of drum, disc, and anti-lock braking systems, brake component machining, hydraulic component reconditioning, friction and hardware replacement. Prerequisite(s): AUTO 111. Restricted to: Community Colleges only.
- AUTO 124. Automotive Heating and Air Conditioning** 4 cr.  
R12 and R134A air conditioning systems maintenance diagnosis and repair. R12 to R134A conversion procedures. Troubleshooting automatic temperature controls and leak detection. Prerequisite(s): AUTO 111. Restricted to: Community Colleges only.
- AUTO 125. Brakes** 5 cr. (2+6P)  
Theory of operation, diagnosis, repair, and maintenance of disc and drum brakes; safety and use of special tools.
- AUTO 126. Suspension, Steering, and Alignment** 5 cr. (2+6P)  
Types of steering systems, suspension maintenance and repair, four-wheel alignment procedures.
- AUTO 127. Basic Automatic Transmission** 4 cr. (2+4P)  
Theory and operation of the automatic transmission; maintenance, troubleshooting, diagnosis, and repair of components.
- AUTO 128. Advanced Automatic Transmission** 4 cr. (2+4P)  
Overhaul procedures and component repair of automatic transmission and transaxles.
- AUTO 129. Automotive Steering and Suspension** 4 cr.  
Diagnosis/service of suspension components including shocks, springs, ball joints, manual and power steering systems and four wheel alignment are some areas covered. Prerequisite(s): AUTO 111. Restricted to: Community Colleges only.
- AUTO 130. Introduction to Transportation Industry** 3 cr.  
State and national traffic statutes that relate to the trucking industry. A Commercial Driver's License Learner's Permit will be obtained through successful completion of the course. Prerequisites: Must be 18 years of age, have a current driver's license and consent of instructor.
- AUTO 131. Class A CDL** 6 cr. (3+6P)  
Instruction in how to perform proper pre-trip inspection; hands-on training with a tractor-trailer unit on the backing range and street driving to develop skills necessary to pass Class A DCL exam. Prerequisites: Class A CDL restricted license (permit) and either restriction of D.O.T. government medical card, and consent of instructor.
- AUTO 132. Automotive Air-Conditioning and Heating Systems** 4 cr. (2+4P)  
Theory and operation, reading schematic diagrams, troubleshooting, repair, and replacement operations performed.
- AUTO 137. Fuel Systems and Emission Controls** 4 cr. (2+4P)  
Covers theory and operation of fuel system and emission control. Troubleshooting, vacuum diagrams, overhaul, repair and adjustment of carburetion and fuel injection. Prerequisites: AUTO 117 or consent of instructor.
- AUTO 139. Automotive Computer Controls** 4 cr. (2+4P)  
Same as OEPM 139.
- AUTO 140. Principles of Automotive Computer Controls** 2 cr.  
Theory and operation of common sensors and control systems. Use of proper diagnostic and service procedures.
- AUTO 141. Principles of Automotive Fuel Injection** 2 cr.  
Theory and operation of the most commonly used fuel injection systems. Proper diagnostic and service procedures. Prerequisite: consent of instructor.
- AUTO 142. Automotive Scope Analysis** 4 cr. (2+4P)  
Troubleshooting and complete analysis of the automobile using diagnostic scope equipment. Prerequisite: AUTO 117 or consent of instructor.
- AUTO 145. Shop Management** 3 cr.  
Covers principles of shop safety, regulations, layout, and operation management.
- AUTO 151. Auto Parts Counter Techniques** 3 cr. (2+2P)  
Overview of auto parts sales and warehousing techniques, including the use of catalogues, microfiche, and computers.
- AUTO 155. Bio-Diesel Fuels** 5 cr. (2+6P)  
Covers theory and operation of Bio-Diesel fuel powered vehicles. Blends of bio-diesel and conventional hydrocarbon-based diesel products most commonly distributed for use in the retail diesel fuel marketplace will be discussed. Production, installation, services, and repair will be discussed in detail. Prerequisite(s): AUTO 107, AUTO 112, and AUTO 139. Pre/Corequisite(s): AUTO 117 and AUTO 119. Restricted to: Community colleges.
- AUTO 160. Hybrid Electric Vehicles** 4 cr. (2+4P)  
Covers theory and operation of electrically powered vehicles. Troubleshooting, reading and interpretation of electrical diagrams will be discussed in full detail. Repair and operation procedures will also be covered. Prerequisite(s): AUTO 107, AUTO 112, and AUTO 139. Pre/Corequisite(s): AUTO 117 & AUTO 119. Restricted to: Community colleges.
- AUTO 161. Non-Structural Repair** 4 cr. (2+4P)  
This basic auto body course is designed to develop the students understanding of general shop safety using hand tools, pneumatic tools and power tools. This course will also cover straightening fundamentals, plastic and composite repair, panel replacement, and adjustments. Prerequisite(s): AUTO 190.
- AUTO 162. Advanced Non-Structural Repair I** 4 cr. (2+4P)  
This course will involve the students in all phases of minor non-structural collision damage repairs. It will encompass sheet metal repair, advanced panel replacement and alignment. Prerequisite(s): AUTO 161.
- AUTO 163. Advanced Non-Structural Repair II** 4 cr. (2+4P)  
This course is a continuation of AUTO 162 with emphasis in all phases of minor non-structural damage repair. The student will be instructed in sheet metal repair and panel alignment as well as the R&I of automotive glass and related components. Prerequisite(s): AUTO 162.
- AUTO 164. Automotive Industry Collision Repair I** 4 cr. (2+4P)  
This advanced course is a continuation of AUTO 161, 162, and 163. This course will incorporate all areas of major non-structural collision damage repair. Through practical application the student will learn how to effectively repair all heavy collision damage using current I-CAR repair standards and procedures. Prerequisite(s): AUTO 163.
- AUTO 165. Automotive Industry Collision Repair II** 4 cr. (2+4P)  
This advanced course is a continuation of AUTO 164 with emphasis on time efficiency. This course will involve the student in all areas of major collision damage repair. The student will be exposed to all applicable I-CAR industry procedures and standards involved in sheet metal and composite panel repair. Prerequisite(s): AUTO 164.
- AUTO 172. Introduction to Automotive Refinishing** 4 cr. (2+4P)  
This course is designed to incorporate all aspects of surface preparation, paint safety, refinishing materials, and refinishing fundamentals. Students will receive instructions for the application of acrylic enamel and base coat/clear coat refinishing systems.
- AUTO 174. Intermediate Automotive Refinishing** 4 cr. (2+4P)  
This course encompasses all areas of surface preparation, damage repair and refinishing procedures that are necessary for achieving a proper spot repair. Students will also be exposed to safe work habits in the refinishing area and correct automotive detailing procedures. Prerequisite(s): AUTO 172.
- AUTO 176. Automotive Color Adjustment & Blending** 4 cr. (2+4P)  
This course will help develop the skills needed to match any type of paint. It will expose the student to color theory, color evaluation, color matching, and other color adjustment factors. The student will be instructed in multiple panel paint blending techniques as well. Prerequisite(s): AUTO 174.
- AUTO 178. Automotive Overall Refinishing** 4 cr. (2+4P)  
This course encompasses all areas of automotive refinishing. This advanced course is a continuation of AUTO 176 with emphasis in achieving industry refinishing times and standards consistent with that of I-CAR. The student will be exposed to surface preparation and refinishing techniques involved with overall coat/clear coat refinishing system. Prerequisite(s): AUTO 176.
- AUTO 181. Frame and Structural Repair** 4 cr. (2+4P)  
This course will involve the student in all areas of frame and structural damage repairs. Through theory and practical application, the student will learn how to diagnose and repair various types of damage include: mash, twist, sag, and side sway. This course will expose the students to safe work habits while using measuring and straightening equipment. Prerequisite(s): AUTO 165.

- AUTO 182. Structural Panel Replacement** 4 cr. (2+4P)  
This course is a continuation of OEAT 181 with infancies in structural panel replacement. The student will be exposed to frame and unibody measuring equipment and their proper use in sectioning procedures. Through theory and practical application the student will learn how to ID structural components, properly separate spot welds, position and weld new body panels in place. Prerequisite(s): AUTO 181.
- AUTO 190. Sheet Metal Welding** 3 cr. (2+2P)  
This course is designed to introduce students to MIG welding procedures, set up and terminology used in sheet metal welding. The students will be exposed to all areas of MIG, oxy acetylene, and plasma torch industry safety. This course will provide the students with the basic knowledge and hands on experience to successfully demonstrate proper sheet metal welds in a variety of joints and welding positions.
- AUTO 201. Engine Performance I** 4 cr.  
Theory, function, service and analysis of engine related subsystems including ignition, fuel, starting, and charging systems. Emphasis is placed on diagnosis and operation of electronic engine control management systems. Prerequisite(s): AUTO 111. Restricted to: Community Colleges only.
- AUTO 203. Engine Performance II** 4 cr.  
Study of engine management systems and emission control systems, their function and relationship to vehicle performance and air pollution. Emphasis is placed on the analysis and repair of non-compliant vehicles. Prerequisite(s): AUTO 111. Restricted to: Community Colleges only.
- AUTO 204. Engine Performance III** 4 cr.  
Study of advanced level diagnostic test procedures and the equipment used to analyze OBD-II emission and drivability concerns. Use of Digital Storage Oscilloscopes, current ramping, Scan Tool analysis and 4 and 5 gas analyzers is mastered. Hybrid vehicles and the latest engine control systems are introduced. Prerequisite(s): AUTO 111. Restricted to: Community Colleges only.
- AUTO 205. Manual Drive Train and Axles** 4 cr.  
Operation, diagnosis, maintenance, repair or replacement of manual transmissions, clutch assemblies, differentials, drivelines, axles, and manual transaxles. Prerequisite(s): AUTO 111. Restricted to: Community Colleges only.
- AUTO 206. Automatic Transmissions** 5 cr.  
Operation, diagnosis, maintenance, and repair of automatic transmissions including rear wheel drive, front wheel drive, and electronically controlled transmissions and transaxles. Prerequisite(s): AUTO 111. Restricted to: Community Colleges only.
- AUTO 207. Power Train Removal and Replacement** 4 cr.  
Course reviews the removal and installation of major automotive components including the engine assembly, transmission assembly, differential and four wheel drive units. Prerequisite(s): AUTO 111. Restricted to: Community Colleges only.
- AUTO 209. Hybrid Vehicle Service Techniques** 4 cr.  
Designed for experienced automotive technicians, this course will cover safety procedures, design, operational overview and service techniques as well as minor diagnosis and repair of all classifications of hybrid-electric vehicles. Each student must possess legal Class 'O' high voltage gloves and liners to attend this class. Prerequisite(s): AUTO 111 and AUTO 113 and AUTO 114. Restricted to: Community Colleges only.
- AUTO 221. Cooperative Experience I** 1-6 cr.  
Supervised cooperative work program. Student is employed in an approved occupation and supervised and rated by the employer and instructor. Student will meet in a weekly class. Graded S/U. Prerequisite: consent of instructor.
- AUTO 255. Special Problems in Automotive Technology** 1-5 cr.  
Individual studies in areas directly related to automotive technologies. Prerequisite: consent of instructor. May be repeated for a maximum of 12 credits.
- AUTO 295. Special Topics** 1-6 cr.  
Topics to be announced in the Schedule of Classes.

#### **AXED- AGRICULTURAL AND EXTENSION EDUCATION**

- AXED 100. Introduction to Agricultural, Extension, and Technology Education** 3 cr.  
Orientation to programs, philosophies, competencies and leadership skills needed by professionals in agricultural and technology education, extension education, agricultural communications, and related career opportunities in industry, governmental agencies, and international organizations.

- AXED 105. Techniques in Agricultural Mechanization** 3 cr. (2+2P)  
Development of competencies in agricultural mechanics including safety, tool identification, operation and maintenance of hand and power tools, cold metal, drafting, and plumbing procedures. Designed for any major wishing to improve mechanical skills needed in agriculturally related occupations in education and industry.
- AXED 111. Freshmen Orientation** 1 cr.  
Orientation to University life, including the understanding and utilization of resources that promote University success. Designed to promote success in achieving a career objective and perseverance for degree completion. Promotes a recognition of changes required in moving from high school to the University. Eight weeks in length, required for all freshmen in the College of Agricultural, Consumer and Environmental Sciences.
- AXED 200. Special Topics** 1-4 cr.  
Specific subjects and credits to be announced in the Schedule of Classes. Maximum of 4 credits per semester. No more than 6 credits toward degree.
- AXED 201G. Effective Leadership and Communication in Agricultural Organizations** 3 cr. (2+2P)  
Theory and practice in leadership and communication for professionals who must work effectively in leadership and supervisory roles with people in agricultural business, industry, government agencies, and education. Course focuses on contemporary leadership theories. Oral communication skills in informative and persuasive speaking, parliamentary procedure, and for small groups are developed.
- AXED 205. Metal Technology-Fabrication** 3 cr. (2+4P)  
Processes and procedures of metal fusion, including gas and electric welding techniques and safety. Designed for any major wishing to improve mechanical skills needed in agriculturally related occupations in education and industry.
- AXED 230. Early Field-Based Experience** 1 cr.  
Five-day field experience plus orientation and evaluation session. First-hand view of the roles of professional educators through field experiences in agricultural, extension, or technology education settings. Site options may include schools, extension offices, agencies, business, and industry. Prerequisites: consent of instructor. Corequisite: AXED 100. Graded S/U.
- AXED 270. Advanced Topics in Agricultural Leadership** 1-3 cr.  
An in-depth examination of issues, philosophies and challenges in agricultural leadership. Topics vary each semester. Restricted to: Main campus only. Taught with AXED 370
- AXED 300. Special Topics** 1-4 cr.  
Course addresses specific subjects and issues as identified by department. Topics and credits to be announced in the Schedule of Classes. Maximum of 4 credits per semester. No more than 6 credits may be applied to a degree.
- AXED 303. Small Engine Technology** 3 cr. (2+2P)  
Development of competencies in small gasoline engines; theory, operation, design, maintenance and safety. Designed for any major wishing to improve mechanical skills needed in agriculturally related occupations in education and industry.
- AXED 331. Agricultural Structures** 3 cr. (2+3P)  
Selection and use of agricultural building materials. Design, construction, and maintenance of agricultural structures. Development of competencies in carpentry, concrete, electricity, masonry, and safety. Designed for any major wishing to improve mechanical skills needed in agriculturally related occupations in education and industry.
- AXED 348. Advanced Technology in the Agricultural Industry** 3 cr. (2+3P)  
Application of technology in agricultural industry that includes solar energy, irrigation techniques, computer-aided drafting, laser leveling, TIG welding, and water quality and agricultural waste management.
- AXED 360. Agricultural Communications** 3 cr.  
Principles and practical experience in news writing, radio production, newsletter design, public meeting presentations, video productions, graphics, and public relations activities, especially as related to the fields of agriculture and family and consumer sciences.
- AXED 370. Advanced Topics in Agricultural Leadership** 1-3 cr.  
An in-depth examination of issues, philosophies and challenges in agricultural leadership. Topics vary each semester. Taught with AXED 270.



- AXED 380. Philosophy and Methods of Contests 3 cr.  
Covers the roles that career development events (contests) play in agricultural and technology education and in extension programs. Topics include competition and cooperation, winning and losing, ethics, use of community resources, and academic and employability skills taught through contests. Coaching as a teaching method is introduced and expanded. Students will assist with the coordination of various career development events. Corequisite(s): ANSC 310.
- AXED 400. The Diffusion and Adoption of Agricultural Innovations 3 cr.  
Factors that influence the rates of diffusion and adoption of innovations. Consequences of adopting or rejecting innovations. Processes by which change agents influence introduction and adoption of innovations. Same as AXED 500.
- AXED 415. Youth Program Development and Management 3 cr.  
Designed for professionals involved in youth group activities. Basic concepts in planning, conducting, and managing educational youth programs in a variety of organizations.
- AXED 430. Teaching Adults in Nonformal Settings 3 cr.  
The adult and postsecondary learner; adult learning styles and principles; use of community resources and problem-solving techniques; and learning strategies for adults in formal and nonformal education.
- AXED 436. Keys for Agricultural and Rural Development 3 cr.  
Introduction to concepts of development, the process of change, key factors that contribute to agricultural and rural development in a community, and strategies employed to effect change with implications for international students or domestic students planning to work internationally.
- AXED 444. Planning and Methods in Nonformal Education 3 cr.  
Identifying trends and resources of a community and planning community-based extension and nonformal education programs. Preliminary methods for teaching and evaluating nonformal education programs.
- AXED 445. Developing Excellent Programs in Career and Technical Education 3 cr.  
Students learn to develop excellence in the three components of a successful secondary school program in career and technical education: classroom and laboratory instruction, career and technical student organizations, and career development activities. Community-based program planning, utilizing partners, program marketing, and professional development are addressed as strategies for achieving excellence. Methods of obtaining financing and maintaining accountability for the program are discussed.
- AXED 446. Methods for Teaching Agricultural and Technology Education 3 cr.  
Methods of instruction and presentation, selection of teaching aids and support materials, classroom management, development of a complete educational program, and microteaching experiences. Prerequisite: GPA of 2.5 or above. Restricted to AXED Majors
- AXED 447. Directed Teaching in Agricultural or Technology Education 12 cr.  
Fourteen-week off-campus professional experience in directed teaching and observation provided in selected centers under secondary agricultural or technology education supervising teachers. Prerequisites: AXED 445, 446 and consent of instructor. Restricted to AXED majors.
- AXED 448. Directed Teaching in Extension Education 3-12 cr.  
Four-to-fourteen-week, professional experiences in directed teaching and observation provided in cooperative extension at the county, regional, or state level. Consent of instructor required.
- AXED 449. Directed Field Experience in Agricultural or Technology Education 3-12 cr.  
Four-to-fourteen-week, supervised learning experience in an approved teaching setting with application to educational, agricultural, technological, communications, public relations, or environmental practices. Consent of instructor required.
- AXED 456. Introduction to Research Methods 3 cr.  
Introduction to research design and methodology in education and behavioral sciences. Overview of common research designs and data collection strategies. Prepares students to critique published research and understand basic skills including hypothesis development and conducting a literature search. Prerequisite: junior standing.
- AXED 460. Methods in Career and Technical Laboratory Instruction 2 cr.  
For students planning to teach agricultural or technology education at a secondary or postsecondary level. Focus on planning, delivering, and evaluating instruction in laboratories; and on CPR, first aid, and NCCER certifications. Laboratory safety and tool, equipment, and laboratory management systems are also emphasized. Restricted to AXED Majors.
- AXED 466V. John Muir: Lessons in Sustainability 3 cr.  
This course examines the life of John Muir in the context of sustainability. Muir was a farmer, inventor, explorer, botanist, glaciologist, conservationist, and noted nature author. He was influential in the National Parks movement and in starting the Sierra Club. Living in the natural world influences his faith and philosophy. By examining his life and the themes that shaped it, students will develop an understanding of what it means to live sustainably and to contribute beyond their personal lives to a sustainable past.
- AXED 469. Experiential Learning in Career/Technical Education for Exceptional Learners in a Diverse Society 3 cr.  
Addresses the planning, delivering and evaluation of experiential learning activities for students with special needs. Specific strategies for working with students with special needs in a shop or laboratory setting within the Career and Technical Education environment will be included. Taught with AXED 569 and SPED 569. Prerequisite(s): SPED 350. Crosslisted with: SPED 469
- AXED 475. Leadership On Agricultural and Natural Resource Issues 3 cr.  
Investigates leadership concepts and group dynamics as they relate to a changing world and complex agricultural and natural resource issues. Topics include emotional intelligence, leading change, political leadership, facilitating agreement, team building, and managing conflict in agricultural and natural resource settings.
- AXED 480. International Agricultural Development 3 cr.  
Introduction to Agricultural topics (products, people, environment, culture, etc) that affect international development. Topics provide students with awareness, knowledge and understanding of teaching, research and service opportunities for those seeking experience or careers in international agricultural development. Taught with AXED 580.
- AXED 485. Agriscience Laboratory Applications 3 cr.  
Students learn to set up and teach in a modular agriscience laboratory, utilizing a variety of technologies. Modules covered may vary from semester to semester, but examples are: aquaculture systems, microscopy, tissue culture, soil and water testing, electrophoresis, hydroponics, global positioning systems, robotics, and presentation technologies. Students may develop their own modules and/or experiments. Graduate students will assist in laboratory set up and delivery. Prerequisite: Junior standing or above. Main campus only
- AXED 486. Effective Management of Volunteer Programs 3 cr.  
For individuals currently involved in, or interested in being involved in, the management and supervision of volunteer programs. Emphasis on practical application, utilizing a research and academic base. Explores the roles, functions, and tasks of volunteers and managers of volunteers including recruitment, orientation and training, supervision, evaluation, recognition and retention.
- AXED 487. The Cooperative Extension Service: An Overview 1 cr.  
On-line course addressing the history, mission, philosophy, structure, program areas and delivery methods of the Cooperative Extension Service. Course is relevant for anyone pursuing a career in Cooperative Extension.
- AXED 488. 4-H Youth Development 1 cr.  
On-line course explores 4-H Youth Development as an integral part of the Cooperative Extension Service. Topics to be addressed include mission, philosophy, delivery modes, audiences and partnerships. Course is relevant for anyone interested in pursuing a career in Cooperative Extension.
- AXED 489. The FFA Organization: An Overview 1 cr.  
Online course addressing the history, mission, philosophy and structure of the New Mexico and National FFA Organizations and their relationship to supervised agriculture experiences and the agricultural education curriculum. Course is relevant for anyone interested in pursuing a career in agricultural education.
- AXED 490. Independent Study in Agricultural, Extension, or Technology Education 1-3 cr.  
Specific subjects are agreed upon by the student and instructor. Prerequisites: junior or senior standing and consent of instructor. May be repeated for a maximum of 6 credits.
- AXED 499. Undergraduate Research 1-4 cr.  
Research experience in agricultural, extension, and technology education with applications to selected issues and problems. Prerequisites: consent of instructor, advisor, and department head.
- B A - BUSINESS ADMINISTRATION**
- B A 104. Introduction to Business 3 cr.  
Survey and integration of functions in business organizations within their social and economic environment. Community Colleges only.



- B A 105. Special Topics** 1-3 cr.  
Current topics in business and economics.
- B A 202. Small Business Enterprise** 3 cr.  
Appraisal of business functions within the framework of a small business organization.
- B A 291. Business Administration and Economics Internship and Cooperative Education I** 1-3 cr.  
Introduction and applications of the principles of business administration and economics. Registration in one course allowed per co-op work phase; a minimum of 12 work weeks is required. Open only to students in the College of Business. Option of S/U or a grade. The amount of academic credit (1-3 cr.) will be determined by the academic experience, and not by the work experience.
- B A 302. Corporate Responsibility and Ethics** 3 cr.  
Introduces business ethics concepts. Explores the complexity of ethical decisions given individual and professional ethical principles, corporate codes of ethics, and stakeholder interests. Critical thinking exercises apply these concepts to challenges that students will likely face as managers.
- B A 305. Leadership Training for COB Ambassadors** 1 cr.  
Leadership development for volunteers serving as COB student ambassadors, focusing on COB undergraduate business degree programs, NMSU student services, public speaking and public relations.
- B A 391. Business Administration and Economics Internship and Cooperative Education II** 1-3 cr.  
Applications of the principles of business administration and economics. Registration in one course allowed per co-op work phase; a minimum of 12 work weeks is required. Open only to students in the College of Business. Option of S/U or a grade. The amount of academic credit (1-3 cr.) will be determined by the academic experience and not by the work experience.
- B A 448. Small Business Consulting** 3 cr.  
Study, analysis, and presentation of recommendations for solving significant problems confronting small businesses. Prerequisite: senior standing or consent of instructor. Same as MGT 448.
- B A 485. The Business of Science and Technology** 3 cr.  
This course examines business practices for science and technology organizations. The main focus of this course is to show the commercialization process, using business processes to transform an invention into a marketable product. For example, biomedical science discoveries reach patients through collaborative interactions among universities, private industry, and the government over a period of time. Strategic planning, marketing, finance accounting and management practices facilitate the transformation process. Topics include patents, funding, business plan preparation, risk management, and ethical conduct. This course will also address historical, current and global perspectives of science-driven and technology-driven businesses. Not open to MBA students.
- B A 490. Selected Topics** 3 cr.  
Prerequisites vary according to the seminar being offered.
- B A 491. Business Administration and Economics Internship and Cooperative Education III** 1-3 cr.  
Applications of the principles of business administration and economics. Registration in one course allowed per co-op work phase; a minimum of 12 work weeks is required. Open only to students in the College of Business. Option of S/U or a grade. The amount of academic credit (1-3 cr.) will be determined by the academic experience and not by the work experience.
- B A 498. Independent Study** 1-3 cr.  
Individual studies directed by consenting faculty with the prior approval of the department head. Prerequisite: junior or above standing and consent of instructor. A maximum of 3 credits may be earned.

### BCHE- BIOCHEMISTRY

- BCHE 140. Introduction to Biochemistry** 1 cr.  
A description of the nature of inquiry in biochemistry, especially with respect to the interaction of chemistry and biology. Both historical development and topics of current interest will be discussed. Graded S/U.
- BCHE 241. Introduction to Research in Biochemistry** 1-3 cr.  
Techniques and procedures of biochemical research. Prerequisites: 8 credits of chemistry and 3.0 GPA in chemistry. May be repeated for a maximum of 3 credits.
- BCHE 341. Survey of Biochemistry** 4 cr. (3+3P)  
Basic principles of biochemical processes and the structure/function of the major classes of biomolecules, with introductions to metabolism and the central dogma of biochemistry. The chemical and biological properties of major biomolecules (DNA, proteins, Prerequisite(s): C or better in CHEM 211 or Chem 313.

- BCHE 395. Biochemistry I** 3 cr.  
Principles governing chemistry and physics of life processes with emphasis on the relationships between molecular structure and cell function. Basic principles of biochemical processes and the structure/function of the major classes of biomolecules with introductions to metabolism. Prerequisite(s): CHEM 314.
- BCHE 396. Biochemistry II** 3 cr.  
Biochemical principles of transcription, replication, recombination, and translation in prokaryotes and eukaryotes. Recombinant DNA technology and expression of foreign DNA in heterologous expression systems, with applications to biotechnology. Taught with BCHE 396 H. Prerequisite(s): C or better in BCHE 395.
- BCHE 396 H. Biochemistry II Honors** 3 cr.  
Taught with BCHE 396 with additional work required.
- BCHE 397. Experimental Biochemistry Laboratory** 3 cr.  
Introduction to fundamental techniques used to explore structure and function of biological macromolecules such as proteins, carbohydrates, lipids, and nucleic acid. Course covers analyzing and reporting experimental data; enzymology; quantitative methods to determine biological molecules; basic principles of electrophoresis, chromatography, and spectroscopic immunochemistry. Prerequisite: C or better in BCHE 395. Corequisite: BCHE 396.
- BCHE 432. Physical Biochemistry** 3 cr.  
This course focuses on modern Biophysical techniques used in protein and nucleic acid research. Topics are covered in some detail at the theoretical level. The course content is delivered entirely by podcast. Podcast contributions are from several different faculty from within their particular area(s) of expertise. Topics covered include (but are not limited to): biomolecular NMR, atomic force microscopy, light scattering, circular dichroism, ultracentrifugation, isothermal titration calorimetry, positron emission tomography, computerized tomography, ultrasound, functional MRI, protein fluorescence, mass spec/ proteomics, protein molecular dynamics simulations, and X-ray diffraction. Course credit qualifies for minor degree in chemistry as a physical-analytical chemistry emphasis. Prerequisite: One semester of undergraduate physical chemistry, e.g. CHEM 431, or CHEM 433.
- BCHE 440. Biochemistry Seminar** 1 cr.  
Introduction to current literature in biochemistry and molecular biology. Selected topics in the field will be presented by the faculty. Students will present written and oral reports from literature searches. Prerequisite: BCHE 395.
- BCHE 441. Advanced Research in Biochemistry** 1-3 cr.  
Investigation of biochemical problems and the development of special techniques. Prerequisites: consent of instructor, 16 credits of chemistry and 3.0 GPA in chemistry for nonmajors. May be repeated for a maximum of 3 credits.
- BCHE 441 H. Advanced Research in Biochemistry Honors** 1-3 cr.  
Same as BCHE 441. Additional work to be arranged. Prerequisites: consent of instructor, 16 credits of chemistry and 3.0 GPA in chemistry for nonmajors. May be repeated for a maximum of 3 credits.
- BCHE 446. Biochemistry III** 3 cr.  
Intermediary metabolism of carbohydrates, lipids, amino acids, and nucleic acids. Metabolic pathways discussed with emphasis on biochemical regulation and mechanistic, structural, functional, and evolutionary basis for existence. Prerequisite(s): BCHE 395 and either BCHE 396 or consent of instructor.
- BCHE 451. Special Topics** 1-3 cr.  
Same as CHEM 451. Prerequisite: consent of instructor. May be repeated for a maximum of 12 credits.
- BCHE 455. Independent Studies** 1-3 cr.  
Independent studies directed by consulting faculty. Prerequisite: consent of instructor.
- BCHE 494. Techniques in Genetic Engineering** 4 cr. (2+6P)  
Basic laboratory techniques required for research involving recombinant DNA technology: structured experimental procedures, including nucleic acid isolation and purification, as well as the identification and manipulation of genes and genetic material of both bacterial and plant origin. Prerequisites: BCHE 395, 396, and consent of instructor.

### BCIS- BUSINESS COMPUTER INFORMATION SYSTEMS

- BCIS 110. Introduction to Computerized Information Systems** 3 cr.  
Computerized information systems, their economic, and social implications. Introduction to microcomputer hardware, personal productivity software, and communications.

- BCIS 122. Introduction to Information Systems Programming 3 cr.  
Includes basic computer algorithms in current programming environments and the Java programming language. Prerequisite(s): C or better in BCIS 110 or CS 110; and MATH 120.
- BCIS 222. Object Oriented Programming 3 cr.  
Introduction to general principles underlying the practice of object-oriented programming. Prerequisite(s): C or better in BCIS 122 or CS 187. Restricted to: Main campus only.
- BCIS 322. Advanced Object-Oriented Programming 3 cr.  
In-depth exposure to object-oriented programming techniques and preliminary enterprise-level programming. Prerequisite: C or better in BCIS 222.
- BCIS 338. Business Information Systems I 3 cr.  
Application, design and use of computerized information systems in business environment. Prerequisite: BCIS 110 or C S 110 or consent of instructor. Not open to IS majors for credit toward major requirements.
- BCIS 350. Information Systems Analysis and Design 3 cr.  
Project management, analysis, requirements determination, and logical modeling of business information processing systems. Prerequisite(s): BCIS 222 or CS 187 or ET 262 or concurrent enrollment.
- BCIS 450. Systems Design, Development and Implementation 3 cr.  
Design, development and implementation of business information processing systems. Includes maintenance, evaluation and system management considerations. Prerequisite: C or better in BCIS 350.
- BCIS 455. Design of On-Line Business Systems 3 cr.  
Covers analysis, design, and development of on-line, real-time computerized business-information systems. Prerequisite: C or better in BCIS 350; and BCIS 322 or concurrent enrollment or consent of instructor.
- BCIS 458. Knowledge Management and Decision Support 3 cr.  
Design, evaluation and implementation of computerized decision systems. IS majors may not use this course to satisfy IS major requirement. Prerequisite(s): C or better in BCIS 338 or consent of instructor.
- BCIS 465. Business Systems Simulation 3 cr.  
Simulation of business systems. Model design, implementation, testing and analysis. Prerequisites: C or better in BCIS 322 and STAT 251G.
- BCIS 470. Object-Oriented Systems Development Techniques 3 cr.  
Design and implementation of n-tier information systems in the object-oriented environment, including web-based interfaces, business logic, and database communication. Prerequisite: C or better in BCIS 350; and BCIS 322 or concurrent enrollment or consent of instructor.
- BCIS 475. Database Management Systems 3 cr.  
Design, development, and use of database management systems in the business environment. Prerequisite: C or better in BCIS 350 or consent of instructor.
- BCIS 480. E-Commerce Security 3 cr.  
Introduction to securing network-based applications from internal and external threats. Fundamentals of network security, including TCP/IP, firewalls, intrusion detection, and vulnerability. Prerequisite(s): C or better in BCIS 460 or ET 377 or consent of instructor.
- BCIS 482. Management of Information Security 3 cr.  
Provides management overview of information security and thorough examination of administration of information security. Surveys field of information security including planning, policy and programs, protection and people relative to information security. Prerequisite: BCIS 110 or equivalent. Taught with BCIS 575.
- BCIS 485. Enterprise Resource Planning 3 cr.  
This course covers concepts in enterprise resource planning (ERP). Topics include how ERP integrates business processes across functional areas--such as the procurement process and the sales order process--and how businesses use ERP information systems in day-to-day operations as well as for performance monitoring. SAP R/3 software will be used in several hands-on examples of ERP software as a real-world example of an ERP system. IS majors are restricted from taking this course to satisfy IS requirements. Prerequisite(s): C or better in BCIS 338 or BCIS 350 or ACCT 252.
- BCIS 490. Selected Topics 1-3 cr.  
Current topics in business systems analysis. Prerequisites vary according to topics being covered. May be repeated for a maximum of 12 credits under different subtitles.
- BCIS 495. Enterprise Information Portals 3 cr.  
Enterprise information portal (EIP) is a framework for integrating information, people and processes across organizational boundaries using web-based technologies. In this class, you will explore the wide range of options (EIP's) (e.g. SAP Netweaver Portal) provided to integrate ERP solutions, third-party applications, legacy systems, databases, unstructured documents, internal and external Web content, and collaboration tools. Taught with BCIS 565. Prerequisite(s): BCIS 485.
- BCIS 498. Independent Study 1-3 cr.  
Individual studies directed by consenting faculty with prior approval of the department head. Prerequisites: junior or above standing and consent of instructor. May be repeated for a maximum of 3 credits.

### BCT- BUILDING CONSTRUCTION TECHNOLOGY

- BCT 100. Building Trades I 8 cr. (2+12P)  
Equipment and general safety. Human relations, building construction surveying, footings, foundation form work, framing, sheathing, insulation. Basic electrical wiring and plumbing. Classroom instruction, on-the-job training, and problem solving.
- BCT 101. Introduction to Construction I 2 cr. (2+1P)  
Basic safety, including personal protective equipment, how to perform basic construction tasks safely, and what to do if an accident occurs. Includes basic construction methods. Restricted to: Community colleges.
- BCT 102. Introduction to Construction II 2 cr. (2+1P)  
Introduction to power and hand tools, blueprints, and basic rigging hardware and techniques. Restricted to: Community colleges.
- BCT 103. Introduction to Construction Laboratory 3 cr.  
Provides students the opportunity to practice skills they have acquired in BCT 101 and BCT 102. It includes task-oriented projects in which students can apply many of the skills and knowledge that have been presented throughout the National Center for Construction and Education Research (NCCER) Carpentry Program. Corequisite(s): BCT 101 or BCT 102. Restricted to: Community College campuses only.
- BCT 104. Woodworking Skills I 3 cr. (1+4P)  
Use and care of hand tools and elementary power tools, safety procedures, and supervised project construction.
- BCT 105. Woodworking Skills II 3 cr. (1+4P)  
Advanced woodworking skills to include use of advanced power tools, power tool safety, and supervised construction. Prerequisite: BCT 104 or consent of instructor.
- BCT 106. Woodworking Theory and Practice 3 cr. (2+2P)  
History of wood manufacturing, industrial techniques, wood characteristics, stains and finishes. Design and construction of minor wood projects.
- BCT 107. Painting I 4 cr. (2+4P)  
Types and applications of paints and clear coatings. Use of fasteners, caulks, and sealants. Community Colleges only.
- BCT 108. Painting Level II 4 cr. (2+4P)  
Continuation of BCT 107: Painting failures and remedies, preparation, dry-wall patching and wood finishing. Prerequisite(s): BCT 107. Restricted to: Community College campuses only.
- BCT 110. Blueprint Reading for Building Trades 4 cr. (2+4P)  
Same as DRFT 151, OEET 101, OEPB 110.
- BCT 111. Small Equipment Maintenance and Repair 4 cr. (2+4P)  
Covers small engine theory, troubleshooting and repair, auto maintenance, hydraulic theory and repair lubricants, batteries and scheduled tool maintenance. Community Colleges only.
- BCT 112. Basic Masonry 4 cr. (2+4P)  
Covers use of brick and concrete blocks; basic techniques for mixing mortar and laying masonry units; describes the hand and power tools used in masonry, including safety; includes mathematics used to perform calculations related to masonry units; explains the types and properties of mortar and the materials used in mixtures. Community Colleges only.
- BCT 113. Masonry Level I 4 cr. (2+4P)  
Covers all types of concrete and clay masonry units and their applications; covers ties and reinforcing materials; includes layout, set-up, spreading mortar, cutting brick and block, laying to the line, making corners, tooling joints, patches and cleanup. Community Colleges only.
- BCT 114. Basic Carpentry 3 cr. (1+4P)  
Covers orientation to the trade; wood building materials, fasteners, and adhesives; detailed description and explanations of hand-operated and power tools, including safety; framing basics including laying out and constructing of wood floors, walls and ceilings and includes roughing in of door and window openings. Community Colleges only.

- BCT 115. Carpentry Level I** 3 cr. (1+4P)  
Describes the various kinds of roofs and provides instructions for lay out of the different roofing systems. Describes the various types of windows, skylights, and exterior doors and provides instruction for installation. Community Colleges only.
- BCT 116. Basic Carpentry Lab** 2 cr.  
Provides students the opportunity to practice skills they have acquired in BCT 114 and BCT 115. It includes task-oriented projects in which students can apply many of the skills and knowledge that have been presented throughout the National Center for Construction and Education Research (NCCER) Carpentry Program. Pre/Corequisite(s): BCT 114 or BCT 115. Restricted to: Community College campuses only.
- BCT 118. Math for Building Trades** 3 cr.  
Geometry, algebra, arithmetic, and basic trigonometry pertaining to mathematical applications in the building trades field. Prerequisite: CCDM 103N. Same as OEET 118, DRFT 118, OEPB 118.
- BCT 120. Building Materials I** 4 cr. (2+4P)  
Covers various types of building materials and their uses in the construction industry.
- BCT 121. Construction Law** 3 cr.  
Using the New Mexico Contractors Reference manual, this course covers licensing requirements and regulations, business, law and other important aspects of owning and running a construction business. Restricted to: Community College campuses only.
- BCT 200. Building Trades II** 8 cr. (2+12P)  
Continuation of BCT 100: roofing; exterior and interior finish; masonry; door, window, and cabinet installation.
- BCT 206. Advanced Cabinetmaking** 3 cr. (1+3P)  
Advanced cabinetmaking skills, to include expert use of hand and power tools, professional construction and finishing techniques. Prerequisites: BCT 105, BCT 106, or consent of instructor.
- BCT 211. Small Equipment Maintenance & Repair II** 4 cr. (2+4P)  
Advanced, hands on work experience. Students will work on small engines, explore the various aspects of advanced 4 stroke engine and 2 stroke engine techniques and apply skills and theory taught in the classroom and shop. Along with tours and various shop technicians. Prerequisite(s): BCT 111. Restricted to: Community College campuses only.
- BCT 214. Intermediate Carpentry I** 3 cr.  
Describes the properties, characteristics, procedures and uses of cement, aggregates, and other materials that, when mixed together, form different types of concrete. Covers procedures for estimating concrete volume and testing freshly mixed concrete, different types of reinforcing materials. Prepares students for working in and around excavations, preparing building foundations, capacities of soils; procedures used in shoring, sloping, and shielding trenches and excavations; trenching safety requirements, recognition of unsafe conditions; and mitigation of groundwater and rock when excavating foundations. Prerequisite(s): BCT 101, 102, 103, 114, 115 & 116. Corequisite(s): BCT 216. Restricted to: Community College campuses only.
- BCT 215. Intermediate Carpentry II** 3 cr.  
Covers site layout tools and methods. Layout and construction of deep and shallow foundations, forming of slabs-on-grade, curbing and paving. The module also provides an overview of the assembly, erection, and stripping of gang forms. This module covers the types of elevated decks and the formwork systems and methods used in their construction. Advanced systems: flat slab systems, flying forms, shoring and re-shoring systems, how tilt-up concrete construction is used, how tilt-up panels are formed, erected, and braced, installation of rebar and the types of embedments used to lift and brace the panels. Prerequisite(s): BCT 214. Corequisite(s): BCT 216. Restricted to: Community College campuses only.
- BCT 216. Intermediate Carpentry Laboratory** 2 cr.  
Provides students the opportunity to practice skills they have acquired in BCT 214 and BCT 215. It includes task-oriented projects in which students can apply many of the skills and knowledge that have been presented throughout the National Center for Construction and Education Research (NCCER) Carpentry Program. Pre/Corequisite(s): BCT 214 or BCT 215. Restricted to: Community College campuses only.
- BCT 217. Building and the Environment** 3 cr.  
Introduction to LEED's, and Green Building Fundamentals, sustainability, sustainable design and green building evaluating cost implication of green building. Describes site development; managing site water runoff, improving a project's water use efficiency. Discusses renewable energy sources, and introduces student to generating power on-site using renewable energy sources, improving a building's indoor environment quality, improving the building industries' environmental performance and environmental aspects of building maintenance, re-use and conservation. Restricted to: Community College campuses only.
- BCT 220. Building Materials II** 4 cr. (2+4P)  
Choice of types of materials for specific jobs; determination of sizes and amounts.
- BCT 221. Cooperative Experience I** 1-4 cr.  
Supervised cooperative work program. Student is employed in an approved occupation and is supervised and rated by the employer and instructor. Student will meet in a weekly class. Graded S/U. Prerequisite: consent of instructor.
- BCT 224. Advanced Carpentry I** 3 cr.  
Covers the equipment, principles, and methods used to perform distance measurement and leveling. In addition to layout for surveyors, field engineers, and carpenters; interpretation and use of site/plot plan drawings; and methods used for on-site communication. Covers the principles, equipment, and methods used to perform site layout. Covers commercial Construction: roofing materials and structures and describes the procedures for installing commercial. Covers installation of a variety of finishing materials, including paneling, and wainscoting. Also covers installation of curtain walls and fire-rated commercial construction. Also covers a variety of stair systems used in commercial construction.
- BCT 226. Advanced Carpentry Laboratory** 2 cr.  
Provides practical task-oriented hands-on experience in which the student applies the skills and knowledge presented in the BCT 225 and BCT 226. Completion of BCT 225/226/227 will lead towards Certification under the National Center for Construction Education and Research (NCCER) Carpentry Program. Pre/Corequisite(s): BCT 224 or BCT 225. Restricted to: Community College campuses only.
- BCT 250. Building Trades III** 6 cr. (3+6P)  
Continuation of BCT 200.
- BCT 255. Special Topics** 1-6 cr.  
Topics to be announced in the Schedule of Classes.
- BCT 290. Special Problems in Building Technology** 1-4 cr.  
Individual studies in areas directly related to building technologies. Prerequisite: consent of instructor.
- BIL- BILINGUAL EDUCATION**
- BIL 489. Topics** 3 cr.  
Course subtitled in the Schedule of Classes. May be repeated three times for a maximum of 9 credits.
- BIOL- BIOLOGY**
- BIOL 101G. Human Biology** 3 cr.  
Introduction to modern biological concepts. Emphasis on relevance to humans and their relationships with their environment. Cannot be taken for credit after successful completion of BIOL 111G or BIOL 211G. Appropriate for non-science majors. Requires successful completion of BIOL 101GL in order to meet the NM Common Core Area III Laboratory Science requirements.
- BIOL 101GL. Human Biology Laboratory** 1 cr. (3P)  
Laboratory for BIOL 101G. Laboratory experiences and activities exploring biological concepts and their relevance to humans and their relationship with their environment. Corequisite: BIOL 101G.
- BIOL 110G. Contemporary Problems in Biology** 4 cr. (3+3P)  
Fundamental concepts of biology will be presented using examples from relevant problems in ecology, medicine and genetics. For non-science majors only. Community Colleges only.
- BIOL 111G. Natural History of Life** 3 cr.  
Survey of major processes and events in the genetics, evolution, and ecology of microbes, plants and animals, and their interactions with the environment. Appropriate for non-science majors. Must be taken with BIOL 111L to meet general education requirements.
- BIOL 111GL. Natural History of Life Laboratory** 1 cr. (3P)  
Laboratory experiments, demonstrations and exercises on interrelationships among organisms, biodiversity, processes of evolution, and interaction of organisms and their environment. Corequisite: BIOL 111G.



- BIOL 154. Introductory Anatomy and Physiology** 4 cr. (3+3P)  
Survey of human structure and function (does not replace BIOL 190, BIOL 111G, or BIOL 211G as a prerequisite for advanced courses in biology). Restricted to: Community Colleges only.
- BIOL 211G. Cellular and Organismal Biology** 3 cr.  
Principles of cellular structure and function, genetics, and physiology of microbes, plants, and animals. Suitable for nonmajors with sufficient chemistry. Must be taken with BIOL 211L to meet general education requirements. Pre/Corequisites: CHEM 110G or CHEM 111G.
- BIOL 211GL. Cellular and Organismal Biology Laboratory** 1 cr. (3P)  
Laboratory demonstrations, experiments and exercises on molecular and cellular biology and organismal physiology. Must have passed BIOL 211G or be concurrently enrolled in BIOL 211G and BIOL 211L. Corequisite: either CHEM 110G or CHEM 111G.
- BIOL 219. Public Health Microbiology** 3 cr.  
The characteristics of pathogenic microorganisms and the diseases that they cause. Will not meet the microbiology requirements for biology or medical technology majors. Prerequisite: BIOL 211G and BIOL 211L.
- BIOL 221. Introductory Microbiology** 3 cr. (3P)  
Principles of isolation, taxonomy, and physiology of microorganisms. Prerequisite: CHEM 112G, equivalent or consent of instructor. Corequisite: BIOL 221L. Community Colleges only.
- BIOL 221 L. Introductory Microbiology Laboratory** 1 cr. (3P)  
A laboratory course to accompany BIOL 221 or BIOL 219. Prerequisite: BIOL 221 or BIOL 219 or concurrent enrollment.
- BIOL 222. Zoology** 3 cr. (2+3P)  
Structure, function, and survey of animals. Prerequisite: BIOL 111G and BIOL 111L, or BIOL 190, and at least sophomore standing. Community Colleges only.
- BIOL 225. Human Anatomy and Physiology I** 4 cr. (3+3P)  
The first in a two-course sequence that covers the structure and function of the human body, including terminology of the human gross anatomy, chemistry overview, cell structure, cell physiology (including DNA, protein synthesis and cell division). The organization of cells and tissues and their metabolic and homeostatic processes and regulation are also covered. Physical and chemical operation of organs and systems of the human body include the integumentary, skeletal, muscular, and nervous systems. Pre/Corequisite(s): CHEM 110G or CHEM 111G. Restricted to: Community Colleges only.
- BIOL 226. Human Anatomy and Physiology II** 4 cr. (3+3P)  
The second in a two-course sequence that covers the structure and function of the human body. Includes the physical and chemical operation of the organs and systems of the human body, including endocrine, cardiovascular, lymphatic, immune, respiratory, digestive, urinary and reproduction system. Concepts of nutrition, metabolism, energy, fluid and electrolyte balance, heredity pregnancy and human embryonic and fetal development are also covered. Prerequisite(s): BIOL 225, CHEM 110G or CHEM 111G. Restricted to: Community Colleges only.
- BIOL 227. Pathophysiology** 3 cr.  
A study of the structure and function of the human body with specialized emphasis on disease processes. Prerequisite(s): OEHO 153/BIOL 225. Corequisite(s): OEHO 154/BIOL 226. Restricted to: Community Colleges only.
- BIOL 250. Special Topics** 1-3 cr.  
Specific subjects to be announced in the Schedule of Classes. May be repeated for a maximum of 6 credits. Community Colleges only.
- BIOL 253. Human Anatomy** 4 cr. (3+3P)  
Detailed presentations of human anatomy, with laboratory. For nursing, prenursing, and human nutrition and food science majors only. Prerequisite(s): Grade of C in BIOL 190 or BIOL 211G and either CHEM 111 or CHEM 110G. Restricted to: Community Colleges only.
- BIOL 254. Human Physiology** 3 cr.  
Physical and chemical operation of the organs and systems of the human body. Not open to students who have passed BIOL 354 or BIOL 381. Prerequisites: BIOL 190 or BIOL 211G; BIOL 211L; CHEM 111G or CHEM 110G.
- BIOL 254 L. Human Physiology Laboratory** 1 cr. (3P)  
Laboratory to accompany BIOL 254. BIOL 254 must be taken concurrently or in an earlier semester. Community Colleges only.
- BIOL 271. Human Systemic Anatomy** 3 cr.  
Detailed study of human anatomy with emphasis in skeletal, muscular, nervous and cardiovascular systems. Designed specifically for students interested in allied health occupations. Prerequisite: consent of instructor. Corequisite: BIOL 271L or SP M 271L. Same as SP M 271. Not for biology majors.
- BIOL 271 L. Human Systemic Anatomy Laboratory** 1 cr.  
Detailed study of human anatomy with emphasis in skeletal, muscular, nervous and cardiovascular systems. Designed specifically for students interested in allied health occupations. Prerequisite: consent of instructor. Corequisite: BIOL 271 or SP M 271. Same as SP M 271L.
- BIOL 301. Principles of Ecology** 3 cr.  
A survey of ecology including general theory, the adaptations of organisms, population dynamics, species interactions, and the structure and function of natural communities and ecosystems. Same as E S 301. Prerequisite(s): BIOL 111G, A ST 311, and grade of C or better in MATH 191 or Math Placement Exam score adequate to enroll in mathematics courses beyond MATH 191. Crosslisted with: E S 301
- BIOL 302. Molecular Biology Techniques Laboratory** 3 cr. (6P)  
This combined lecture and laboratory course emphasizes molecular biology laboratory practices through the hands-on application of commonly applied techniques, protocols, and equipment. The topics covered include both the fundamental development of empirical data as well as data analysis using stand-alone and web-based resources. Consent of instructor required. Prerequisite(s): BIOL 211G or equivalent.
- BIOL 305. Principles of Genetics** 3 cr.  
Covers fundamental principles of reproduction, variation, and heredity in plants and animals. Prerequisite(s): BIOL 111G, BIOL 211G, and either CHEM 111 or CHEM 115. Crosslisted with: AGRO 305, ANSC 305 and HORT 305
- BIOL 311. General Microbiology** 3 cr.  
Principles of physiology, molecular biology, ecology, and taxonomy of microorganisms. Not open for credit toward graduation for students who have taken BIOL 221, General Microbiology. Prerequisite: BIOL 211G.
- BIOL 311 L. General Microbiology Laboratory** 2 cr. (4P)  
Microbiology techniques and procedures, including isolation and identification of microorganisms and biotechnology procedures that employ microorganisms. Not open for credit for students who have taken BIOL 221L. Prerequisite: BIOL 219 or BIOL 311 or concurrent enrollment.
- BIOL 312. Plant Taxonomy** 3 cr. (2+3P)  
Classification and identification of representative plant families and local plants. Emphasis on ability to use technical sources. Saturday field trips may be recommended. Prerequisites: BIOL 111G or BIOL 190.
- BIOL 313. Structure and Function of Plants** 3 cr. (2+3P)  
Structure, function, and survey of plants. Not open for credit toward graduation for students who have taken BIOL 220, Botany. Prerequisite: BIOL 111G or BIOL 190 and sophomore-level standing. BIOL 211G recommended.
- BIOL 314. Plant Physiology** 3 cr.  
Photosynthesis, respiration, water relation of plants, minerals and organic nutrition, growth and development. Prerequisites: BIOL 211G and CHEM 122. Same as EPWS 314.
- BIOL 322. Zoology** 3 cr. (2+3P)  
Structure, function, and survey of animals. Not open for credit toward graduation for students who have taken BIOL 222, Zoology. Prerequisite: BIOL 111G or BIOL 190 and at least sophomore-level standing. BIOL 211G recommended.
- BIOL 330. Comparative Anatomy and Embryology** 4 cr. (3+3P)  
The developmental and evolutionary basis for the diversity and homology of body plans within the classes of vertebrate organisms. Laboratories will emphasize comparative dissection. Prerequisite: BIOL 190 or BIOL 111G and BIOL 211G. BIOL 322 recommended.
- BIOL 350. Special Topics** 1-3 cr.  
Specific subjects announced in Schedule of Classes and offered as scheduled courses. May be repeated for unlimited credit.
- BIOL 351. Biology Internship** 1-6 cr.  
Substantial off-campus experience in biology selected by student in consultation with regular biology faculty member. Internship must be approved by faculty member. Student will supply mutually agreed upon documentation of internship activities after the internship is completed. Prerequisite: 45 college credits, 2.5 or better GPA, consent of instructor. May be repeated for a maximum of 6 credits. Restricted to biology and microbiology majors. Graded S/U.
- BIOL 354. Physiology of Humans** 3 cr.  
Principles of integrative functions in humans. A systems approach emphasizing tissues, organs, and their regulation. Not open to students who have taken BIOL 254. Prerequisite: BIOL 211G.
- BIOL 354 L. Laboratory of Human Physiology** 1 cr. (3P)  
Laboratory to accompany BIOL 354. Not open to students who have taken BIOL 254L. Prerequisite: either BIOL 254, BIOL 381, BIOL 354, or concurrent enrollment in BIOL 354.



- BIOL 373. Fungal Biology 3 cr. (3+2P)  
Same as EPWS 372. Prerequisite: EPWS 310 or BIOL 311 or consent of instructor.
- BIOL 377. Cell Biology 3 cr.  
Fundamentals of eukaryotic cell structure, organization, and function. Emphasis on membranes, subcellular organelle systems, cytoskeleton, and cell cycle. Includes basic aspects of molecular biology. Prerequisite(s): BIOL 211G and BIOL 305. BIOL 111G recommended.
- BIOL 381. Animal Physiology 3 cr.  
Principles of integrative function in animals, emphasizing tissues, organs, organ systems, and regulation. Includes adaptations of animals to their environments. Prerequisites: BIOL 211G and junior-level standing. BIOL 111G and BIOL 377 recommended.
- BIOL 385. An Introduction to Cancer 3 cr.  
This course will cover 3 areas of cancer research and their interdisciplinary connections: clinical cancer research, epidemiology and public health, and basic cancer research. Prerequisite(s): BIOL 305 (or equivalent).
- BIOL 398. Biology Research Programs 1-3 cr.  
Directed studies and research experiences, by arrangement with instructor. May be repeated for a maximum of 6 credits.
- BIOL 402. Biology Honors Thesis 1-3 cr.  
Provides guidance in how to write a scientific paper in the sciences. Students will produce an honors thesis based on previous independent research. Prerequisite: Consent of instructor.
- BIOL 408. Ecology of Plants 3 cr.  
Controlling factors, succession, community dynamics, and the classification of vegetation. Prerequisite: BIOL 301.
- BIOL 412. Seminar in Microbiology 1 cr.  
Seminar to aid students in assessment and presentation of classical and current topics in microbiology. Prerequisites: BIOL 311 and BIOL 311L.
- BIOL 423. Primate Adaptation and Evolution 3 cr.  
Survey of the adaptations and evolutionary history of non-human primates. Consent of instructor required.
- BIOL 423 L. Primate Adaptation and Evolution Laboratory 1 cr. (1P)  
Laboratory with exercises on non-human primate adaptation and evolution.
- BIOL 424. Human Osteology 3 cr.  
A survey of the functional, developmental, and evolutionary biology of the human skeleton. Identifying bones and teeth from hands-on experience with skeletal and dental material. Provides a foundation for human evolutionary studies, bioarchaeology and forensic anthropology. Prerequisite: ANTH 355, 370 or equivalent.
- BIOL 424 L. Human Osteology Lab 1 cr. (1P)  
Laboratory for ANTH 474. Experiences and activities related to identifying teeth and bones of the human skeleton. Prerequisite: ANTH 355, 370 or equivalent.
- BIOL 434. Human Evolution 3 cr.  
Overview of human biological evolution from the emergence of Miocene apes to the modern human diaspora. Prerequisite: ANTH 355 or consent of instructor.
- BIOL 434 L. Human Evolution Laboratory 1 cr. (1P)  
Laboratory in human evolution, includes exercises and activities to learn the human fossil record. Prerequisite: ANTH 355 or consent of instructor.
- BIOL 436. Disease Vector Biology 3 cr.  
Fundamentals of disease vector biology with emphasis on molecular biology. Explores an overview of vector borne diseases, insect endocrinology, insect immunity, olfaction, vector genome projects and transgenic insect techniques. Includes student presentations and literature discussions. Prerequisite(s): BIOL 211G and BIOL 305. Taught with: BIOL 536
- BIOL 447. Ornithology 4 cr. (3+3P)  
Morphology, life histories, systematics, ecology, and behavior of birds.
- BIOL 448 H. Senior Thesis 2 cr.  
Two-semester research on a selected problem. Includes a written paper and an oral examination. Open to senior biology majors with an overall GPA of 2.5 or better and consent of faculty.
- BIOL 450. Special Topics 1-3 cr.  
Specific subjects announced in the Schedule of Classes and offered as scheduled courses. May be repeated for unlimited credit.
- BIOL 451. Physiology of Microorganisms 3 cr.  
Aspects of cellular physiology unique to prokaryotes. Prerequisites: C or better in BIOL 311 (or equivalent) and either BCHE 341 or BCHE 395 (or equivalent).
- BIOL 462. Conservation Biology 3 cr.  
Examination of the value of biological diversity, the natural processes that control biological diversity, and the ways in which human activities have resulted in the loss of biological diversity, both regionally and globally. Prerequisite: BIOL 301.
- BIOL 465. Invertebrate Zoology 4 cr. (3+3P)  
Survey, ecology, behavior and physiology. Prerequisite: BIOL 111G or BIOL 190 and junior-level standing. BIOL 322 recommended.
- BIOL 466. Invertebrate Zoology Field Trip 1 cr.  
A one-week field trip for the study of marine invertebrates. Registrants must provide own camping gear. Prerequisite: BIOL 465 or equivalent (or concurrent enrollment) or consent of instructor. Graded S/U.
- BIOL 467. Evolution 3 cr.  
Covers theory, historical background, population variation, natural selection, adaptation, speciation. May not be offered spring semester, even-numbered years. Prerequisite: BIOL 111G or BIOL 190 and BIOL 305.
- BIOL 469. Biology of Emerging Infectious Diseases 3 cr.  
This class will investigate the evolutionary and ecological drivers of disease emergence. The effect of emerging diseases on human health will be addressed throughout the class, but the class will also consider the consequences of disease emergence for the health of wildlife and plant populations. Additionally, the class will consider the mechanisms used to control disease emergence and why they succeed or fail. Prerequisite(s): Introductory Genetics (BIOL 305 or equivalent) or consent of the instructor.
- BIOL 470. Developmental Biology 3 cr.  
The purpose of this course is to introduce students to the principles that govern the development of a single fertilized egg cell into a complex multicellular organism. These principles, and often the molecular mechanisms by which they are accomplished, appear to be universal for all multicellular organisms including both plants and animals. We will explore issues such as: how cells become committed to particular cell fates and how this commitment is maintained; how organs acquire particular shapes, sizes and positions; the developmental causes of some human diseases; how the environment affects development; and, how changes in development provide the material basis for evolutionary change. Prerequisites: BIOL 211G, BIOL 305.
- BIOL 471. Molecular and Cellular Mycology 3 cr.  
Exploration of the world of fungi with emphasis on fungal molecular biology and development. Including discussion of fungal taxonomy and genomics. Prerequisites: BIOL 311 required, BCHE 341 or BCHE 395 recommended, or consent of instructor.
- BIOL 472. Primate Behavior and Ecology 3 cr.  
Survey of the social behavior and ecology of nonhuman primates.
- BIOL 473. Ecology of Microorganisms 3 cr. (2+3P)  
The metabolic interactions of microorganisms in the environment, with emphasis on their roles in ecological processes. Prerequisites: BIOL 311 or consent of instructor.
- BIOL 474. Immunology 3 cr.  
Basic concepts of the immune response. Prerequisites: BIOL 305 and CHEM 211 or CHEM 313.
- BIOL 475. Virology 3 cr.  
Mechanisms of viral infections of animals and man. Prerequisites: BIOL 311, and either BCHE 341 or BCHE 395.
- BIOL 476. Soil Microbiology 3 cr.  
Same as SOIL 476.
- BIOL 476 L. Soil Microbiology Laboratory 1 cr. (3P)  
Same as SOIL 476L.
- BIOL 477. Applied and Environmental Microbiology 4 cr.  
A lecture-laboratory course on the microorganisms and the reactions they mediate which either impact the environment or have industrial applications. Reading of current literature will be emphasized. Topics include bioremediation, water quality, and aspects of industrial and food microbiology. Prerequisite: BIOL 311, and 311L, or consent of instructor.
- BIOL 478. Molecular Biology of Microorganisms 3 cr.  
The biochemical basis for gene mutation, recombination, and expression with emphasis on prokaryotes. Includes fundamentals of recombinant DNA technology. Prerequisites: BIOL 305, BIOL 311, and either passage or concurrent enrollment in BCHE 341 and BCHE 395.
- BIOL 479. Medical Microbiology 3 cr.  
An in-depth overview of microbial pathogens associated with human infectious disease. Etiological agents, pathogenesis, and processes leading to the disease state and the therapies of infectious disease. Prerequisite: BIOL 474 recommended.

- BIOL 479 L. Medical Microbiology Laboratory 1 cr.  
Overview of common procedures used by medical microbiologists to identify agents of disease or microbial pathogen traits. Prerequisite: BIOL 479 or concurrent enrollment.
- BIOL 480. Animal Behavior 3 cr.  
A survey of the field of animal behavior. BIOL 322 recommended. Prerequisite(s): BIOL 111G or BIOL 190 and junior-level standing.
- BIOL 480 L. Animal Behavior Laboratory 1 cr. (2P)  
Laboratory and field experiences in animal behavior Prerequisite(s): BIOL 111 or BIOL 190 and junior level standing. BIOL 322 recommended. Corequisite(s): BIOL 480.
- BIOL 482. Microbial Systematics 2 cr.  
Systematics of prokaryotic organisms, and consideration of fungi and protists. Integration of morphological, biochemical, molecular, and genetic information in determining group relationships. Problems encountered when applying classic systematic principles to organisms without significant contribution of sexual reproduction. Prerequisites: BIOL 311 (or equivalent) and consent of instructor.
- BIOL 484. Animal Communication 3 cr.  
An examination of how animals produce and perceive signals, what factors influence the form of signals in different sensory modalities, and how conflicts between senders and receivers affect signaling strategies. Weekly discussion from the primary literature and group research products.
- BIOL 488. Principles of Conservation Genetics 3 cr.  
Fundamentals of the genetics of small populations. Genetic technologies used in studying small populations. Application of genetics and evolution to the conservation of biological populations. Prerequisite: BIOL 305.
- BIOL 489. Genetic Aspects of Population Biology 3 cr.  
Basic theory of population genetics and how that theory has guided, and been influenced by, studies of natural populations. Prerequisite: BIOL 305 or equivalent.
- BIOL 490. Neurobiology 3 cr.  
Fundamentals of neurobiology with an emphasis on properties of neurons and glia, principles of synaptic transmission, development of nervous system and organization of motor and sensory systems. Prerequisite: BIOL 211, BIOL 305, MATH 142G, or MATH 191G, and CHEM 211 or CHEM 313.
- BIOL 498. Biology Research Programs 1-3 cr.  
Directed studies and research experiences, by arrangement with instructor. May be repeated for a maximum of 6 credits.
- BLAW- BUSINESS LAW**
- BLAW 230. Business Law 3 cr.  
Introduction to law in general and application to business specifically; comprehensive study of the law of contracts; and the principal and agent relationship. Offered at all NMSU Community Colleges except Dona Ana Community College. Credit may not be earned in both BLAW 230 and BLAW 317.
- BLAW 313. Sports and the Law 3 cr.  
Introduction to legal concepts related to sports and business including an introduction to U. S. law and the civil practice, agency, sports contracts, sport torts, sport crimes, pertinent federal legislation such as Title IX, drugs and sports, international sports issues, pertinent antitrust issues, intellectual property, ethics and alternative dispute resolution.
- BLAW 313V. Sports and the Law 3 cr.  
Introduction to legal concepts related to sports and business including an introduction to U. S. law and the civil practice, agency, sports contracts, sport torts, sport crimes, pertinent federal legislation such as Title IX, drugs and sports, international sports issues, pertinent antitrust issues, intellectual property, ethics and alternative dispute resolution.
- BLAW 316. Legal Environment of Business 3 cr.  
Survey of business law including: the legal system (court systems, sources and types of law, litigation and dispute resolution), ethics and corporate social responsibility, administrative law, tort law, contract law, agency and employment law, business structure and governance, securities regulations, and international law. Students may not receive credit for both BLAW 316 and BLAW 317.
- BLAW 325. Real Estate Principles and Law I 3 cr.  
Same as FIN 325.
- BLAW 385V. Consumers and the Law 3 cr.  
Study of the interrelationships between business, legal, and ethical aspects of consumer issues and their attendant civil liability and remedies in domestic and international markets.
- BLAW 391. Business Law Internships and Cooperative Education 1-3 cr.  
Integration of academic studies and principles of business law in a relevant work experience. The amount of academic credit (1 to 3 credit hours) will be determined at the time of enrollment by the department head or supervising instructor based upon the duration of the work experience and the scope of the academic requirements. Prerequisites: BUSA 111, one BLAW course and consent of instructor. May be repeated for a maximum of 3 credits.
- BLAW 418. Uniform Commercial Code and Advanced Business Law Topics 3 cr.  
Property, advanced contract law, debtor-creditor relations, bankruptcy and Uniform Commercial Code topics including sales, negotiable instruments, secured transactions and documents of title. Students who have taken BLAW 318 may not receive credit for BLAW 418. Prerequisite: BLAW 316.
- BLAW 490. Selected Topics 1-3 cr.  
Prerequisites vary according to the seminar being offered.
- BLAW 498. Independent Study 1-3 cr.  
Individual studies directed by consenting faculty with the prior approval of the department head. Prerequisites: junior or above standing and consent of instructor and department head.
- BMGT- BUSINESS MANAGEMENT**
- BMGT 110. Introduction to Business 3 cr.  
Terminology and concepts of the business field. Role of accounting, computers, business management, finance, labor, and international business in our society. Restricted to: Community College campuses only.
- BMGT 112. Principles of Banking 3 cr.  
Banking in today's economy: language and documents of banking, check processing, teller functions, deposit function, trust services, bank book-keeping, loans, and investments. Restricted to: Community College campuses only.
- BMGT 126. Retail Management 3 cr.  
Phases of retailing, including types of retail outlets and basic problems of organizing and operating a retail store. Restricted to: Community College campuses only.
- BMGT 132. Principles of Selling 3 cr.  
Analysis of customer behavior, persuasive communication, process of the sales interview. Restricted to: Community College campuses only.
- BMGT 136. Fundamentals of Buying and Merchandising 3 cr.  
Covers operational aspects of procuring and selling merchandise for the retail store. Procedures covered are buying, receiving, pricing strategies, sales promotions and operational controls. Restricted to: Community College campuses only.
- BMGT 138. Advertising 3 cr.  
Psychological approach to non-personal consumer persuasion; applied techniques in media selection, layout mechanics, production methods, and campaign structures. Restricted to: Community College campuses only.
- BMGT 140. Principles of Supervision I 3 cr.  
Principles of supervision emphasizing planning, organization, rating of employees and procedures to develop good morale. Introduction to interpretation of case studies. Restricted to: Community College campuses only.
- BMGT 150. Income Taxation 3 cr.  
Federal income taxation of individuals, sole proprietorships, partnerships, corporations, trusts, and estates with particular reference to CLU, life insurance and annuities. Restricted to: Community College campuses only.
- BMGT 155. Special Topics I 1-3 cr.  
Introductory special topics of lower division level work that provides a variety of timely subjects and content material. May be repeated up to 9 credits. Restricted to: Community College campuses only.
- BMGT 160. Self-Presentation and Etiquette 3 cr.  
Introduction to business etiquette based on tradition, social expectations, and professional behavior standards. Restricted to: Community College campuses only.
- BMGT 170. Spanish for the Business Paraprofessional I 3 cr.  
Emphasis on developing the oral ability of Spanish native-speakers for use in the local and border business community. Prerequisite(s): BMGT 110 and native or near-native speakers of Spanish. Restricted to: Community College campuses only.

- BMGT 171. Spanish for the Business Paraprofessional II** 3 cr.  
Develop oral and reading abilities of native or near-native speakers of Spanish as it relates to the human resources department of small or large businesses; interacting effectively with Spanish-speaking clientele in their own business. Prerequisite(s): BMGT 110 and BMGT 170. Restricted to: Community College campuses only.
- BMGT 175. Introduction to Business Finance** 3 cr.  
Understanding financial systems and the methods businesses use to acquire and use resources is an important tool for the managers. This course provides an overview of the financial inner workings of businesses and corporations. Restricted to: Community College campuses only.
- BMGT 191. Students in Free Enterprise** 1 cr.  
Students in Free Enterprise is an international organization promoting and teaching business entrepreneurship. Students will learn teamwork, leadership, and networking skills by participating in regional and international business competitions and community service projects. May be repeated for a maximum of 6 credits. Restricted to: Community College campuses only. Restricted to BMGT majors.
- BMGT 201. Work Readiness and Preparation** 2 cr.  
Instruction in methods of selection, seeking, acquiring and retaining employment. Addresses work success skills, business etiquette, employer expectation and workplace norms. Restricted to: Community College campuses only.
- BMGT 202. Career Management** 1 cr.  
Developing and implementing career plans through decision making framework to gain personal success and satisfaction within today's social and global workforce. Consent of instructor required. Restricted to: Community College campuses only.
- BMGT 203. Applied English** 3 cr.  
Application of English skills to the workplace. Effective writing of business communications and forms. Emphasis on clarity, correctness, and conciseness. Restricted to: Community College campuses only.
- BMGT 205. Customer Service in Business** 3 cr.  
Establishes concepts of service quality in relationship to business success and maximization of returns to the organization. Explores techniques for delivering quality and service in a variety of business settings. Restricted to: Community colleges.
- BMGT 210. Marketing** 3 cr.  
Role of marketing in economy, types of markets, product development, distribution channels, pricing, promotion of goods, market research, consumer motivation, and management of marketing process. Prerequisite(s): BMGT 110. Restricted to: Community College campuses only.
- BMGT 211. Marketing for Bankers** 3 cr.  
Concepts and philosophies of marketing; information, research, target, the marketing mix, and market planning. Prerequisite(s): BMGT 112. Restricted to: Community College campuses only.
- BMGT 212. Supervisory and Leadership Trends** 3 cr.  
Current trends in marketing, merchandising, sales promotion and management; in manufacturing, merchandising and service types of businesses. Extensive use of practical student project. Prerequisite(s): BMGT 140. Restricted to: Community College campuses only.
- BMGT 213. Consumer Lending** 3 cr.  
Principles of credit evaluation, types of credit, marketing, collections, legal aspects, installment lending, leasing management, insurance, and rate structure and yields. Prerequisite(s): BMGT 112. Restricted to: Community College campuses only.
- BMGT 215. Banks and the Money Supply** 3 cr.  
Practical application of the economics of money and banking. Required of all students electing the banking option. Restricted to: Community College campuses only.
- BMGT 216. Business Math** 3 cr.  
Application of basic mathematical procedures to business situations, including percentage formula applications, markup, statement analysis, simple and compound interest, and annuities. Prerequisite(s): CCDM 103N or satisfactory math score on ACT. Restricted to: Community College campuses only.
- BMGT 221. Cooperative Experience I** 3 cr.  
Student employed in approved work site; supervised and rated by employer and instructor. Each credit requires specified number of hours of on-the-job work experience. Consent of instructor required. Graded: S/U. Restricted to: Community colleges. Restricted to BMGT majors.
- BMGT 223. Supervision and Labor Relations** 3 cr.  
Federal acts affecting business and industry, supervisor's responsibility for effective labor relations, union contracts, grievance procedures, and job and safety instruction. Restricted to: Community College campuses only.
- BMGT 225. Introduction to Commercial Lending** 3 cr.  
Commercial lending overview, the lending process, portfolio management, and regulation and business development. Prerequisite(s): BMGT 112. Restricted to: Community College campuses only.
- BMGT 228. Small Business Finance, Regulations and Operations** 3 cr.  
Business start-ups are often unaware of the intricacies of financing, governmental regulations and operational details. This course prepares the student to seek and utilize the most opportune financing available and ensure that pertinent governmental and tax regulations are followed. Restricted to: Community colleges.
- BMGT 229. Small Business Marketing for Success** 3 cr.  
This course teaches students the essentials of real world marketing as a means of ensuring the success of their business. Marketing plans, research and customer identification are covered as well as advertising methods that work to create sales. Restricted to: Community colleges.
- BMGT 231. Legal Issues in Business** 3 cr.  
Application of fundamental legal principles to business transactions. Sources, functions, and objectives of law, including federal and New Mexico court systems and procedures, criminal law, torts, contracts, and sales, and Uniform Commercial Code. Restricted to: Community College campuses only.
- BMGT 232. Personal Finance** 3 cr.  
Budgeting, saving, credit, installment buying, insurance, buying vs. renting a home, income tax statement preparation, investment, and estate disposal through will and trust. Restricted to: Community College campuses only.
- BMGT 233. Law and Banking** 3 cr.  
Basic commercial law as it relates to banking and bank transactions. Prerequisite(s): BMGT 112. Restricted to: Community College campuses only.
- BMGT 235. Credit Administration** 3 cr.  
Covers factors influencing and determining loan policy; methods of credit investigation and analysis, credit techniques, credit problems, and types of loans. Prerequisite(s): BMGT 112. Restricted to: Community College campuses only.
- BMGT 239. Visual Marketing Techniques** 3 cr.  
Provides a basic understanding of visual marketing and merchandising techniques. The importance of effective presentation of a store and its merchandise is covered, as is line, balance and artistic display. Restricted to: Community College campuses only.
- BMGT 240. Human Relations** 3 cr.  
Human interactions in business and industrial settings. Motivation and learning experiences as related to problems of the worker and supervisor. Practical applications of human behavior. Prerequisite(s): CCDE 105N or higher or BOT 105 or higher. Restricted to: Community College campuses only.
- BMGT 242. Stock Market Fundamentals** 3 cr.  
Understanding the stock market and other financial markets is important for success as an individual investor. This course teaches the fundamentals of the stock market and how financial instruments are bought and sold. Restricted to: Community Colleges only.
- BMGT 244. Personal Stock Portfolio Analysis** 3 cr.  
Analyzing stock portfolios to determine value, potential growth and worth is an important skill for entrepreneurs and investors. Various techniques are taught that assist in evaluating stock value and determining which meet individual investment goals. Restricted to: Community Colleges only.
- BMGT 245. Bank Investments** 3 cr.  
Covers nature of bank investments, relationship of investment management to other functional areas of the bank, and factors that affect investment strategies and decisions. Prerequisite(s): BMGT 112 or consent of instructor. Restricted to: Community College campuses only.
- BMGT 248. Introduction to Quality Management** 3 cr.  
Introductory practices of total quality management practices aimed at all levels of an organization to continually improve performance to include competitiveness in today's business world. Restricted to: Community College campuses only.
- BMGT 250. Diversity in the Workplace** 3 cr.  
Concepts of culture, diversity, prejudice, and discrimination within the domestic workforce/society. Prerequisite(s): BMGT 110. Restricted to: Community College campuses only.



- BMGT 255. Special Topics II** 1-3 cr.  
Specific subjects to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits. Restricted to: Community College campuses only.
- BMGT 258. Cash, Inventory, and Credit Control** 3 cr.  
Cash and inventory control and management; credit management. Restricted to: Community colleges.
- BMGT 259. Budget and Cost Control** 3 cr.  
Standard costs, variable costing, absorption costing, formal budgeting process, responsibility accounting for cost and profit centers, inventory management techniques, risk adjusted capital budgeting, cash management, credit management, internal checks. Consent of instructor required. Prerequisite(s): Consent of instructor. Restricted to: Community College campuses only.
- BMGT 260. Real Estate Practice** 3 cr.  
This course is a requirement for licensure in real estate for the state of New Mexico. Topics covered include: real estate finance, settlement, foreclosure, federal taxation, valuation and appraisal, land descriptions and math skills. These topics are requirements of the New Mexico Real Estate Commission. Restricted to: Community Colleges only.
- BMGT 261. Real Estate Appraisal** 3 cr.  
Principles and techniques of residential real estate appraisal. Not designed to train individuals as independent fee appraisers. Restricted to: Community College campuses only.
- BMGT 262. Commercial Property Management** 3 cr.  
Managing commercial property requires knowledge of marketing, advertising, regulatory controls, financial arrangements, and legal issues. This course addresses all aspects of managing commercial properties. Consent of instructor required. Restricted to: Community Colleges only.
- BMGT 263. Real Estate Sales Techniques** 3 cr.  
Improvement of sales techniques; the selling process, negotiation skills, objection handling and closing, business planning, goal setting, and effective application of marketing techniques. Restricted to: Community College campuses only.
- BMGT 264. Real Estate Law** 3 cr.  
This course is a requirement for licensure in real estate for the state of New Mexico. Topics covered include: ownership of real estate, real estate brokerage relationships, contracts, environmental concerns and federal laws that affect real estate. These topics are requirements of the New Mexico Real Estate Commission. Restricted to: Community Colleges only. Crosslisted with: PL S 264
- BMGT 265. Real Estate Finance** 3 cr.  
Financing real property, the money market, sources and cost determinants of mortgage money, financial leverage, value of existing mortgages in relation to the current market, and purchaser qualification. Restricted to: Community College campuses only.
- BMGT 266. Commercial and Industrial Development** 3 cr.  
Managing commercial property requires knowledge of marketing, advertising, regulatory controls, financial arrangements, and legal issues. This course addresses all aspects of managing commercial properties. Consent of instructor required. Restricted to: Community Colleges only.
- BMGT 267. Commercial Property Appraisal and Evaluation** 3 cr.  
Evaluation and financial appraisal of commercial real property preparatory to the sales process is an important skill for real estate developers and managers. Information concerning land and building evaluation will be covered. Standard Techniques for valuation and commercial sites will be presented. Consent of instructor required. Restricted to: Community colleges only.
- BMGT 268. Real Estate Broker's Basic Course** 3 cr.  
State of New Mexico specific criteria that apply to real estate licensure: purchase agreements, listing agreements, New Mexico Rules and Regulations, and landlord tenant legislation. Prerequisite(s): BMGT 260 & BMGT 264. Restricted to: Community College campuses only.
- BMGT 269. Financial Lending Practices for Development Projects** 3 cr.  
This course describes the functions of the global financial marketplace emphasizing their interactions and interconnectedness. Lending practices and their impact on development and growth are discussed. Consent of instructor required. Restricted to: Community Colleges only.
- BMGT 270. Urban Development and Renewal** 3 cr.  
This course describes the basic functions and considerations for planners and developers when undertaking urban development and renewal projects. Attention is given to environmental, social, and economic factors. Consent of instructor required. Restricted to: Community College campuses only.
- BMGT 271. Practical Applications for Microcomputers in Business** 1-3 cr.  
Owner/manager approach to use of microcomputers: systems design, software, business applications such as inventory, balance sheets, accounts receivable. Hands-on experience. May be repeated for a maximum of 6 credits under different subtitles. Preference given to BMGT majors. Prerequisite(s): C S 110, ACCT 251 and BMGT 216. Restricted to: Community College campuses only.
- BMGT 272. E-Commerce Operations** 3 cr.  
Introduces the many forms of e-commerce and emerging technologies that will impact the businesses of tomorrow. Prerequisite(s): OECS 105, CS 110G or BCIS 110G. Restricted to: Community College campuses only.
- BMGT 273. International Hotel and Tourism Management** 3 cr.  
Managing hotel properties in the international arena. Developing and operating tourist venues and facilities catering to internal and external visitors. Challenges of property development in an international setting. Consent of instructor required. Restricted to: Community Colleges only.
- BMGT 274. Small Business Planning and Development** 3 cr.  
Teaches the skills to effectively conceive, plan and open a business. Initial course in a series aimed at preparing individuals to start and run their own business. Restricted to: Community colleges.
- BMGT 275. Small Business Planning** 3-4 cr.  
How to start a small business based on a formal business plan. Includes feasibility study and legal requirements. Restricted to: Community College campuses only.
- BMGT 276. Small Business Advanced Business Plan Development** 3 cr.  
Preparing a detailed business plan as the first step in creating a successful business. Restricted to: Community colleges.
- BMGT 277. Small Business Management** 3 cr.  
Study of the principles, advantages, and problems of owning or operating a small business. Location, capital, marketing, control, and sales promotion. Prerequisite(s): BMGT 110. Restricted to: Community College campuses only.
- BMGT 278. Sustainable Real Estate Development** 3 cr.  
The awareness of environmental and economic sustainability in project development and planning is an important aspect of the developer's role in the 21st century. The ability to design projects that consider multiple stakeholders and address environmental concerns is addressed in this course. Restricted to: Dona Ana campus only.
- BMGT 280. Introduction to Human Resources** 3 cr.  
Personnel functions encompassing job analysis, recruitment, selection, training, appraisals, discipline, and terminations. Prerequisite(s): BMGT 110. Restricted to: Community College campuses only.
- BMGT 282. Introduction to International Business Management** 3 cr.  
Overview of the social, economic and cultural environment of international business transactions. Prerequisite(s): BMGT 110. Restricted to: Community College campuses only.
- BMGT 285. Introduction to Manufacturing Operations** 3 cr.  
Introduction to issues related to manufacturing, including an overview of the production function, product design and development, location, layout, forecasting, planning, purchasing, materials/inventory, and quality management. Prerequisite(s): BMGT 110 and BMGT 140. Restricted to: Community College campuses only.
- BMGT 286. Introduction to Logistics** 3 cr.  
Overview on the planning, organizing, and controlling of transportation, inventory maintenance, order processing, purchasing, warehousing, materials, handling, packaging, customer service standards, and product scheduling. Restricted to: Community College campuses only.
- BMGT 287. Introduction to Export/Import** 3 cr.  
Procedures and documentation for exporting and importing products. Emphasis on NAFTA regulations and other U.S. border operations crossings. Prerequisite(s): BMGT 110 and BMGT 282. Restricted to: Community College campuses only.
- BMGT 290. Applied Business Capstone** 3 cr.  
Refines skills and validates courses taken in BMGT program. Business simulations, case studies and projects used to test and improve business practices. Student must be within 25 credits of graduation. Prerequisite(s): BMGT 110, BMGT 140, and BMGT 240. Restricted to: Community colleges.
- BMGT 298. Independent Study** 1-3 cr.  
Individual studies directed by consenting faculty with prior approval of department chair. Maximum of 6 credits may be earned. Prerequisite(s): Sophomore standing with 3.0 GPA. Restricted to: Community College campuses only.



**BOT- BUSINESS OFFICE TECHNOLOGY**

- BOT 101. Keyboarding Basics** 3 cr. (2+2P)  
Covers correct fingering and mastery of the keyboard to develop skillful operation. Formatting basic business letters, memos, and manuscripts.
- BOT 102. Keyboarding: Document Formatting** 3 cr. (2+2P)  
Designed to improve keyboarding speed and accuracy; introduce formats of letters, tables and reports. A speed and accuracy competency requirement must be met. Prerequisite: BOT 101 or consent of instructor.
- BOT 105. Business English I** 3 cr.  
Training and application of the fundamentals of basic grammar, capitalization and sentence structure (syntax).
- BOT 106. Business Mathematics** 3 cr. (2+2P)  
Mathematical applications for business, including training in the touch method of the 10-key calculator. Prerequisite: CCDM 103N or adequate score on math placement exam.
- BOT 109. Business English II** 3 cr.  
Training and application of the fundamentals of punctuation, numbers, basic writing and editing skills. Prerequisite: C or better in BOT 105.
- BOT 110. Records Management** 3 cr.  
Principles, methods and procedures for the selection, operation and control of manual and automated records systems.
- BOT 120. Accounting Procedures I** 3 cr. (2+2P)  
Business accounting principles and procedures. Use of special journals, cash control, and merchandising concepts. Reports for sole proprietorships.
- BOT 121. Accounting Procedures II** 3 cr. (2+2P)  
Continuation of BOT 120, emphasizing accounting principles and procedures for notes and interest, depreciation, partnerships and corporations, cash flow and financial statement analysis. Prerequisite: BOT 120.
- BOT 135. Keyboarding Technique Review** 3 cr.  
Emphasis on improving keyboarding speed and accuracy. Prerequisite: BOT 101 or equivalent.
- BOT 140. Payroll Accounting** 3 cr. (2+2P)  
Payroll procedures including payroll tax forms and deposits. Prerequisite: BOT 120 or consent of instructor.
- BOT 150. Medical Terminology** 3 cr.  
Understanding of the basic elements of medical words. Use of medical abbreviations. Same as NURS 150 and OEHO 120.
- BOT 158. Advanced Medical Office Terminology** 3 cr. (2+2P)  
Builds upon the concepts introduced in Medical Terminology providing greater understanding of how to properly use and apply medical terminology in various health fields. Emphasis will be on terminology used in medical records and procedures, medical coding, and medical transcription. Current medical practice, technological changes in medicine, creating medical documents, and pharmacology will also be covered. Prerequisites: OEHO 120 or NURS 150 or BOT 150.
- BOT 170. Office Communications in Spanish I** 3 cr.  
Develop oral and written communications skills of native or near-native speakers of Spanish. The student will learn basic letter writing skills, customer service techniques, and telephone etiquette in Spanish. Prerequisite: BOT 101 or basic computer keyboarding skills and native or near-native Spanish-speaking ability.
- BOT 171. Office Communications in Spanish II** 3 cr.  
Develop oral and written communications skills of native or near-native speakers of Spanish. Emphasis placed on learning the office assistant's role within the office environment. Compose complex business correspondence and learn to make international travel arrangements. Prerequisite: BOT 101 or BOT 170.
- BOT 190. Career Exploration** 1 cr.  
Assists students in making career path choices by presenting overviews of the duties and expectations of support staff employed in legal, medical, accounting, and general offices. Includes instructor presentations, guest speakers, local office visits, advising workshop, and degree plan preparation.
- BOT 191. Taking Minutes & Proofreading** 3 cr.  
Preparation and practice producing minutes suited for different meeting types and purposes. Provides strategies to prepare for meetings, to record proceedings, and to transcribe minutes while incorporating proofreading skills practice. Topics include legal requirements, meeting types, minute formats, and duties/expectations of the minute taker and the meeting chair. Graded: S/U. Prerequisite(s): BOT 109 or consent of instructor. Restricted to: Community Colleges only.
- BOT 202. Keyboarding Document Production** 3 cr. (2+2P)  
Further development of keyboarding speed and accuracy. Production of complex letters, memos, tables, reports and business forms. A speed and accuracy competency requirement must be met. Prerequisites: BOT 102 and BOT 109, or consent of instructor.
- BOT 203. Office Equipment and Procedures I** 3 cr. (2+2P)  
Office organization, telephone techniques, equipment and supplies, handling meetings, human relations, mail procedures, and travel. Prerequisites: BOT 213 or CS 110G or consent of instructor.
- BOT 204. Office Equipment and Procedures II** 3 cr. (2+2P)  
A continuation of BOT 203 with advanced study of office practices. Prerequisite: BOT 203. Corequisites: BOT 209, COMM 253G/265G, or consent of instructor.
- BOT 205. Microcomputer Accounting I** 3 cr. (2+2P)  
Introduction to automated accounting systems on microcomputers. Prerequisite: working knowledge of computers and accounting or consent of instructor.
- BOT 206. Microcomputer Accounting II** 3 cr. (2+2P)  
Microcomputer accounting applications, integrating spreadsheets, word processing, graphics, and database. Prerequisites: BOT 121 and OECS 215, or consent of instructor.
- BOT 207. Machine Transcription** 3 cr. (2+2P)  
Creating office documents using transcribing equipment and microcomputer software. Emphasis on proofreading, editing and grammar. Prerequisites: minimum keyboarding of 45 wpm and C or better in BOT 105 or BOT 109 or equivalent and BOT 211 or BOT 213.
- BOT 208. Medical Office Procedures** 3 cr. (2+2P)  
Records and procedures as applicable to medical offices. Prerequisites: BOT 109, BOT 211, and OEHO 120.
- BOT 209. Business and Technical Communications** 3 cr.  
Effective written communication skills and techniques for career success in the work place. Composition of letters, memos, short reports, forms, and proposals, and technical descriptions and directions. Prerequisites: ENGL 111G and computer keyboarding ability or consent of instructor.
- BOT 211. Information Processing I** 3 cr. (2+2P)  
Defining and applying fundamental information processing concepts and techniques using the current version of leading software. Prerequisites: Keyboarding proficiency as demonstrated through completion of BOT 122, BOT 123, and BOT 124 or BOT 101 or equivalent. May be repeated for a maximum of 6 credits under different subtitles listed in the Schedule of Classes.
- BOT 213. Word Processing I** 3 cr. (2+2P)  
Operation and function of a word processor. Specific equipment to be announced in the Schedule of Classes. Prerequisite: BOT 101 or keyboarding proficiency as demonstrated through completion of BOT 122, BOT 123, and BOT 124 or equivalent.
- BOT 214. Word Processing II** 3 cr. (2+2P)  
Advanced operation and functions of a word processor. Specific equipment to be announced in the Schedule of Classes. Prerequisite: BOT 213 or consent of instructor.
- BOT 215. Spreadsheet Applications** 1-3 cr.  
Use of spreadsheets to include graphics and business applications. Same as OECS 215. May be repeated under different subtitles listed in the Schedule of Classes.
- BOT 217. Powerpoint Presentation** 3 cr.  
Comprehensive, hands-on approach to learning and applying basic and advanced features of PowerPoint. These include text enhancements, objects, fills, colors, animation, charts, sound, video, and hyperlinks. Students demonstrate appropriate audience and communication tools to deliver presentations. Prerequisites: BOT 211 or ability to demonstrate keyboarding and Windows proficiency.
- BOT 218. Information Processing II** 3 cr. (2+2P)  
Advanced information processing techniques using current version of leading software. Prerequisite: BOT 211 or consent of instructor. May be repeated for a maximum of 6 credits.
- BOT 220. Internship in Business Office Technology** 2 cr.  
Experience in a supervised office position. Student must work at least eight hours per week. Prerequisites: sophomore standing and consent of instructor. May be repeated for a maximum of 4 credits.
- BOT 221. Cooperative Experience I** 1-3 cr.  
Student employed at approved work site; supervised and rated by employer and instructor. Each credit requires specified number of hours of on-the-job work experience. Prerequisite: consent of instructor. Graded S/U. Restricted to BOT majors.

- BOT 222. Cooperative Experience II** 1-3 cr.  
Continuation of BOT 221. Prerequisites: BOT 221 and consent of instructor. Graded S/U.
- BOT 223. Medical Transcription I** 3 cr. (2+2P)  
Introductory machine transcription for the medical office using medical terminology. Prerequisites: NURS 150 or OEHO 120 or BOT 150, and BIOL 101G/L or OEHO 100 or consent of instructor.
- BOT 225. Medical Transcription II** 3 cr. (2+2P)  
Study of machine transcription for the medical office using medical terminology. Continuation of BOT 223. Prerequisite: BOT 223.
- BOT 228. Medical Insurance Billing** 3 cr.  
Overview of the insurance specialists role and responsibilities. Emphasis on diagnostic and procedural coding and the claims processing cycle. Prerequisite: NURS 150 or OEHO 120 or BOT 150 and OEHO 100 or BIOL 101G/L and BOT 208 or consent of instructor. May be repeated for a maximum of 6 credits.
- BOT 233. Advanced Medical Transcription** 3 cr. (2+2P)  
Builds upon the concepts introduced in Medical Transcription providing greater understanding of how to produce advanced reports of physician dictation with increasing speed and accuracy. Emphasis will be on proof-reading and editing of operative reports, patient history and physicals, office notes, labor and delivery reports, consultation reports, discharge summaries, and other medical reports. Prerequisite(s): BOT 223. Restricted to: All Community Colleges.
- BOT 239. Personal Development** 3 cr.  
Development of a marketable, employable office systems person, to include interview, voice, manners, and apparel.
- BOT 240. Introduction to Individual Taxation** 3 cr.  
Overview of Individual Federal Taxation; awareness of tax problems pitfalls and planning opportunities; focus on individual personal financial concerns and tax planning. One semester of accounting principles/procedures is recommended.
- BOT 241. Auditing and Business Issues** 3 cr.  
Introduction to basic auditing concepts, the purpose for the auditing process, and requirements of persons assisting with the audit process. The course will also deal with issues of business law including contracts, sales, torts, strict liability, and business ethics. Prerequisite(s): BOT 120. Restricted to: Community Colleges only. Restricted to BOT majors.
- BOT 244. Tax Preparation** 3 cr.  
Introduces basic federal and state tax codes for preparing individual income tax returns. Emphasis on use of tax software. Prerequisite: key-boarding proficiency.
- BOT 246. Tax Recertification** 1 cr.  
Review changes in the tax code and tax software for preparing federal and state individual income tax returns. Prerequisite: BOT 244. May be repeated for a maximum of 6 credits.
- BOT 247. Civic Involvement in Tax Preparation** 1-3 cr.  
Prepare individual tax returns applying current tax code. Each credit requires specific number of volunteer hours at a designated New Mexico Tax Coalition site. Prerequisite(s): BOT 246. Restricted to: Alamogordo campus, Carlsbad campus, Dona Ana campus, Grants campus.
- BOT 248. Medical Coding I** 3 cr. (2+2P)  
Continuation of BOT 228. Emphasis is on the most recent revisions of ICD-9-CM. In depth study of the ICD-9/10-CM coding conventions and principles. Prerequisite: BOT 228.
- BOT 249. CPT Coding I** 3 cr.  
Introductory coding class for the medical office using the CPT coding conventions and principles. NURS 150 or OEHO 120 or BOT 150 and OEHO 100 or BIOL 101G/L.
- BOT 250. Electronic Office Systems** 3 cr. (2+2P)  
Management of the electronic office. Office use of computers, printers, fax machines, copiers, and scanner concepts will be covered. Prerequisite: BOT 211.
- BOT 253. Advanced Medical Transcription** 3 cr.  
Builds upon the concepts introduced in Medical Transcription providing greater understanding of how to produce advanced reports of physician dictation with increasing speed and accuracy. Emphasis will be on proof-reading and editing of operative reports, patient history and physicals, office notes, labor and delivery records, consultation reports and letters, outpatient records, discharge summaries, and other medical reports. Prerequisite: BOT 223. Community Colleges only.
- BOT 255. Special Topics** 1-4 cr.  
Specific subjects to be announced in the Schedule of Classes.
- BOT 258. Medical Coding II** 3 cr. (2+2P)  
Continuation of BOT 228, and Medical Coding I. Emphasis is on the most recent revision of ICD-10-CM, CPT-4, and DSM-IV. Continued study in the ICD-9/10-CM coding conventions and principles and in depth the CPT-4, HCPCS, and DSM-IV coding convention and principles. Designed as a medical coding capstone course. Prerequisite(s): BOT 228 AND BOT 248. Restricted to: Alamogordo campus, Carlsbad campus, Dona Ana campus, Grants campus.
- BOT 259. CPT Coding II** 3 cr.  
Continuation of BOT 249. Emphasis on the most recent revisions of CPT coding. In depth study of CPT coding conventions and principles. Designed as a medical coding capstone course. Prerequisite: BOT 249.
- BOT 268. Health Information Systems** 3 cr. (2+2P)  
Applications of systems and policies to health information systems, functions and health care data requests such as administrative, patient registration, personal health record (PHR), lab, radiology, pharmacy, etc. Prerequisite(s): OECS 105 or C S 110; AND BOT 208. Restricted to: Alamogordo campus, Carlsbad campus, Dona Ana campus, Grants campus.
- BOT 270. Business Office Technology Capstone** 3 cr. (2+2P)  
Refines professional skills learned in the BOT program and ties all BOT coursework together. Prerequisite(s): BOT 102 or BOT 129; and BOT 120; and BOT 209 or ENGL 203G or ENGL 218G; and BOT 211 or OECS 211. Restricted to: Community Colleges only.
- BOT 298. Independent Study** 1-3 cr.  
Individual studies directed by consenting faculty with prior approval of department head. Prerequisite: sophomore standing with 3.0 GPA. May be repeated for a maximum of 3 credits.

## **BUSA- BUSINESS ADMINISTRATION AND ECONOMICS**

- BUSA 111. Business in a Global Society** 3 cr.  
Overview of the global environment of business and the development of business as an integrative, cross-disciplinary activity. Prerequisite: BCIS 110G or C S 110 or concurrent enrollment.

## **C D- COMMUNICATION DISORDERS**

- C D 221. Introduction to Communication Disorders** 3 cr.  
Basic information about speech, language, and hearing disorders; orientation to the professions of speech-language pathology and audiology.
- C D 301. Language Acquisition** 3 cr.  
Normal development of communication across the age span. Includes language sampling. Taught with C D 509. Pre/Corequisite(s): C or better in CD 221. Restricted to CD majors.
- C D 302. Professional Reasoning and Scientific Thinking** 3 cr.  
Overview of constructive thinking, problem solving, and decision making theories and strategies associated with professional reasoning and scientific thinking that are to be used academically and clinically in the transition from student to scholar to professional. Taught with C D 593. Prerequisite(s): C or better in C D 221. Restricted to CD majors.
- C D 321. Clinical Methods** 3 cr.  
Introduction to clinical methods and supervised clinical observation of speech, language, and hearing services. Prerequisite(s): C or better in C D 221, B or better in C D 301/C D 509, C D 302/C D 593 and minimum 3.0 GPA. Restricted to CD majors.
- C D 322. Anatomy and Physiology of Speech Mechanisms** 3 cr.  
Structure and function of systems underlying human speech sound production and processing including nervous, respiratory phonatory, and articulatory components. Taught with CD 502. Prerequisite(s): C or better in C D 221 and B or better CD 301/CD 509, CD 302/CD 593 and minimum 3.0 GPA. Restricted to CD majors.
- C D 323. Phonetics** 3 cr.  
The science of phonetics, including work with the International Phonetic Alphabet. Taught with C D 501. Prerequisite(s): C or better in C D 221. B or better in C D 301/C D 509, C D 302/C D 593 and minimum 3.0 GPA. Restricted to CD majors.
- C D 324. Introduction to Speech Science** 3 cr.  
Basic concepts and theories in acoustics, speech production and speech perception. Includes laboratory experience with instrumental measurement and analysis of speech systems. Taught with C D 503. Prerequisite(s): C or better in C D 221, B or better in C D 301/C D 509, C D 302/C D 593, C D 321, C D 322/C D 502, C D 323/C D 501 and minimum 3.0 GPA. Restricted to CD majors.

- C D 325. Language Disorders 3 cr.  
Bases, symptoms, etiologies, and treatment of language disorders. Includes review of normal language acquisition. Prerequisite(s): C or better in C D 221. B or better in C D 301/C D 509, C D 302/C D 593, C D 321, C D 322/C D 502, C D 323/C D 501, and minimum 3.0 GPA. Restricted to CD majors.
- C D 326. Clinical Procedures 3 cr.  
Guidelines and procedures associated with the clinical and supervisory processes. Provide opportunities to complete the supervised clinical observation requirement for participation in clinical practicum. Prerequisite(s): C or better in C D 221. B or better in C D 301/C D 509, C D 302/C D 593, C D 321, C D 322/C D 502, C D 323/C D 501 and minimum of 3.0 GPA. Restricted to CD majors.
- C D 365. Language Acquisition for Educators 3 cr.  
This course covers the development of language from birth through young adulthood. The course focuses on providing future educators with foundational knowledge of language development, delays, differences and disorders. Course content prepares educators to analyze the linguistic demands of academic course content and effective bridge gaps between students' linguistic skills and the demands of the curriculum
- C D 374. American Sign Language I 3 cr.  
Introduction to the basics of ASL including questions, commands, sentence types, time, subjects and objects, classifiers, locative case, pluralization, and temporal and distributional aspects.
- C D 375. American Sign Language II 3 cr.  
Continuation of C D 374, ASL I. Emphasis on ASL grammar, spatial referencing, detailed descriptions, and deaf culture. Features dialogues, short stories, narratives. Prerequisite: C D 374 or consent of instructor.
- C D 376. American Sign Language III 3 cr.  
Continuation of C D 375, ASL II. Focus on more complex grammatical features. Students will comprehend and generate medium length stories, narratives, and discussions including culturally significant topics. Prerequisite: C D 375. Same as C D 574 with differentiated assignments for graduate students.
- C D 421. Speech Disorders 3 cr.  
Bases, symptoms, etiologies, and clinical management of issues related to disorders of articulation, phonology, voice and resonance, and fluency. Prerequisite(s): C or better in C D 221. B or better in C D 301/C D 509, C D 302/C D 593, C D 321, C D 322/C D 502, C D 323/C D 501, C D 324/C D 503, C D 325, C D 326 and minimum 3.0 GPA. Restricted to CD majors.
- C D 422. Audiology 3 cr.  
Anatomy and physiology of the auditory system, bases of auditory disorders, and basic audiometric procedures. Prerequisite(s): C or better in C D 221. B or better in C D 301/C D 509, C D 302/C D 593, C D 321, C D 322/C D 502, C D 323/C D 501, C D 324/C D 503, C D 325, C D 326 and minimum of 3.0 GPA. Restricted to CD majors.
- C D 423. Neural Bases of Communication Disorders 3 cr.  
Study of the neuroanatomy and neurophysiology of communication and communication disorders. Includes review of the central nervous system and peripheral nervous system relationship to speech motor control, language, and hearing. Prerequisite(s): C or better in C D 221. B or better in C D 301/C D 509, C D 302/C D 593, C D 321, C D 322/C D 502, C D 323/C D 501, C D 324/C D 503, C D 325, C D 326, C D 421, C D 422 and minimum 3.0 GPA. Restricted to CD majors.
- C D 424. Aural Rehabilitation 3 cr.  
Overview of hearing aids and amplification devices including cochlear implants. Review of the bases and psychosocial aspects of hearing loss. Clinical management of hearing loss consistent with ASHA's scope of practice for SLPs. Prerequisite(s): C or better in C D 221. B or better in C D 301/C D 509, C D 302/C D 593, C D 321, C D 322/C D 502, C D 323/C D 501, C D 324/C D 503, C D 325, C D 326, C D 421, C D 422 and minimum of 3.0 GPA. Restricted to CD majors.
- C D 476. American Sign Language III 3 cr.  
Continuation of C D 375, ASL II. Focus on more complex grammatical features. Students will comprehend and generate medium length stories, narratives, and discussions including culturally significant topics. Prerequisite: C D 375.
- C D 479. Clinical Practicum 3 cr.  
Supervised speech, language, and hearing clinical practice with assigned clients at the NMSU Speech and Hearing Center. Requires attendance at the weekly clinical staff meeting. Prerequisites: C or better in C D 380/C D 503, C D 453, and C D 462, and minimum 3.0 GPA or consent of instructor. May be repeated for a maximum of 6 credits. Restricted to majors.
- C D 490. Training in Professional Teamwork 3 cr.  
Team development including critical thinking, problem solving, and decision making. Prerequisites: C or better in C D 452, C D 456, and C D 481, and minimum 3.0 GPA, or consent of instructor.
- C D 491. Selected Topics 1-6 cr.  
Individual and/or group study of selected topics. To be identified by subtitle. Prerequisite: prior arrangement with faculty. May be repeated for a maximum of 12 credits.

**C E- CIVIL ENGINEERING**

- C E 109. Computer Drafting Fundamentals 3 cr. (2+2P)  
Same as DRFT 109, E T 109, SUR 109.
- C E 141. Mathematics and Hydraulic Engineering 3 cr.  
A combination of physical, mathematical, and computer simulation models will be developed to explore topics in hydraulic engineering that are central to environmental engineering applications. Same as Math 151. Prerequisite: MATH 121G or consent of instructor.
- C E 151. Introduction to Civil Engineering 3 cr.  
Problem solving and use of computer software for civil and geological engineering applications. Corequisite(s): MATH 191.
- C E 160. Geology for Engineers 4 cr. (3+3P)  
Basic concepts of geology, earth materials, and earth processes as they relate to engineering practice.
- C E 198. Special Topics 1-3 cr.  
May be repeated for a maximum of 6 credits. Prerequisite: consent of department head.
- C E 231. Introduction to Fluid Mechanics 3 cr. (2+3P)  
Introduction to basic fluid mechanics. Prerequisite: MATH 191G. Restricted to majors.
- C E 233. Mechanics-Statics 3 cr.  
Engineering mechanics using vector methods. Prerequisites: MATH 192G and cumulative GPA of 2.0. Corequisite: PHYS 215G.
- C E 256. Environmental Engineering and Science 3 cr.  
Principles in environmental engineering and science: physical chemical systems and biological processes as applied to pollution control. Prerequisite(s): CHEM 111 and MATH 191G. Crosslisted with: E S 256
- C E 256 L. Environmental Science Laboratory 1 cr. (1P)  
Laboratory experiments associated with the material presented in C E 256. Corequisite: C E 256. Same as E S 256L.
- C E 298. Special Topics 1-3 cr.  
May be repeated for a maximum of 6 credits. Prerequisite: consent of department head.
- C E 301. Mechanics of Materials 3 cr.  
Stress, strain, and elasticity of materials. Prerequisite: C E 233.
- C E 311. Civil Engineering Materials 3 cr. (2+3P)  
Introduction to the structure, physical properties, testing and mechanical behavior of civil engineering materials and components made from these materials. Prerequisite: C E 301.
- C E 315. Determinate Structural Analysis 3 cr. (2+3P)  
Classical analysis of determinate structures; introduction to modern methods of structural analysis using computer programs. Prerequisite(s): C E 301.
- C E 330. Environmental Management Seminar I 1 cr.  
Survey of practical and new developments in environmental management field, hazardous and radioactive, waste management, and related health issues, provided through a series of guest lectures and reports of ongoing research. Restricted to: Main campus only. Crosslisted with: CH E 330, E E 330, E S 330, E T 330, I E 330, M E 330 and WERC 330
- C E 331. Hydraulic Engineering 3 cr.  
Fundamentals and theory of compressible and incompressible flow of fluids in open and closed conduits. Prerequisite: C E 231. Restricted to majors.
- C E 355V. Technology and the Global Environment 3 cr.  
A scientific basis for understanding changes in the global environment that result through the complex interactions of natural phenomena and the impacts of the activities of man. Prerequisites: junior or senior standing, and the general education requirements for math and natural sciences.
- C E 356. Fundamentals of Environmental Engineering 3 cr.  
Introduction to water treatment and water pollution and the analysis and design of selected treatment processes. Prerequisite(s): C E 256.



- C E 357. Soil Mechanics 3 cr. (2+3P)  
Engineering properties of soils, consolidation settlement, compaction, water flow through soils, geostatic stresses, soil shear strength, lateral earth pressure, and soil laboratory testing. Prerequisite(s): C E 160 or GEOL 111, and C E 301.
- C E 365. Intermediate Structural Analysis 3 cr.  
Classical analysis of indeterminate structure; introduction to matrix method of structural analysis. Prerequisite: C E 301 and C E 315. Corequisite: MATH 392.
- C E 382. Hydraulic Systems Design 3 cr.  
Engineering design of hydraulic systems, including pipe networks, open channels, regulating structures, and pumping systems. Prerequisite: C E 331.
- C E 398. Special Topics 1-3 cr.  
May be repeated for a maximum of 6 credits. Prerequisite: consent of department head.
- C E 430. Environmental Management Seminar II 1 cr.  
Survey of practical and new developments in environmental management field, hazardous and radioactive, waste management, and related health issues, provided through a series of guest lectures and reports of ongoing research. Restricted to: Main campus only. Crosslisted with: CH E 430, E E 430, E S 430, E T 430, I E 430, M E 430 and WERC 430
- C E 444. Elements of Steel Design 3 cr.  
Analysis and design of tension members, beams, columns, and bolted and welded connections. Prerequisites: C E 301 and C E 315. Corequisites: C E 311 and C E 365.
- C E 445. Reinforced Concrete Design 3 cr.  
Design and mechanics of structural reinforced concrete members. Prerequisite: C E 365. Corequisite: C E 311.
- C E 450. Engineering Economy and Law 3 cr.  
Discounted cash flows, economics of engineering projects, contracts and specifications. Prerequisite: senior standing.
- C E 450 H. Engineering Economics Honors 3 cr.  
Discounted cash flows, economics of engineering projects, contracts, and specifications. Prerequisite: senior standing and the University Honors Program.
- C E 452. Geohydrology 3 cr.  
Origin, occurrence, and movement of fluids in porous media and assessment of aquifer characteristics. Development and conservation of ground water resources, design of well fields. Prerequisite(s): C E 160 or GEOL 111G, and C E 231. Crosslisted with: E S 452 and GEOL 452.
- C E 454. Wood Design 3 cr.  
Theory and design of wood structural members and systems subjected to gravity and lateral loads. Taught every other year, alternates with CE 455, Masonry Design. Prerequisites: C E 301 and C E 315. Corequisites: C E 311 and C E 365.
- C E 455. Masonry Design 3 cr.  
Theory and design of masonry structural members and systems subjected to gravity and lateral loads. Taught every other year, alternates with C E 454, Wood Design. Prerequisites: C E 301 and C E 315. Corequisites: C E 311 and C E 365.
- C E 457. Foundation Design 3 cr. (2+3P)  
Application of principles of classical soil mechanics to the design and analysis of shallow and deep foundations and retaining structures. Prerequisite(s): C E 357.
- C E 459. Geomechanics and Rock Engineering 3 cr. (2+3P)  
Application of rock mechanics principles to the design and construction of structures in and on rock, including design of rock support systems, rock slopes and blasting/excavation techniques. Prerequisite(s): C E 357. Pre/Corequisite(s): C E 457.
- C E 460. Site Investigation 3 cr. (2+2P)  
Investigation and characterization of surficial and subsurface geologic materials and ground water for civil engineering projects. Includes exploration program, drilling and sampling, rock and soil classification and logging, groundwater monitoring, profiles, and preparation of geotechnical reports. Prerequisite(s): C E 357. Pre/Corequisite(s): C E 457.
- C E 469. Structural Systems 3 cr. (2+3P)  
Design of structural systems for building and bridges. Prerequisite: C E 444. Corequisite: C E 445.
- C E 470. Design of Municipal and Hazardous Waste Landfills 3 cr.  
Solid waste and application of geotechnical engineering principles and methods to the site selection and design of municipal and hazardous waste landfills. Prerequisite(s): C E 357 and C E 452, or consent of instructor.
- C E 471. Highway Engineering 3 cr. (2+3P)  
Highway systems design and management. Prerequisite: C E 357, STAT 371, or consent of instructor.
- C E 477. Construction Engineering 3 cr.  
Construction planning, equipment, and methods. Prerequisites: C E 357 and C E 450.
- C E 479. Pavement Analysis and Design 3 cr.  
Covers stresses and deflections in pavement layers, material characterization, flexible and rigid pavement design by AASHTO, mechanistic design, rehabilitation concepts. Taught with C E 577. Extra work required for graduate credit. Prerequisite(s): C E 357.
- C E 482. Hydraulic Structures 3 cr.  
Engineering design of water-regulating structures. Prerequisites: C E 301 and C E 382.
- C E 483. Surface Water Hydrology 3 cr.  
Hydrologic cycle and relationships between rainfall and surface water runoff. Prerequisite: C E 331 or consent of instructor.
- C E 485. Design of Earth Dams 3 cr.  
Engineering design applied to site selection, foundation inspection and treatment, hydrology and hydraulics, stability, and seepage analysis. Economic and environmental factors. Prerequisite(s): C E 357.
- C E 497. Senior Seminar 2 cr.  
Selected topics on the civil engineering profession and orientation for professional practice. Preparation for the FE exam. Corequisite: application for degree.
- C E 498. Special Topics 1-3 cr.  
Prerequisite: consent of department head. May be repeated for a maximum of 9 credits.
- C EP- COUNSELING & EDUCATIONAL PSYCHOLOGY**
- C EP 110G. Human Growth and Behavior 3 cr.  
Introduction to the principles of human growth and development throughout the life span.
- C EP 199. Academic Excellence 1-3 cr.  
Academic curriculum of excellence that includes the development of collaborative learning and student success environment, learning diverse learning styles and multiple intelligences, and developing multi-contextual academic communication styles.
- C EP 210. Educational Psychology 3 cr.  
Psychological foundations as they apply to the learner in the class room setting.
- C EP 215. The Preschool Child 3 cr.  
Survey of psychological development from conception to age five.
- C EP 240. Adolescence in School Settings 3 cr.  
Survey of psychological development during the adolescent years.
- C EP 299. Academic Excellence Classes 1-6 cr.  
Academic curriculum of excellence that includes the development of collaborative learning and student success environment, learning diverse learning styles and multiple intelligences, and developing multi-contextual academic communication styles.
- C EP 300. Human Relations Training 3 cr.  
Skills, knowledge, and sensitivity for living and working with others.
- C EP 310. Student Leadership 3 cr.  
Organizational theory, leadership styles, decision-making techniques, and communication skills with an opportunity to apply learning during class discussions.
- C EP 320. Sex Roles in Education 3 cr.  
Physiological, psychological, and political aspects of sex role socialization and the effects of these factors on personal development.
- C EP 451V. Introduction to Counseling 3 cr.  
Principles of counseling for nonmajors.
- C EP 455. Addictions Prevention and Recovery 3 cr.  
Understanding addictions process, prevention, and recovery, including biological, interpersonal and sociological influences, and intervention strategies. Taught with C EP 555.
- C EP 461. Family Guidance 3 cr.  
Systems based guidance procedures for enhancing family strengths and development, and application of family guidance procedures for prevention and remediation of problems. Taught with C EP 561.
- C EP 495. Psychology, Multiculturalism and Counseling 3 cr.  
Understanding social identities such as race, ethnicity, sexual orientation, age, social class and spirituality as it relates to psychosocial development, academic achievement and counseling.



- C EP 499. Independent Study 1-6 cr.  
Individual study directed by consenting faculty.
- C J- CRIMINAL JUSTICE**
- C J 101G. Introduction to Criminal Justice 3 cr.  
Examination of crime and justice within the broader social and cultural context of U.S. society from interdisciplinary social science perspectives. Includes critical analysis of criminal justice processes and the ethical, legal, and political factors affecting the exercise of discretion by criminal justice professionals.
- C J 199. Special Topics in Criminal Justice 1 1-3 cr.  
Specific subjects to be announced in the Schedule of Classes. May be repeated under different topics for a maximum of 6 credits.
- C J 201. Independent Study 3 cr.  
Directed, individual studies and projects. Consent of instructor required.
- C J 205. Criminal Law I 3 cr.  
Rules, principles, and doctrines of criminal liability in the United States. The historical development, limits, and functions of the substantive criminal law.
- C J 206. Criminal Law II 3 cr.  
Legal problems associated with the investigation of crime. Commencement of criminal proceedings, prosecution and defense of charges, sentencing and appeal. Prerequisite: C J 205. Community Colleges only. (Note: students completing C J 206 may not take C J 306.)
- C J 210. The American Law Enforcement System 3 cr.  
Historical and philosophical foundations of law and order. An in-depth examination of the various local, state, and federal law enforcement agencies.
- C J 221. Fundamentals of Criminal Investigation 3 cr.  
Investigation procedures from crime scene searches, collection of evidence, and case preparation. Community Colleges only. (Note: students completing C J 221 may not take C J 321.)
- C J 230. Introduction to Corrections 3 cr.  
Development of correctional philosophy, theory, and practice. Instructional and non-institutional alternatives available in the corrections process.
- C J 250. Courts and the Criminal Justice System 3 cr.  
Structures and functions of American courts. Roles of attorneys, judges, and other court personnel; operation of petit and grand juries, trial and appellate courts.
- C J 293. Field Experience in Criminal Justice 3 or 3-6 cr.  
Field experience in a public criminal justice agency or equivalent private sector organization. Supervised internship experience, conferences, and observations. Prerequisites: C J 101G, prior arrangement and consent of instructor and a GPA of 2.0 or better in major. Restricted to majors. Community Colleges only.
- C J 300. Introduction to Criminal Justice Research 3 cr.  
Overview and evaluation of criminal justice research. Selection of research topics, methods of data selection and collection, analysis techniques, and presentation of findings. Prerequisite: restricted to majors or consent of instructor.
- C J 301. Advanced Research Methods 3 cr.  
Study of selected quantitative and qualitative skills and their application to criminal justice research. Prerequisite: Restricted to majors or consent of instructor.
- C J 306. Criminal Procedural Law 3 cr.  
Legal analyses of the rights of criminal defendants; legal duties and responsibilities of criminal justice personnel in the processing of criminal defendants. Prerequisite: Restricted to majors or consent of instructor.
- C J 307. Law of Evidence 3 cr.  
Evidentiary rules and concepts and their application in a criminal trial. Prerequisite: Restricted to majors or consent of instructor.
- C J 321. Criminal Investigation and Intelligence 3 cr.  
Principles of criminal investigation and intelligence production; processing cases from complaint through crime scene search, identification and collection of evidence, interviewing and interrogation, and case preparation for courts. Prerequisite: restricted to majors or consent of instructor.
- C J 322. Organized Crime 3 cr.  
Study of national and international criminal organizations and organized crime core groups. Examination of criminal and legitimate enterprises of organized criminal syndicates. Study of tactics to combat organized crime. Current policy implications. Prerequisite: restricted to majors or consent of instructor.
- C J 331. American Correctional Institutions 3 cr.  
Structure, organization, and operations of United States jails and prisons. Overview of correctional standards and classification systems, emphasizing current theory and practice. Prerequisite: restricted to majors or consent of instructor.
- C J 332. Correctional Law 3 cr.  
Federal and state laws and rules of post-conviction procedures; rights of the convicted related to sentencing, appeals, clemency, and restoration of rights. Prerequisite: restricted to majors or consent of instructor.
- C J 333. Juvenile Corrections 3 cr.  
Development and implementation of juvenile facilities and community programs. Effectiveness of current corrections practices. Restricted to majors.
- C J 345. Victimology 3 cr.  
Study of risk factors in crime victimization, the impact of crimes upon victims, and the role of the victim in the criminal justice system. Prerequisite: restricted to majors or consent of instructor.
- C J 346. Psychology and the Justice System 3 cr.  
Analysis of psychological underpinnings of criminal behavior and the implications of these psychological principles for criminal justice policy. Restricted to majors.
- C J 347. Sex Crimes 3 cr.  
Dynamics of sex crimes for victims and offenders, plus consideration of the legal and correction systems' response to sex crimes. Restricted to majors.
- C J 348. Serial Killers 3 cr.  
Overview and critical assessment of serial homicide and its relevance for contemporary U.S. society. Focus on factors influencing definitions and cultural understanding of serial homicide. Prerequisite(s): 60 credit hours.
- C J 360. The Juvenile Justice System 3 cr.  
History, development, and philosophy behind a separate juvenile justice system. Role of the juvenile court, evaluation of juvenile law and procedure, and the processing of juvenile offenders. Prerequisite: restricted to majors or consent of instructor.
- C J 380. Introduction to Terrorism 3 cr.  
Overview of the phenomenon of terrorism, psychological and sociological theories of terrorism, and various contemporary governmental policies.
- C J 391. Special Readings in Criminal Justice 1-3 cr.  
Individually chosen subject areas not readily available in other courses. Prerequisites: at least a 2.5 GPA and consent of instructor. May be repeated for a maximum of 6 credits under different subtitles. Restricted to majors.
- C J 393. Internship in Criminal Justice 1-12 cr.  
Field experience in a local, state, or federal criminal justice or private security agency. Includes orientation, observation, conferences, and work experience. Credits limited to six if student has taken C J 293. Prerequisites: consent of instructor and GPA of 2.5 or better. May be repeated for a maximum of 12 credits. Restricted to majors. Graded S/U.
- C J 399. New Mexico Law 3 cr.  
Same as GOVT 399, JOUR 399, SOC 399, and HIST 399.
- C J 400. Practicum in Criminal Justice Research 1-3 cr.  
Execution of a research project in criminal justice; nature and planning of a project, sampling design, data collection and analysis, and research reporting. Prerequisite: 2.5 GPA and consent of instructor. May be repeated for a maximum of 6 credits. Restricted to majors.
- C J 405. Juvenile Courts and Law 3 cr.  
History, development, and current status of juvenile courts. Legal status of juveniles in court and constitutional protections afforded them. Restricted to majors.
- C J 410. Criminal Justice Administrative Systems 3 cr.  
Administrative structures in criminal justice agencies and institutions; relationship of administrative structures to practical police, courts, and corrections problems. Prerequisite: restricted to majors or consent of instructor.
- C J 411. Introduction to the Nature of Crime 3 cr.  
Defining and measuring crime, crime causation, and the criminal behavior system, and their linkage to criminal justice policies, procedures, and practices. Prerequisite: C J 101G. Restricted to majors or consent of instructor.
- C J 412. Introduction to Security Technology and Loss Prevention 3 cr.  
Private and public responses to security problems, including employee theft, perimeter security, and domestic or foreign terrorism; reviews related law and management practices.
- C J 413. Nature of Youth Crime 3 cr.  
Examines images of youth crime and violence; official sources of information on prevalence and nature of youth crime. Explanations of youth crime at individual, group, and social structural levels. Restricted to majors.

- C J 414. Race, Crime and Justice 3 cr.  
Historical and contemporary analysis of the relationship between race and crime in the United States with emphasis upon human equality and fairness. Overview of racial and ethnic social categorizations and how they impact law and order.
- C J 416. Global Perspectives on Youth and Drug Use 3 cr.  
Overview of global drug use among young people, comparative legal structures, formal and informal responses. Restricted to CJ, ANTH, GOVT, SOC, WS, SWK majors.
- C J 417. Drugs In Our World 3 cr.  
Comparative analysis of patterns and theories of drug use, formal government mitigation strategies.
- C J 418. Documentary Production Stories of Justice I 3 cr.  
Introductory examination of documentary genre. Survey of documentary film making theory and history. Creation of proposal for student documentary project. Restricted to C J, ANVE, and DFM majors.
- C J 419. Documentary Productions Stories of Justice II 3 cr.  
Follow up to C J 418. Students shoot, edit, and publish work from proposal of C J 418. Prerequisite(s): C J 418. . Restricted to ANVE, DFM, and C J majors. Crosslisted with: CMI 319
- C J 420. Girls, Women & Crime 3 cr.  
Critical social science analysis of concepts of violence and justice as experienced by women impacted by the criminal justice system. Restricted to C J / W S majors. Crosslisted with: W S 420
- C J 424. Forensic Law 3 cr.  
Overview of the rules and issues related to the use of scientific information in the legal process. Prerequisite: C J major or consent of instructor. Restricted to majors.
- C J 425. Issues in Ethics, Law, and Criminal Justice 3 cr.  
Examination of the key ethical and decision-making dilemmas facing professionals working in the field of law and criminal justice. Prerequisite: restricted to majors or consent of instructor.
- C J 426. Race and Environmental Justice 3 cr.  
Analysis of concepts of justice and social justice responses across the 20th and 21st centuries to environmental degradation affecting communities of differing racial and ethnic backgrounds. Prerequisite(s): 60 credit hours.
- C J 427. Race and Crime in Film 3 cr.  
Critical analysis of film where messages relating race and crime are present, with emphasis on how this imagery informs problem definition, policies, and practice within the criminal justice system. Prerequisite(s): 60 credit hours.
- C J 432. Issues in Criminal Justice 3 cr.  
Seminar on problems and conflicts encountered in major criminal justice issues. Topics announced in the Schedule of Classes. May be repeated for unlimited credits under different subtitles.
- C J 434. Probation, Parole, and Community Corrections 3 cr.  
Structure, organization, and operation of probation, parole, and other community-based correctional programs in the U.S. Overview of historical and recent trends in the supervision of offenders in the community and in the development of alternatives to incarceration. Analysis of issues related to community correctional policies and practices. Restricted to majors.
- C J 435. Political Penology 3 cr.  
Comparative analysis of incarceration and sanctions as punishment for crimes of conscience, religious intolerance, and dissidence.
- C J 440V. Comparative Criminal Justice Systems 3 cr.  
Cross-national study of selected Western and non-Western legal systems. Comparison of structures and functions of police, court systems, and corrections in different systems.
- C J 449. Senior Seminar 3 cr.  
Problems and conflicts encountered in major attempts to control crime. Prerequisite: all required C J courses must be completed. Restricted to majors.
- C J 450. Crime, Justice and Society 3 cr.  
Critical analysis of dynamic relationship between the U.S. eco-political-socio structure, its criminal justice system, and consequent policies and practices. Prerequisite(s): 60 credit hours.
- C J 451. Border Violence and Justice 3 cr.  
Critical analysis of violence and systems of justice along border regions. Examines causes and correlates of violence experienced by those living in border regions and the social responses to that violence.
- C J 452. Upper World Crime 3 cr.  
Corporate crime, white collar crime and political abuse and corruption; executive and corporate criminal behavior, and violations of the public trust by elected and appointed officials. Prerequisite: restricted to majors or consent of instructor.
- C J 453. Women and Justice 3 cr.  
Critical analysis of the impact of the criminal justice system, race and class upon the lives of women. Restricted to majors.
- C J 454. Human Trafficking 3 cr.  
Study of global human trafficking, its causes and costs, and mitigation strategies. Restricted to CJ, GOVT, SOC, W S, S WK majors.
- C J 455. Feminist Research Methods 3 cr.  
Feminist research practices and methodologies utilized in various disciplines. Definitions of research, what constitutes valid inquiry, how research can be feminist, and what it means to do interdisciplinary work. Same as W S 455.
- C J 480. Criminal Justice Planning and Crime Analysis 3 cr.  
Basic working tools in gathering data for the purpose of developing criminal justice plans and programs. Planning criteria, program implementation strategies, and evaluation requirements. Prerequisite: restricted to majors or consent of instructor.
- C J 481. Hate Crimes and Domestic Terrorism 3 cr.  
Overview of religious and political extremism in the U.S., with a particular focus on the roots and practices of extremist groups and their doctrines. Prerequisite: CJ 380 or consent of instructor.
- C J 482. Transnational Terrorism 3 cr.  
Overview of international terrorism and its sociological, political, historical, and religious causes, with a particular focus on current terrorism.

### C S - COMPUTER SCIENCE

- C S 110. Computer Literacy 3 cr.  
Evolution and application of computers; economic and social implications; introduction to programming on microcomputers.
- C S 117. Introduction to Computer Animation 3 cr.  
Introductory course for learning to program with computer animation as well as learning basic concepts in computer science. Students create interactive animation projects such as computer games and learn to use software packages for creating animations in small virtual worlds using 3D models. Recommended for students considering a minor/major in computer science or simply interested in beginning computer animation or programming.
- C S 157. Topics in Software Programming and Applications 3 cr. (2+2P)  
Current topics in computer programming and software applications. Topic announced in the Schedule of Classes. May be repeated if subtitle is different.
- C S 167. C Programming 3 cr. (2+2P)  
Programming in the C language. Prerequisite: MATH 121G.
- C S 171G. Introduction to Computer Sciences 4 cr. (3+2P)  
Computers are now used widely in all area of modern life. This course provides understanding of the theoretical and practical foundations for how computers work, and provides practical application and programming experience in using computers to solve problems efficiently and effectively. The course covers broad aspects of the hardware, software, and mathematical basis of computers. Weekly labs stress using computers to investigate and report on data-intensive scientific problems. Practical experience in major software applications includes an introduction to programming, word processing, spreadsheets, databases, presentations, and Internet applications. Prerequisite(s): MATH 120.
- C S 172. Computer Science I 4 cr. (3+2P)  
Computational problem solving; problem analysis; implementation of algorithms. Recursive structures and algorithms. Prerequisite(s): MATH 190G.
- C S 177. C++ Programming 3 cr. (2+2P)  
Introduction to object-oriented programming in the C++ language. Prerequisite: C S 167 or previous programming experience in C or consent of instructor.
- C S 187. Java Programming 3 cr. (2+2P)  
Programming in the Java language. Prerequisite: MATH 121G. Same as BCS 122.
- C S 209. Special Topics. 1-3 cr.  
May be repeated for a maximum of 12 credits.

- C S 271. Object Oriented Programming 4 cr. (3+2P)  
Introduction to problem analysis and problem solving in the object-oriented paradigm. Practical introduction to implementing solutions in the C++ language. Hands-on experience with useful development tools. Prerequisites: At least a C in C S 172 or E E 161.
- C S 272. Introduction to Data Structures 4 cr. (3+2P)  
Design, implementation, use of fundamental abstract data types and their algorithms: lists, stacks, queues, deques, trees; imperative and declarative programming. Internal sorting; time and space efficiency of algorithms. Prerequisites: at least a C in C S 172.
- C S 273. Machine Programming and Organization 4 cr. (3+2P)  
Computer structure, instruction execution, addressing techniques; programming in machine and assembly languages. Prerequisite: at least a C in C S 172 or E E 161.
- C S 278. Discrete Mathematics for Computer Science 4 cr. (3+2P)  
Logical connectives, sets, functions, relations, graphics, trees, proofs, induction, and application to computer science. Prerequisite: at least C in C S 172. Same as MATH 278.
- C S 310. Advanced Computer and Internet Literacy 3 cr. (2+2P)  
Advanced computer understanding and application use, including data sharing, hardware features, performance checking, networking, scripting, and automation. Advanced Internet content development, including graphics, XML, Flash, scripting, and applets. Prerequisites: Either C S 110, C S 171G, HON 111, BCIS 110, AG E 250G, I E 151, or ET 120.
- C S 370. Compilers and Automata Theory 4 cr. (3+2P)  
Methods, principles, and tools for programming language processor design; basics of formal language theory (finite automata, regular expressions, context-free grammars); development of compiler components. Prerequisites: at least a C in C S 271, C S 272, C S 273, and C S 278.
- C S 371. Software Development 4 cr. (3+2P)  
Software specification, design, testing, maintenance, documentation; informal proof methods; team implementation of a large project. Prerequisite: at least a C in C S 271 and C S 272.
- C S 372. Data Structures and Algorithms 4 cr. (3+2P)  
Introduction to efficient data structure and algorithm design. Order notation and asymptotic run-time of algorithms. Recurrence relations and solutions. Abstract data type dynamic set and red-black trees. Classic algorithm design paradigms: divide-and-conquer, dynamic programming, greedy algorithms. Prerequisites: at least a C in CS 272 and C S 278.
- C S 409. Independent Study 1-3 cr.  
Faculty supervised investigation, to culminate in a written report. Prerequisite: written agreement with faculty supervisor. May be repeated to a maximum of 6 credits.
- C S 420. Analysis of Algorithms 3 cr.  
Time and space complexity of algorithms; techniques for design and analysis of correct and efficient algorithms; dynamic programming, greedy methods, amortized analysis; classic graph algorithms - depth and breadth first search, minimum spanning trees, and shortest paths. Prerequisite: C or better in C S 372.
- C S 448. Senior Project 4 cr.  
Capstone course in which C S majors work in teams and apply computer science skills to complete a large project. Prerequisites: senior standing and consent of instructor.
- C S 449. Senior Thesis 4 cr.  
Capstone course in which C S majors apply computer science skills to complete a research project, culminating in a written thesis report. Prerequisite: consent of thesis advisor.
- C S 450. C Programming 3 cr. (2+3P)  
Programming in the C language. More advanced than C S 167. Recommended for nonmajors only. Prerequisite(s): Graduate standing. Restricted to: Main campus only.
- C S 451. C++ Programming 3 cr.  
Programming in the C++ language. More advanced than C S 177. Recommended for nonmajors only. Prerequisite(s): Graduate standing.
- C S 452. Java Programming 3 cr. (2+2P)  
Programming in the Java language. More advanced than C S 187. For nonmajors only. Prerequisite(s): Graduate standing. Restricted to: Main campus only.
- C S 457. Topics in Software Programming and Applications 3 cr. (2+2P)  
Current topics in computer programming and software applications. Topic announced in the Schedule of Classes. More advanced than CS 157. recommended for non-majors only. May be repeated if subtitle is different. Prerequisite(s): Graduate standing.
- C S 460. Computer Science I Transition 3 cr.  
Computational problem solving; problem analysis; implementation of algorithms. Recursive structures and algorithms. For CS graduate students only; cannot be used in a student's program of study. Taught with C S 172. Consent of instructor required.
- C S 462. Object Oriented Programming Transition 3 cr.  
Introduction to problem analysis and problem solving in the object-oriented paradigm. Practical introduction to implementing solutions in the C++ language. Hands-on experience with useful development tools. For C S graduate students only; cannot be used in a student's program of study. Consent of instructor required. Prerequisite(s): At least a C in CS 172 or CS 460 or consent of instructor.
- C S 463. Introduction to Data Structures Transition 3 cr.  
Design, implementation, use of fundamental abstract data types and their algorithms: lists, stacks, queues, deques, trees; imperative and declarative programming. Internal sorting; time and space efficiency of algorithms. For C S graduate students only; cannot be used in a student's program of study. Consent of instructor required. Prerequisite(s): At least a C in CS 172 or CS 460 or consent of instructor.
- C S 464. Machine Programming and Organization Transition 3 cr.  
Computer structure, instruction execution, addressing techniques; programming in machine and assembly languages. For C S graduate students only; cannot be used in a student's program of study. Consent of instructor required. Prerequisite(s): At least a C in C S 172 or C S 460 or consent of instructor.
- C S 465. Discrete Math for Computer Science Transition 3 cr.  
Logical connectives, sets, functions, relations, graphics, trees, proofs, induction, and application to computer science. For C S graduate students only; cannot be used in a student's program of study. Consent of instructor required. Prerequisite(s): At least a C in C S 172 or C S 460 or consent of instructor.
- C S 466. Compilers and Automata Transition 3 cr.  
Methods, principles, and tools for programming language processor design; basics of formal language theory (finite automata, regular expressions, context-free grammars); development of compiler components. For C S graduate students only; cannot be used in a student's program of study. Consent of instructor required. Prerequisite(s): At least a C in C S 271 or C S 462, in C S 272 or C S 463, in C S 273 or C S 464, in C S 278 or C S 465, or consent of instructor.
- C S 468. Software Development Transition 3 cr.  
Software specification, design, testing, maintenance, documentation; informal proof methods; team implementation of a large project. For C S graduate students only; cannot be used in a student's program of study. Consent of instructor required. Prerequisite(s): At least a C in C S 271 or C S 462, in C S 272 or C S 463, or consent of instructor.
- C S 469. Data Structure and Algorithms Transition 3 cr.  
Introduction to efficient data structure and algorithm design. Order notation and asymptotic run-time of algorithms. Recurrence relations and solutions. Abstract data type dynamic set and red-black trees. Classic algorithm design paradigms: divide-and-conquer, dynamic programming, greedy algorithms. For C S graduate students only; cannot be used in a student's program of study. Consent of instructor required. Prerequisite(s): At least a C in C S 272 or C S 463, in C S 278 or C S 465, or consent of instructor.
- C S 470. Functional Programming 3 cr.  
Applicative programming techniques: higher order functions, infinite data structures, lambda calculus, universal functions. Survey of functional languages including Miranda and ML. Not for C S graduate students. Prerequisite(s): At least a C in C S 272 and C S 278.
- C S 471. Programming Language Structure I 3 cr.  
Syntax, semantics, implementation, and application of programming languages; abstract data types; concurrency. Not for C S graduates. Prerequisites: C or better in C S 370 and C S 371.
- C S 472. Logic and Constraint Logic Programming 3 cr.  
Declarative programming techniques; foundations of logic programming; programming in Prolog; constraint logic programming; applications of logic and constraint programming. Not for C S graduate students. Prerequisite(s): At least C in C S 272 and C S 278.
- C S 473. Architectural Concepts I 3 cr.  
Comparison of architectures to illustrate concepts of computer organization; relationships between architectural and software features. Not for C S graduate students. Prerequisites: at least a C in C S 273 and C S 370.



- C S 474. Operating Systems I** 3 cr.  
Operating system principles and structures, and interactions with architectures. Not for C S graduate students. Prerequisites: at least a C in C S 273, C S 371, and C S 372.
- C S 475. Artificial Intelligence I** 3 cr.  
Fundamental principles and techniques in artificial intelligence systems. Knowledge representation formalisms; heuristic problem solving techniques; automated logical deduction; robot planning methods; algorithmic techniques for natural language understanding, vision, and learning. Not for C S graduate students. Prerequisites: At least a C in MATH 330 and C S 372.
- C S 476. Computer Graphics I** 3 cr.  
Languages, programming, devices, and data structures for representation and interactive display of complex objects. Not for C S graduate students. Prerequisites: at least C in C S 272 or C S 273, MATH 280, MATH 291G.
- C S 478. Computer Security** 3 cr.  
Introduction to the art and science of computer security. Fundamentals of computer security including elementary cryptography, authentication and access control, security threats, attacks, detection and prevention in application software, operating systems, networks and databases. Prerequisite(s): At least a C in CS 273 or consent of instructor.
- C S 479. Special Topics** 1-3 cr.  
Topic announced in the Schedule of Classes. May be repeated if subtitle is different. Not for C S graduate students. Prerequisite: written agreement with instructor.
- C S 480. Linux System Administration** 3 cr.  
Basic system administration for Linux environments. Topics include user managements, file systems, security, backups, system monitoring, kernel configuration and other relevant aspects of system administration. Not for Computer Science graduate students.
- C S 481. Visual Programming** 3 cr.  
Design and implementation of languages using visual but nontextual means to specify programs. Not for C S graduate students.
- C S 482. Database Management Systems I** 3 cr.  
Database design and implementation; models of database management systems; privacy, security, protection, recovery. Not for C S graduate students. Prerequisites: at least a C in C S 272 and either C S 278 or MATH 279 or MATH 330.
- C S 483. Introduction to Robotics** 3 cr.  
Basic AI-based robotic architecture and concepts, with an emphasis on building and programming mobile robots. Not for C S graduate students.
- C S 484. Computer Networks I** 3 cr.  
Fundamental concepts of computer communication networks: layered network architecture, network components, protocol stack and service. Example of application, transport, network and data link layers, protocols primarily drawn from the Internet (TCP, UDP, and IP) protocol multimedia networks; network management and security. Not for C S graduate students. Prerequisites: At least a C in C S 272 and CS 273, senior or graduate standing or consent of instructor. STAT 371 or STAT 470 recommended.
- C S 485. User Interface Design** 3 cr.  
Interface design, conceptual models formed by users, computer aided instruction, natural and query languages, graphical representations. Not for C S graduate students. Prerequisite: at least C in C S 371.
- C S 486. Bioinformatics** 3 cr.  
Introduction to bioinformatics and computational biology. Computational approaches to sequences analysis, protein structure prediction and analysis, and selected topics from current advances in bioinformatics. Not for C S graduate students.
- C S 491. Parallel Programming** 3 cr.  
Programming of shared memory and distributed memory machines; tools and languages for parallel programming; techniques for parallel programming; parallel programming environments. Not for C S graduate students. Prerequisite: C or better in C S 370 or consent of instructor.
- C S 492. Computer Systems Modeling and Simulation** 3 cr.  
Basic concepts of modeling computer systems: continuous and discrete time models, states and transition, probabilistic models. Structure of simulation programs, time driven and event driven simulation on captured and synthetic traces, generation of random variables, queuing models, Markov chains, random walks, Poisson, Markov, renewal branching and Brownian motion processes, model validation and data analysis. For C S undergraduate students and non-C S graduate students only.

**CAST- CHILD ADVOCACY STUDIES**

- CAST 301. Family and Child Welfare Policy** 3 cr.  
Historical review and evolution of child welfare policies, initiatives and factors that influence child welfare service. Child welfare policies and services specific to the state of New Mexico are infused throughout the course. Taught with MSW 590. Cannot receive credit for CAST 301 and MSW 590.
- CAST 302. Professional and Systems Responses to Child Maltreatment** 3 cr.  
Course examines the professionals and systems that respond to allegations of child abuse and neglect. Includes the differences between civil and criminal proceedings; components of a court-worthy child abuse and neglect investigation; basic child forensic interviewing; an overview of child sex offenders; current research and controversial issues effecting the field. Students majoring in social work, criminal justice, education, sociology, psychology, nursing, and other areas will enhance their capacity to strengthen the safety net that protects children. Prerequisite(s): CAST 301.

**CCDE- DEVELOPMENTAL ENGLISH**

- CCDE 105 N. Effective Communication Skills** 4 cr. (3+2P)  
Instruction and practice in basic communication, to include written and oral presentations. Develops thinking, writing, speaking, reading, and listening skills necessary for successful entry to college and university classes. Provides laboratory. RR applicable.
- CCDE 110 N. General Composition** 4 cr. (3+2P)  
Instruction and practice in preparation for college-level writing. Students will develop and write short essays. Provides laboratory. Prerequisite: CCDE 105N (C or better) or equivalent. RR applicable.

**CCDL- DEVELOPMENTAL ESL**

- CCDL 101 N. Basic Skills in English as a Second Language I** 4 cr. (3+2P)  
Developmental studies course for ESL students. Development of basic skills in speaking, listening, reading, and writing English as a second language with emphasis on speaking and listening. Pronunciation stressed. Course intended for U.S. citizens and residents who are nonnative speakers of English. Prerequisite: English language screening or consent of instructor.
- CCDL 103 N. Basic Skills in English as a Second Language II** 4 cr. (3+2P)  
Continuation of CCDL 101N for ESL students. Course intended for U.S. citizens and residents who are nonnative speakers of English. Prerequisite: English language screening or consent of instructor.
- CCDL 105 N. Intermediate Skills in English as a Second Language I** 4 cr. (3+2P)  
Intermediate level with emphasis on reading and writing. Grammar and syntax stressed. Course intended for U.S. citizens and residents who are nonnative speakers of English. Prerequisite: English language screening or consent of instructor.
- CCDL 107 N. Intermediate Skills in English as a Second Language II** 4 cr. (3+2P)  
Continuation of CCDL 105N. Course intended for U.S. citizens and residents who are nonnative speakers of English. Prerequisite: English language screening or consent of instructor.

**CCDM- DEVELOPMENTAL MATHEMATICS**

- CCDM 100 N. Mathematics Preparation for College Success** 1-4 cr.  
Mathematics skills course designed for college students with math skills insufficient for success in CCDM 103N. May be repeated for a maximum of 4 credits. RR applicable.
- CCDM 103 N. Pre-Algebra** 4 cr. (3+2P)  
Fundamental mathematics operations and arithmetic computations. Introduction to algebra and applied geometry. Provides laboratory and individualized instruction. RR applicable.
- CCDM 105 N. Mathematics Preparation and Pre-Algebra** 5 cr. (4+2P)  
A total immersion course that combines CCDM 100N and CCDM 103N using tutorials, manipulatives, and classroom instruction. Completion of this class is equivalent to the completion of CCDM 100N and CCDM 103N. Prerequisite(s): Math Placement Exam. Restricted to: Community colleges.
- CCDM 112 N. Developmental Algebra I** 4 cr. (3+2P)  
Fundamental algebra operations, algebraic expressions, solving linear equations, systems of equations and application of linear equations. Provides laboratory instruction. Completion of CCDM 112N and CCDM 113N is equivalent to completion of CCDM 114N. Graded: Traditional with RR. Prerequisite(s): Grade of C or better in CCDM 103N or equivalent. Restricted to: Community Colleges only.



**CCDM 113 N. Developmental Algebra II** 4 cr. (3+2P)  
Fundamental algebra operations, polynomials, factoring, solving quadratics by factoring, rational expressions, exponents and radical expressions (continuation of CCDM 112N). Provides laboratory instruction. Completion of CCDM 112N and CCDM 113N is equivalent to completion of CCDM 114N. Graded: Traditional with RR. Prerequisite(s): Grade of C or better in CCDM 112N or consent of instructor. Restricted to: Community Colleges only.

**CCDM 114 N. Algebra Skills** 4 cr. (3+2P)  
Fundamental algebra operations: algebraic expressions, solving linear equations, factoring, radicals, exponents. Provides laboratory and individualized instruction. Completion of CCDM 114N meets basic skills requirement. Graded: Traditional with RR. Prerequisite(s): C or better in CCDM 103N. Restricted to: Community colleges.

**CCDM 117 N. Intermediate Algebra I** 3 cr.  
Real numbers, linear equations, functions, inequalities, absolute value equations, systems of equations, exponents and scientific notation, polynomials and polynomial functions, rational expressions. Graded S/U. A student who completes CCDM 117N with a grade of S must then continue with a designated section of MATH 120. Prerequisite: student must be qualified for MATH 120.

### CCDR- DEVELOPMENTAL READING

**CCDR 101 N. Introduction to Basic Reading** 4 cr. (3+2P)  
Provides basic reading skills through comprehension and vocabulary development. Emphasis on oral language literacy and reading fluency. Course earns institutional credit but will not count toward degree requirements. Prerequisite: COMPASS score of below 42 on Reading section.

**CCDR 103 N. Comprehensive Reading Development** 4 cr. (3+2P)  
Provides integration of basic reading skills, including vocabulary development, text comprehension, and critical reading skills. Course earns institutional credit but will not count towards degree requirements. Prerequisite: COMPASS score of 43 to 59 on reading section.

**CCDR 105 N. Fundamentals of Academic Reading.** 3 cr. (2+2P)  
Fundamentals of academic reading skills. Emphasis on vocabulary development and text comprehension through literature based instruction. Course earns institutional credit but will not count towards degree requirements. Graded: Traditional with RR. Prerequisite(s): COMPASS score 60 on reading section. Restricted to: Community Colleges only.

**CCDR 110 N. Effective College Reading** 3 cr. (2+2P)  
Provides a variety of strategies for effective reading and studying at the college level. Emphasis on reading across disciplines. Course earns institutional credit but will not count towards degree requirements. Graded: Traditional with RR. Prerequisite(s): COMPASS score 64 on reading section. Restricted to: Community Colleges only.

### CCDS- DEVELOPMENTAL SKILLS'

**CCDS 104 N. Comprehensive Reading Development** 4 cr. (3+2P)  
Integration of basic reading skills, including vocabulary development, text comprehension, and critical reading skills. RR applicable.

**CCDS 108 N. Effective Reading** 4 cr. (3+2P)  
Instruction and practice of skills and strategies for effective reading at the college level. Designed to incorporate applied skill practice lab activities. RR applicable.

**CCDS 109 N. Study Skills for Reading** 1-3 cr.  
Individualized reading skill strategies necessary for success in college classroom. May be repeated for a maximum of 3 credits. Graded traditional or S/U.

**CCDS 111 N. Study Skills for Math** 1-3 cr.  
Individualized study skill strategies necessary for success in the math classroom. May be repeated for a maximum of 3 credits.

**CCDS 113 N. Study Skills for English** 1-3 cr.  
Individualized study skill strategies necessary for success in the composition classroom. May be repeated for a maximum of 3 credits.

### CEL- ONLINE LEARNING AND TEACHING

**CEL 100. Degree Foundations** 2 cr.  
Topics related to professional development, time management, career placement, and academic skills preparation.

**CEL 220. Basic Community Emergency Response** 1 cr.  
Provides instruction on disaster preparedness for hazards that may impact the community. Training in basic disaster response skills such as fire safety, disaster medical operations, light search and rescue, disaster psychology, and terrorism response. Graded: S/U.

**CEL 301. Math Review for NMTA Basic Skills** 1-3 cr.  
Supplementary review work for students seeking to pass the math basic skills section of the NMTA Basic Skills exam. Topics include ratio/proportions, percents, geometry review, number sense, problem solving algebra review, and basic statistics. Prerequisites: MATH 112G or MATH 120 or other instructor approved math preparation and consent of instructor.

**CEL 320. Community Emergency Response** 3 cr.  
Provides instruction on disaster preparedness for hazards that may impact a community. Training in basic disaster response skills such as fire safety, light search and rescue, team organization, and disaster medical operations. Training provided in both classroom and remote location settings.

**CEL 401. Special Topics** 1-3 cr.  
Supervised academic work in support of NMTA preparation and other CEL student study plans. Consent of instructor or CEL advisor required.

**CEL 420. Directed Readings** 1-6 cr.  
Individual readings or research for either majors or non-majors Consent of instructor required. Graded: S/U. Prerequisite(s): Junior or above standing.

**CEL 495. Directed Studies** 1-6 cr.  
Individual study directed by consenting faculty. Consent of instructor required. Restricted to BAS and BIS majors.

**CEL 498. Degree Capstone** 3 cr.  
A final academic project reflecting BAS and BIS career, study plans and reflections on degree completion experience. Consent of instructor required. Restricted to BAS and BIS majors.

**CEL 499. Internship** 1-6 cr.  
Placement experience for BAS and BIS majors to participate in career oriented academic and professional level opportunities. Consent of instructor required. Restricted to BAS and BIS majors.

### CH E-CHEMICAL ENGINEERING

**CH E 100. Basics of Chemical Engineering** 1 cr.  
Development of chemical engineering and introduction to chemical engineering education and practice.

**CH E 111. Introduction to Computer Calculations in Chemical Engineering** 3 cr.  
Introduction to the use of computer software to solve engineering problems. Chemical engineering majors must earn a C or better. Prerequisite(s): MATH 121 or MPL greater than or equal to 4.

**CH E 201. Material and Energy Balances** 4 cr.  
Chemical Engineering basic problem-solving skills; unit conversions; elementary stoichiometry; material balances; energy balances; combined energy and material balances including those with chemical reaction, purge and recycle; thermochemistry; application to unit operations. Sources of data. Introduction to the first law of thermodynamics and its applications. Chemical engineering majors must earn C or better in this course. Restricted to CH E majors. Same as CH E 201H. Prerequisites: CHEM 115 or CHEM 111G, CH E 111 and MATH 192G.

**CH E 201 H. Material and Energy Balances - Honors** 4 cr.  
Same as CH E 201. Additional work to be arranged. Restricted to CH E majors. Prerequisites: CHEM 115 or CHEM 111G, CH E 111 and MATH 192G.

**CH E 298. Special Problems** 1-3 cr.  
Directed individual study. Written report covering work required. Prerequisite: consent of instructor and department head. May be repeated for a maximum of 3 credits under different subtitles. Restricted to majors.

**CH E 301. Chemical Engineering Thermodynamics I** 3 cr.  
Applications of the first and second law to chemical process systems, especially phase and chemical equilibria and the behavior of real fluids. Development of fundamental thermodynamic property relations and complete energy and entropy balances. Chemical engineering majors must earn C or better in this course. Prerequisite: CH E 201 and MATH 291G. Restricted to majors.

**CH E 302. Chemical Engineering Thermodynamics II** 2 cr.  
Continuation of CH E 301. Chemical engineering majors must earn C or better in this course. Restricted to majors. Prerequisite(s): CH E 301 and MATH 392.

**CH E 302 L. Thermodynamic Models of Physical Properties** 1 cr. (3P)  
Computational analysis of thermodynamic models in a chemical process simulator, and comparison to experimental data. Specification of pseudo-components. Generation of physical properties by group contribution methods. Corequisite(s): CH E 302.

- CH E 305. Transport Operations I: Fluid Flow 3 cr.  
Theory of momentum transport. Unified treatment via equations of change. Shell balance solution to 1-D problems in viscous flow. Analysis of chemical engineering unit operations involving fluid flow. General design and operation of fluid flow equipment and piping networks. Chemical engineering majors must earn C or better in this course. Prerequisites: CH E 201 and MATH 291G. Corequisite: MATH 392.
- CH E 306. Transport Operations II: Heat and Mass Transfer 3 cr.  
Theory of heat and mass transport. Unified treatment via equations of change. Analogies between heat and mass transfer. Shell balance solution to 1-D problems in heat and mass transfer. Analysis of chemical engineering unit operations involving heat transfer. Design principles for mass transfer equipment. Chemical engineering majors must earn C or better in this course. Prerequisites: CH E 305 and MATH 392. Restricted to majors.
- CH E 307. Transport Operations III: Staged Operations 3 cr.  
Theory of mass transport. Mass transfer coefficients. Analysis of chemical engineering unit operations involving mass transfer and separations. Equilibrium stage concept. General design and operation of mass-transfer equipment and separation sequences. Chemical engineering majors must earn C or better in this course. Prerequisite(s): CH E 302, CH E 306.
- CH E 311. Engineering Data Analysis 3 cr.  
Methodology and techniques associated with analyzing engineering data. Extensive spreadsheet use to analyze data and develop statistically significant conclusions based on the data. Data sets range from single variable experiments to multifactor regression analysis. Prerequisite: MATH 192G.
- CH E 322 L. Instrumentation & Transport Phenomena Laboratory 2 cr. (6P)  
Design of lab experiments that demonstrate the principles of process measurement and instrumentation through the determination of thermodynamic properties, transport phenomena properties, and heat and mass transfer coefficients. Treatment of data to include regression techniques, calculation of measurement error, and statistical analysis of variance. Written and oral reports. Prerequisite(s): CH E 311, CH E 306.
- CH E 330. Environmental Management Seminar I 1 cr.  
Survey of practical and new developments in environmental management field, hazardous and radioactive, waste management, and related health issues, provided through a series of guest lectures and reports of ongoing research. Restricted to: Main campus only. Crosslisted with: C E 330, E E 330, E S 330, E T 330, I E 330, M E 330 and WERC 330
- CH E 352 L. Simulation of Unit Operations 1 cr. (3P)  
Definition, specification, and convergence of basic unit operations in a process simulator. Course will cover pipe networks, pressure changers, heat exchangers, distillation columns, and chemical reactors. Corequisite(s): CH E 307, ChE 441.
- CH E 361. Engineering Materials 3 cr.  
Bonding and crystal structure of simple materials. Electrical and mechanical properties of materials. Phase diagrams and heat treatment. Corrosion and environmental effects. Application of concepts to metal alloys, ceramics, polymers, and composites. Selection of materials for engineering design. Prerequisite(s): CHEM 111 or CHEM 114, or CHEM 115. Crosslisted with: CH E 361H
- CH E 391. Industrial Employment 1-2 cr.  
Employment in chemical, petroleum, food, biotechnology, materials, environmental or pharmaceutical industry with opportunity for professional experience and training in chemical engineering. Requires written report covering work period approved by employer. Prerequisites: consent of instructor and department head. Course subtitled. May be repeated for a maximum of 6 credits. Arrangements must be made prior to employment. Restricted to majors.
- CH E 395V. Brewing Science and Society 3 cr.  
An overview of the science of brewing and the interrelationships between society, technology, business, and the evolution of the current beer market. Topics covered are history of brewing and the interrelationships between societal attitudes, technology, and cultural preferences; beer styles and evaluation techniques; production and characteristics of ingredients used in brewing; brewing unit operations; biochemistry of malting, mashing, and fermentation; engineering in the brewery; homebrewing; and societal and health issues related to beer and alcohol. Students must be at least 21 years of age by the first day of instruction of the semester to enroll in this course.
- CH E 398. Special Projects 1-3 cr.  
Directed individual projects. Written and oral reports covering work required. May be repeated for a maximum of 6 credits. Consent of instructor required. Restricted to CH E majors.
- CH E 412. Process Dynamics and Control 3 cr.  
Process modeling, dynamics, and feedback control. Linear control theory and simulation languages. Application of Laplace transforms and frequency response to the analysis of open-loop and closed-loop process dynamics. Dynamic response characteristics of processes. Stability analysis and gain/phase margins. Design and tuning of systems for control of level, flow, and temperature. Prerequisites: CH E 441.
- CH E 422 L. Unit Operations and Process Control Laboratory 1 cr. (3P)  
Experiments with chemical engineering unit operations including the use of computer data acquisition and closed-loop process control. Covers control system instrumentation, development of empirical models from process data, and PID controller design and tuning. Includes written and oral reports. Prerequisite(s): CH E 307 and CH E 407L.
- CH E 430. Environmental Management Seminar II 1 cr.  
Survey of practical and new developments in environmental management field, hazardous and radioactive, waste management, and related health issues, provided through a series of guest lectures and reports of ongoing research. Restricted to: Main campus only. Crosslisted with: C E 430, E E 430, E S 430, E T 430, I E 430, M E 430 and WERC 430
- CH E 436. Environmental Process Design I 3 cr. (9P)  
Environmental clean-up and/or waste treatment process design. Participation in team solution to the WERC environmental contest problem, or equivalent, according to rules of contest. Design, construction, and operating demonstration of a bench or pilot scale facility to clean up a specified environmental problem. Written and oral reports covering work required. Open to all science, engineering, and business majors. Prerequisite: consent of instructor. May be repeated for a maximum of 6 credits. Same as CH E 536.
- CH E 437. Environmental Process Design II 3 cr. (9P)  
Continuation of CH E 436. Prerequisite: consent of instructor. May be repeated for a maximum of 6 credits. Same as CH E 537.
- CH E 439. Environmental Modeling 3 cr.  
Environmental transport processes in water, groundwater and the atmosphere; mathematical models to account for simultaneous chemical reaction and transport in the environment; models of chemical fate; aquatic chemistry; metals migration in soils; atmospheric deposition and global change; metals deposition. Prerequisite(s): MATH 392 or CH E 201.
- CH E 441. Chemical Kinetics and Reactor Engineering 3 cr.  
Analysis and interpretation of kinetic data and catalytic phenomena. Applied reaction kinetics; ideal reactor modeling; non-ideal flow models. Mass transfer accompanied by chemical reaction. Application of basic engineering principles to design, operation, and analysis of industrial reactors. Chemical engineering majors must earn C or better in this course. Prerequisite(s): CHEM 313, CH E 302 and CH E 306. Corequisite(s): CH E 307.
- CH E 443. Industrial Catalysis 3 cr.  
Fundamentals of catalytic processes, including chemistry, catalyst preparation, properties and reaction engineering. Addresses heterogeneous catalytic processes employed by industry. Detailed analysis of existing catalysts and catalytic reactions, and process design in chemical engineering. Prerequisite: Ch E 441
- CH E 451. Engineering Economy 3 cr.  
Discounted cash flows, economics of project, contract and specifications as related to engineering design. Same as I E 451.
- CH E 452. Chemical Process Design & Economic Evaluation 3 cr.  
Concepts in chemical engineering process design, including: capital and manufacture cost estimation; discounted cash flows; interest; taxes; depreciation; profitability analysis; project specifications. Prerequisite(s): CH E 307 and CH E 441.
- CH E 452 L. Chemical Process Simulation 1 cr. (3P)  
Construction and convergence of chemical processes in a process simulator. Students will understand how to access variables, define and converge design specifications and converge tear/recycle streams. Prerequisite(s): ChE 352L. Corequisite(s): ChE 452.
- CH E 455. Chemical Plant Design 3 cr.  
Analysis of integrated process plants. Design for optimum operability, reliability, safety, and control. Process analysis of performance, optimization, and energy integration (pinch technology). Requires individual solution of the AIChE student contest problem, or equivalent, according to rules of contest. Written report covering work is required. Prerequisite(s): CH E 452.
- CH E 455 L. Chemical Plant Simulation 1 cr. (3P)  
Construction, convergence, and optimization of chemical processes in a process simulator. Dynamic process simulation and control. Prerequisite(s): Ch E 412, Ch E 452L. Corequisite(s): ChE 455.

- CH E 456. Advanced Chemical Process Simulation 3 cr.  
Advanced techniques in computational simulation of chemical processes using process simulation software. Restricted to CH E majors. Prerequisite: CH E 452L or consent of instructor.
- CH E 464. Polymer Science 3 cr.  
Synthesis, structure, property relationships of synthetic polymers. Prerequisite: CH E 361.
- CH E 466. Fuel Cell and Hydrogen Technology 3 cr.  
Introduction to fundamentals and applications. Includes the thermodynamics; electrochemical kinetics and fuel cell electrode catalyst; systems and design and reforming; hydrogen production, storage, and safety; applications of fuel cells in stationary power generation, portable power, and automobiles. Prerequisites: CHEM 111G and PHYS 215G.
- CH E 468. Adsorption 3 cr.  
Introductory course includes adsorption equilibrium and kinetics theories; materials and characterization; processes and design. Selected applications of adsorption processes in chemical, pharmaceutical and environmental industries. Prerequisites: CH E 301 and CH E 306. Restricted to majors.
- CH E 470. Introduction to Nuclear Energy 3 cr.  
Atomic and nuclear structure, nuclear stability and radioactivity, nuclear reactions, detection and measurement of radiation, interaction of radiation with matter, radiation doses and hazard assessment, principles of nuclear reactors, and applications of nuclear technology. Prerequisite(s): CHEM 111, MATH 192.
- CH E 471. Health Physics 3 cr.  
Introduction to Radiation Protection, Radiation/Radioactivity, Radioactive Decay/Fission, Interaction of Radiation and Matter, Biological Effects of Radiation, Radiation Measurement/Statistics, Sampling for Radiation Protection Purposes, Radiation Dosimetry, Environmental Transport, Radiation Protection Guidance, External Radiation Protection, Internal Radiation Protection, Waste Management, and Hazards Analysis and Control. Prerequisite(s): MATH 192, CH E 470. Crosslisted with: WERC 471
- CH E 473. Nuclear Regulations and Compliance Practices 3 cr.  
Introduction, through the use of case studies, to the best technical compliance practices for regulations governing the siting, licensing, constructing, operating and decommissioning of nuclear fuel cycle facilities. Consent of instructor required. Prerequisite(s): MATH 191G and (CHEM 111G or Chem 115). Crosslisted with: WERC 473
- CH E 474. Power Plant Design 3 cr.  
Principles of electric power generation. Review of combustion, heat transfer, and thermodynamic power cycles. Analysis of hydroelectric, fossil fuel, nuclear, and alternative power systems. Environmental and economic considerations. Prerequisite(s): MATH 191G, CHEM 111G.
- CH E 475. Nuclear Reactor Theory 3 cr.  
An overview of the properties of nuclei, nuclear structure, radioactivity, nuclear reactions, fission, resonance reactions, moderation of neutrons, will be followed by mathematical treatment of the neutronics behavior of fission reactors, primarily from a theoretical, one-speed perspective. Criticality, fission product poisoning, reactivity control, reactor stability and introductory concepts in fuel management, slowing down and one-speed diffusion theory. Corequisites: MATH 392. Prerequisites: CHEM 112G, PHYS 215G, MATH 291G.
- CH E 476. Nuclear Fuel Cycles 3 cr.  
Physical and chemical processes in the conventional nuclear fuel cycle: uranium mining and milling, conversion, enrichment, fuel fabrication, reactor operations, interim storage, reprocessing and recycling, waste treatment and disposal. Alternative fuel cycles and future prospects. Prerequisite(s): CH E 470.
- CH E 477. Introduction to Bioengineering 3 cr.  
Introductory course includes both biomedical and biochemical engineering topics; tissue engineering, biomedical systems, artificial organs, biology from an engineering viewpoint, engineering principles of bioprocesses, biochemical engineering, physiologic systems modeling and introduction to applications for recombinant DNA technology. Prerequisites: CHE 201.
- CH E 490. Senior Seminar 1 cr.  
Orientation to professional practice. Oral presentations by invited speakers, faculty, and students. Prerequisite: senior standing. Restricted to majors.
- CH E 491. Special Topics 1-4 cr.  
Lecture and/or laboratory instruction on special topics in chemical engineering. May be repeated to a maximum of 6 credits under different subtitles listed in the Schedule of Classes. Restricted to majors.
- CH E 498. Undergraduate Research 1-3 cr. (6+9P)  
Provides an opportunity for undergraduate students to work in research or areas of special interest such as design problems and economic studies under the direction of a faculty member. Written report and oral presentation in CH E 490, Senior Seminar, covering work required. Prerequisite: consent of instructor and department head. Approval of written application. Maximum of 3 credits per semester. May be repeated for a maximum of 6 credits.
- CHEM- CHEMISTRY**
- CHEM 100. Basic Chemistry 3 cr.  
For students whose preparatory science or math training has been deficient. Does not meet the chemistry requirement in any curriculum. Prerequisite: Enhanced ACT composite score of at least 18 or a grade of C or better in CCDM 114N.
- CHEM 101. General Supplemental Instruction I 1 cr.  
Collaborative workshop for students in General Chemistry I. Course does not count toward departmental degree requirements. Corequisite: CHEM 111G. May be repeated for a maximum of 2 credits.
- CHEM 102. General Supplemental Instruction II 1 cr.  
Collaborative workshop for students in General Chemistry II. Course does not count toward departmental degree requirements. Corequisite: CHEM 112G. May be repeated for a maximum of 2 credits.
- CHEM 103. Principles of Supplemental Instruction III 1 cr.  
Collaborative workshop for students in CHEM 110G, Principles and Applications of Chemistry. Course does not count toward departmental degree requirements. Co-requisite: CHEM 110. May be repeated for maximum of 2 credits.
- CHEM 110G. Principles and Applications of Chemistry 4 cr. (3+3P)  
A survey of the properties and uses of the elements and their compounds. In addition to classical chemistry, attention is paid to the materials from which consumer products are made, to the production of energy, and to environmental considerations. Prerequisite: 3 years of high school math or CCDM 114N.
- CHEM 111G. General Chemistry I 4 cr. (3+3P)  
Descriptive and theoretical chemistry. Prerequisite: (1) grade of C or better in MATH 120 or a Mathematics Placement Exam Score adequate to enroll in mathematics courses beyond MATH 120; and (2) one of the following: B or better in a second semester high school chemistry course, or grade of at least C in CHEM 100, or an enhanced ACT score of at least 22. CHEM 111G/112 are General Education alternative to CHEM 110G.
- CHEM 112G. General Chemistry II 4 cr. (3+3P)  
Descriptive and theoretical chemistry. CHEM 111G/112 are General Education alternative to CHEM 110G.
- CHEM 114. General Chemistry for Engineers 4 cr. (3+3P)  
An accelerated one-semester course covering the basic principles of chemistry. May not be taken for credit by students who have taken CHEM 111G.
- CHEM 115. Principles of Chemistry I 4 cr. (3+3P)  
Detailed introduction to analytical, inorganic and physical aspects of chemistry; both descriptive and theoretical explanations. Structured for chemistry and biochemistry majors but appropriate for other physical and life science students. CHEM 115/116 are General Education alternatives to CHEM 110G. Prerequisite: Eligible to take MATH 190 and an ACT composite score of 22 or higher.
- CHEM 116. Principles of Chemistry II 4 cr. (3+3P)  
Recommended for chemistry majors and other qualified students. CHEM 115/116 are General Education alternatives to CHEM 110G. Prerequisites: grade of C or better in CHEM 115.
- CHEM 152. Chemistry and Mathematics of the Molecular World 3 cr.  
Introduction to chemical and mathematical concepts relevant to understanding the molecular world. Topics include atomic and molecular structure, intermolecular forces, physical states of matter, phase transitions, equations of motions, vectors, polynomial equations, and computer-based molecular modeling techniques. Main campus only, web-based delivery. Prerequisites: MATH 121G or consent of instructor.
- CHEM 210. Chemistry for the Allied Health Sciences 3 cr.  
Discussion and application of the established facts and concepts of general organic chemistry and biochemistry to acquire a molecular understanding of a variety of health related issues, from atmospheric ozone holes to human nutrition. Prerequisite: CHEM 110G or CHEM 111G.
- CHEM 211. Organic Chemistry 4 cr. (3+3P)  
A one-semester survey for students requiring a brief coverage of important classes of organic compounds. Prerequisite: CHEM 112G or CHEM 114.



- CHEM 217. General Chemistry III 3 cr. (2+3P)  
Quantitative aspects of general chemistry: solid state structure, equilibrium, thermodynamics, and kinetics. Required of chemical science majors who have taken CHEM 111G/112. Prerequisite: CHEM 112G.
- CHEM 241. Introduction to Research 1-3 cr. (3+9P)  
Techniques and procedures of chemical research. Prerequisites: 8 credits of chemistry and a 3.0 GPA in chemistry. May be repeated for a maximum of 3 credits.
- CHEM 242. Explorations in Chemistry 1 cr.  
Historical and current developments, careers in chemistry, computer applications and use of the library by chemists. To be completed before the end of the sophomore year. Graded S/U.
- CHEM 303. Organic Supplemental Instruction I 1 cr.  
Collaborative workshop for students in Organic Chemistry I. Course does not count toward departmental degree requirements. Corequisite: CHEM 313. May be repeated for a maximum of 2 credits.
- CHEM 304. Organic Supplemental Instruction II 1 cr.  
Collaborative workshop for students in Organic Chemistry II. Course does not count toward departmental degree requirements. Corequisite: CHEM 314. May be repeated for a maximum of 2 credits.
- CHEM 310V. Chemistry and Society 3 cr.  
The impact of chemistry on modern society. Does not satisfy chemistry elective requirements for B.S. chemistry majors. Prerequisite: CHEM 110G or consent of instructor.
- CHEM 313. Organic Chemistry I 3 cr.  
Nomenclature, uses, basic reactions, and preparation methods of the most important classes of aliphatic and aromatic compounds. Prerequisite: CHEM 112G or CHEM 116.
- CHEM 314. Organic Chemistry II 3 cr.  
Nomenclature, uses, basic reactions, and preparation methods of the most important classes of aliphatic and aromatic compounds. Prerequisite: C or better in CHEM 313.
- CHEM 315. Organic Chemistry Laboratory 2 cr. (6P)  
Techniques, preparative and analytical methods in organic chemistry. Prerequisite: C or better in CHEM 313 or consent of instructor. Corequisite: CHEM 314.
- CHEM 351. Special Topics 1-3 cr.  
Specific subjects to be announced in the Schedule of Classes. Prerequisite: consent of instructor. May be repeated for a maximum of 12 credits.
- CHEM 356. Descriptive Inorganic Chemistry 3 cr.  
Occurrence and properties of the elements and the chemistry of their compounds. Prerequisites: CHEM 112G and CHEM 116; and CHEM 211 or CHEM 313.
- CHEM 357. Synthetic Inorganic Laboratory 2 cr. (6P)  
Explores synthesis and analysis of main group and transition metal inorganic compounds. Inorganic laboratory and spectroscopic techniques will be used. Prerequisites: CHEM 356.
- CHEM 360. General Geochemistry 3 cr.  
Same as GEOL 360.
- CHEM 371. Analytical Chemistry 4 cr. (2+6P)  
The fundamentals of quantitative chemical analysis. Prerequisite: CHEM 112G.
- CHEM 372. Forensic Chemistry 3 cr. (2+1P)  
Theories and laboratory techniques in the areas of forensic chemistry and biochemistry. Prerequisites: CHEM 371 and BCHE 341 or CHEM 371 and BCHE 395 or consent of instructor.
- CHEM 421 H. Instrumental AnalysisPHonors 4 cr. (3+3P)  
Same as CHEM 421. Additional work to be arranged.
- CHEM 422. Environmental Chemistry 3 cr.  
Chemistry of organic and metal ion pollutants in the environment and principles important to their remediation including bioremediation. Prerequisite(s): CHEM 112G and either CHEM 211 or CHEM 313. Restricted to: Main campus only. Crosslisted with: E S 422
- CHEM 424. Soil Chemistry 3 cr.  
Same as SOIL/GEOL 424.
- CHEM 431. Physical Chemistry 3 cr.  
Principles that govern the physical and chemical behavior of matter. May not be counted toward Bachelor of Science degree in chemistry. Prerequisites: CHEM 116 or CHEM 217; MATH 192G; PHYS 212G or PHYS 214 and PHYS 216G.
- CHEM 431 H. Physical Chemistry Honors 3 cr.  
Same as CHEM 431. Additional work to be arranged.
- CHEM 433. Physical Chemistry I 3 cr.  
Laws and theories underlying chemical phenomena.
- CHEM 433 H. Physical Chemistry I Honors 3 cr.  
Same as CHEM 433. Additional work to be arranged. Prerequisites: MATH 192G, PHYS 216G, and CHEM 112G.
- CHEM 434. Physical Chemistry II 3 cr.  
Laws and theories underlying chemical phenomena. Prerequisite: CH E 302 or CHEM 433.
- CHEM 435. Physical Chemistry Laboratory 2 cr. (6P)  
Prerequisite: concurrent registration in CHEM 434.
- CHEM 441. Advanced Research 1-3 cr. (3+9P)  
Investigation of chemical problems and the development of special techniques. Prerequisites: consent of instructor, 16 credits of chemistry and 3.0 GPA in chemistry for nonmajors. May be repeated for a maximum of 3 credits.
- CHEM 443. Senior Seminar 1 cr.  
Discussions of current chemical research, impact of chemistry on society and/or ethics as applied to chemists. Each student will present a written and an oral report on an approved topic. Prerequisite: CHEM 431 or CHEM 433.
- CHEM 444. Senior Thesis 2 cr.  
A writing project for students wishing to prepare a more extensive report than that required for CHEM 443. The thesis may cover independent research, a topic from current chemical literature, or the impact of chemistry on society. May be taken concurrently with CHEM 443. Prerequisite: CHEM 431 or CHEM 433.
- CHEM 451. Special Topics 1-3 cr.  
Specific subjects to be announced in the Schedule of Classes. Prerequisite: consent of instructor. May be repeated for a maximum of 12 credits.
- CHEM 452. Integrated Advanced Laboratory 3 cr.  
Applications of the principles of organic, inorganic, physical, and analytical chemistry to solve particularly defined but open-ended problems in chemistry. Prerequisites: CHEM 315, CHEM 356, CHEM 371, CHEM 433.
- CHEM 455. Independent Studies 1-3 cr.  
Independent studies directed by consulting faculty. Prerequisite: consent of instructor.
- CHEM 456. Inorganic Structure and Bonding 3 cr.  
Theoretical principles and a systematic study of the periodic table. Prerequisite: CHEM 356 or CHEM 431 or CHEM 433.
- CHEM 466. Advanced Organic Chemistry 3 cr.  
Recent developments in synthesis and theoretical principles of organic chemistry. Prerequisite: CHEM 314.
- CHEM 466 H. Advanced Organic Chemistry Honors 3 cr.  
Same as CHEM 466. Additional work to be arranged.
- CHEM 471. Instrumental Methods of Analysis 4 cr. (3+3P)  
Analytical techniques, including optical and procedures. Prerequisites: CHEM 371 and either PHYS 212G or PHYS 216G.
- CHEM 472. Analytical Methods for Toxic Organics and Metal Ions in the Environment 3 cr. (2+3P)  
Laboratory course with lectures on principles of analytical techniques related to environmental monitoring of pollutants and waste management. Prerequisite: CHEM 371 or C E 462 or consent of instructor.
- CHIN- CHINESE**
- CHIN 111. Elementary Chinese I 4 cr.  
Mandarin Chinese for beginners.
- CHIN 112. Elementary Chinese II 4 cr.  
Mandarin Chinese for beginners. Prerequisite: C or better in CHIN 111.
- CHIN 211. Intermediate Chinese I 4 cr.  
Speaking, reading and writing Mandarin Chinese. Prerequisite: C or better in CHIN 112.
- CHIN 212. Intermediate Chinese II 4 cr.  
Speaking, reading and writing Mandarin Chinese. Prerequisite: C or better in CHIN 211.
- CHSS- COMMUNITY HEALTH AND SOCIAL SCIENCES**
- CHSS 100. Introduction to Health and Social Services 1 cr.  
Introduction to professional opportunities in nursing, social work, public health, community health, and environmental/occupational health. Graded S/U.
- CHSS 101. Overview of Health and Community Services 3 cr.  
Health and community service professions with emphasis on public health, community health education, and environmental/occupational health.



- CHSS 216. Ethical and Research Issues in Human and Community Service 3 cr.  
Ethical and legal responsibilities of health personnel with emphasis on research applications. May not receive credit for both CHSS 216 and CHSS 316. Community Colleges only.
- CHSS 295. Leadership/Mentorship Training for the CHSS Ambassadors Program 1 cr.  
Leadership development for volunteers serving as CHSS ambassadors. Focus on public relations and CHSS undergraduate degree programs. Prerequisite: consent of instructor. Graded S/U.
- CHSS 299. Service Learning Experience in Human and Community Services 3 cr.  
Exploration of contemporary social, civic, economic and ethical problems that require student participation in collaborative efforts within the community. Requires 30 clock hours of community based service for each credit. Graded: S/U. Prerequisite(s): CHSS 101, HL S 150 and HL S 275 or consent of instructor. Corequisite(s): HL S 295 or CHSS 216. Contact instructor for approval.
- CHSS 300. Introduction to Human and Community Services 1 cr.  
Professional roles in the human service industry. Offered in a distance education format. Overview of public health, community health education, nursing, and social work professions. Graded S/U.
- CHSS 310. Medical Terminology for Health and Social Services Professionals 3 cr.  
Understanding medical terms used to describe the human body in health and in disease, with application related to anatomy, physiology, pathology, and clinical aspects of nutrition.
- CHSS 316. Ethical and Research Issues in Human and Community Service 3 cr.  
Ethical and legal responsibilities of health personnel, with emphasis on research applications. Web-facilitated course, which may be offered also through distance education format. Same as CHSS 216 with differentiated assignments for students in CHSS 316, but students may not receive credit for both CHSS 216 and CHSS 316.
- CHSS 460. Health Disparities and Health Interventions 3 cr.  
Exploration of culturally adapted health intervention strategies designed to address health disparities.
- CMI- CINEMA & FILM/VIDEO PRODUCTION**
- CMI 100. Introduction to the Creative Media Industry 3 cr.  
This class is an introductory course for students interesting in learning about the creative media industry and the Creative Media Institute. It offers a broad-stroked view of the entire industry including Marketing, Production, Budgets, Jobs, New Media Literacy, and Industry Standards. Students will listen to experts in the field, get involved in open discussions about the industry and then use new information to complete hands-on assignments in the laboratory. Restricted to: Main campus only.
- CMI 101. History of Cinema 3 cr.  
An introduction to cinema's history looking at each aspect of film from inception to current development. It focuses on the historical aspects of sound production, cinematography, technological advances, music scoring, foley, animation, and narrative development. Students will see examples of movies throughout the semester and will take part in discussions.
- CMI 200. Sound Design I 3 cr.  
Focuses on the techniques for creating, recording and manipulating sounds through challenging sound design projects. Restricted to ANVE, DFM majors.
- CMI 205. Cinematography I 3 cr.  
Theories and techniques of visual design in videography and the aesthetics of lighting. Restricted to: Main campus only. Restricted to ANVE, DFM majors.
- CMI 214. Acting for Film 3 cr.  
Techniques for film and television acting. Differences between film and live theater acting; How film performances are created among actor, director, writer, cinematographer, and editor. Restricted to: Main campus only. Restricted to ANVE, DFM majors.
- CMI 216. Editing I 3 cr.  
Focuses on individual editing skills including capture, interface, basic cuts, and transitions. Restricted to ANVE, DFM majors.
- CMI 230. Developing the Animated Project 3 cr.  
Course addresses elements of the production and development processes for animated projects. Concept, story, character development and storyboarding will be covered as well as layout, sound, voice recording and basic concepts of editing and timing. Students will develop an animated project for future production. Restricted to: Main campus only. Restricted to ANVE, DFM majors.
- CMI 231. History of Animation 3 cr.  
Explores the history of Animation as an art form and industry through readings, screenings, lecture and periodic guest speakers. Restricted to: Main campus only. Restricted to DFM, ANVE majors.
- CMI 232. Storyboarding 3 cr.  
Examines effective writing principles for creating storyboards that communicate the overall picture of a project, timing, scene complexity, emotion and resource requirements. Restricted to: Main campus only.
- CMI 233. Light, Shade, Render 3 cr.  
This course will explore the theory and practice of 3D lighting and rendering methodologies. Techniques covered will implement cameras, lighting sources, textures, surface-mapping and algorithmic rendering to produce stylized and photo realistic images. Topics covered will include direct and indirect lighting, shaders that simulate physical substances and effects, rendering multiple passes and simulating physical lens effects. Prerequisite(s): CMI 260, CMI 280, or Consent of Instructor. Restricted to: Main campus only. Restricted to DFM, ANVE majors.
- CMI 235. Narrative: Principles of Story Across the Media 3 cr.  
Examines the various strategies of written and visual storytelling, narrative structure and its principle components (plot, theme, character, imagery, symbolism, point of view), with an attempt to connect them to elements of contemporary forms of media expression, including screenwriting, playwrighting, writing for documentaries and animation, etc. Prerequisite(s): Major standing or consent of instructor. Restricted to: Main campus only. Crosslisted with: ENGL 235
- CMI 250. Beginning 2-D Animation 3 cr.  
Learn the basics of digital 2D animation by creating an animated short from a storyboarded scene using professional animation, imaging, and editing software. Prerequisite(s): ART 150. Restricted to: Main campus only. Restricted to CMI majors.
- CMI 260. Foundations of 3D Animation 3 cr.  
The objective of this course is to provide a hands-on overview of the 3D animation production process. Students will be introduced to basic story development and the creation of computer generated assets and cinematic sequences. The course will survey specialty areas of digital animation and various software and techniques applied in entertainment and information media. Prerequisite(s): CMI 235, CMI 232 or consent of instructor. Restricted to: Main campus only. Restricted to ANVE, DFM majors.
- CMI 270. Rigging for 3D Animation 3 cr.  
This course will introduce principles and practices of current rigging for 3D animation. Students will develop fundamental methods necessary to create character rigs. Students will learn aesthetic, technical, and optimization concepts as they apply to organic and mechanical designs. Topics will include: hierarchies, constraints, deformation rigging, skeleton creation, skinning, forward and inverse kinematics, controls, and body and facial rigging. Prerequisite(s): CMI 290. Restricted to ANVE, DFM majors.
- CMI 271. Rigging for 2D Animation 3 cr.  
Students will learn how to build and animate digital "cut-out" characters using several different techniques including bones, puppet pins, and keyframing. This technique, also referred to as "flash" style, has established itself as an increasingly popular alternative to cell based character animation in film, TV, and web production studios all over the world. Prerequisite(s): CMI 250. Restricted to: Main campus only. Restricted to ANVE, DFM majors.
- CMI 280. Modeling 3 cr.  
This course will introduce 3D modeling methods and current practices. Students will learn preliminary and detailed modeling techniques using industry standard software. Methods will emphasize formal and functional aspects of modeling as they apply to mechanical, organic, and sculpted topology for application in animation, games, and information media. Restricted to: Main campus only. Restricted to ANVE, DFM majors.
- CMI 290. 3-D Animation 3 cr.  
Overview of the essentials and principles of 3D animation; creative methods for using industry standard tools to produce the illusion of movement for storytelling. Topics include, keyframe and curve animation, kinematics, cycle animation, camera animation, deformers, and constraints. Prerequisite(s): CMI 260, CMI 250 or consent of instructor. Restricted to: Main campus only.
- CMI 301. Sound Design II 3 cr.  
Mixing and balancing dialogue, sound effects and music in postproduction. Study the role of sound effects, foley, soundtrack choices, and music supervision. Prerequisite: CMI 200

- CMI 303. Cinema Review and Critique** 3 cr.  
This course is for the student who wants to learn to be a more active, intelligent film viewer. It encourages critical thinking about films and educates students on how to write a film review. Students will meet in the movie theater to watch essential films that serious movie watchers should see from classic motion pictures, to current release major motion pictures, independent films and world cinema features. The course will serve as a guide to the illuminating process of evaluating, analyzing, and reviewing movies. Students' reviews will be published publicly.
- CMI 305. Business of Filmmaking/Animation** 3 cr.  
Explores the roles of unions, basic contracts, legal arrangements, and the economics of the production process, distribution, and financing. Prerequisite: CMI 235.
- CMI 308. Writing for Animation** 3 cr.  
This class explores methods for, and approaches to, writing for animation. Students study and produce scripts for a range of animation outlets while engaging in writing exercises based on character and story development. Prerequisite(s): CMI 235, CMI 309 or consent of instructor.
- CMI 309. Screenwriting I** 3 cr.  
Writing intensive. Students learn the craft of screenwriting, honing skills in writing dialogue and visual narrative, crafting dynamic characters and dramatic action. Original student scripts will be performed and discussed in class. Prerequisite(s): ENGL/CMI 235 or consent of instructor. Crosslisted with: ENGL 309 and THTR 306.
- CMI 310. Cinematography II** 3 cr.  
Advanced tools of the cinematographer, lighting and composition techniques. Artistic and technological elements of cinematography. Prerequisite(s): CMI 205, CMT 205. Restricted to DFM, ANVE majors.
- CMI 311. Editing II** 3 cr.  
Advanced techniques in digital films using professional non-linear editing systems. Prerequisite: CMI 216
- CMI 315. Adventures in Genre** 3 cr.  
Students learn storytelling strategies for the screen by studying various structural genres and components of screenplays and films. Utilizing these strategies, students develop a number of their own original screenplay ideas. Additionally, pitch workshops are held and students learn to present their ideas in various, practical situations. Prerequisite(s): CMI 235. Restricted to DFM, ANVE majors.
- CMI 318. Documentary Production I** 3 cr.  
Students will begin to examine the documentary genre. A survey of the theory and history of documentary film making will include viewings and discussions of notable films and directors. The class will conclude with a proposal for a student documentary project. Prerequisite(s): CMI 216, CMI 205. Restricted to C J, ANVE, DFM majors. Crosslisted with: C J 432.
- CMI 319. Documentary Production II** 3 cr.  
This course is a followup to CMI 318, Documentary I. In this course students shoot and edit and publish work previously 'pre-produced' in CMI 318. Following a plan developed the previous semester, groups of students will gain advanced storytelling skills as they record and edit their short films. Consent of instructor required. Prerequisite(s): CMI 216, CMI 205, CMI 318 or consent of instructor. Restricted to ANVE, DFM, Criminal Justice majors. Crosslisted with: C J 432.
- CMI 323. Texturing and Matte Painting** 3 cr.  
Advanced techniques in texturing and digital matte painting for visual effects, combines elements of photography, digital freehand painting techniques, simple 3D models and custom shaders, merging boundaries of realism with graphic illustration and 3D environments. Prerequisite(s): CMI 260; CMI 280 or ART 150. Restricted to DFM, ANVE majors.
- CMI 328. Producing** 3 cr.  
Examines the role of the Producer, essential to every film production. The course will revolve around best practices in organizational design, the production process, the budgeting process, financial controls, scheduling, insurance and distribution. Prerequisite(s): CMI 205. Restricted to ANVE, DFM majors.
- CMI 329. Studies in Drama** 3 cr.  
Students will draw on a group of related American and European dramatic works to examine various areas of 20th century culture. Topics will vary. Restricted to DFM, ANVE, ENGL, THTR majors. Crosslisted with: ENGL 329 and THTR 329
- CMI 332. 3-D Character Animation** 3 cr.  
Essentials and principles of 3D character animation. Techniques and craft of breathing life into characters through movement including dynamic poses, blocking action, run and walk cycles, lip synching and realism. THTR 110 Acting and CMI 200 Sound Design are recommended. Prerequisite(s): THTR 110 or equivalent, CMI 260, CMI 290 or consent of instructor. Restricted to ANVE, DFM majors.
- CMI 341. Visual Effects I** 3 cr.  
Fundamentals and principles of live action footage and computer generated imagery integration including 3D animation, matchmoving, green screen setup, keying and compositing. Consent of instructor required. Prerequisite(s): CMI 205, CMI 260, 280, and CMI 333. Restricted to ANVE, DFM majors.
- CMI 348. Acting and Directing for Voiceover** 3 cr.  
Students will explore methods for approaching voiceover and for improving acting and directing skills. Exercises will promote ease with collaboration in the studio setting, written work will focus on viewing voiceover in an analytical and discerning light. Restricted to ANVE, DFM majors.
- CMI 350. Intermediate 2-D Animation** 3 cr.  
Learn the more refined aspects of motion for character animation by focusing on Disney's 12 Principles of Animation, practicing these advanced drawing techniques in exercises and incorporating them into a brief final short. Prerequisite(s): CMI 250.
- CMI 360. Previsualization** 3 cr.  
Implements 3D animation tools in preproduction shot and sequence design for motion picture and broadcast industries; including 3D storyboarding, technical planning and editing basics. LC Campus Only. Prerequisite(s): CMI 260, CMI 280, and CMI 290 or consent of instructor. Restricted to ANVE, DFM majors.
- CMI 361. After Effects: 2D Compositing and EFX** 3 cr. (3P)  
The purpose of this course is to familiarize students with the powerful compositing and special effects tools of Adobe After Effects for 2D, traditional animation. Students will learn how to assemble an existing un-rendered animation into a final piece with advanced 3D lighting, spacing, and digital effects so that it can achieve a dynamic, professionally rendered look.
- CMI 365. Character Design and Development** 3 cr.  
Digital character design for the entertainment industry. Provides insight into the process of creating iconic characters. Traditional and contemporary character designers are explored. Industry workflow is introduced and necessary skills are developed to design detailed 3D characters from concept through production. Prerequisite(s): CMI 250, CMI 260 and CMI 280, or consent of instructor. Restricted to ANVE, DFM majors.
- CMI 395. Directing I** 3 cr.  
Study and application through short scene work of basic tools of director and of relationships with actors, designers, playwright, and stage manager. Interpreting as well as organizing. Prerequisite(s): CMI 205, CMI 216, CMI 235, CMI 232. Restricted to ANVE, DFM majors.
- CMI 396. Directing II** 3 cr.  
Addresses pre-production concerns including script breakdown, casting ground plans and coverage. The criteria employed when selecting the creative team including a director of photography, art director, light, sound and wardrobe designers. Introduction to budgeting, scheduling, and script breakdowns. Prerequisite: CMI 395
- CMI 397. Practicum** 1-3 cr.  
Practical application of student's field of study in a project environment. Consent of instructor required.
- CMI 398. Special Topics** 1-3 cr.  
Course addresses specific subjects and issues as identified by department. Topics and credits to be announced in the Schedule of classes. May be repeated up to 9 credits.
- CMI 400. Directed Studies** 1-6 cr.  
Directed study course in CMI under the supervision of a CMI faculty member. May be repeated up to 9 credits.
- CMI 401. Motion Capture Techniques** 3 cr.  
Implement industry standard MOCAP techniques to capture and integrate performance for movie making and 3D animation and game production. Prerequisite(s): CMI 260, CMI 290 and CMI 270. Restricted to ANVE, DFM majors.

- CMI 420. Short Film Production** 3 cr.  
Students work in teams with rotating crews to write, produce, direct and edit individual and group projects-ultimately demonstrating growing confidence with production equipment and professional practices. May be taken up to 6 credits. Consent of instructor required. Prerequisite(s): CMI 200, CMI 216, CMI 205, CMI 235, CMI 309 and CMI 395. Pre/Corequisite(s): CMI 328.Restricted to ANVE, DFM majors.
- CMI 433. 3-D Sets and Environments** 3 cr.  
Digital environment design and creation for movies and games from concept to production; including illustration, modeling, matte painting, texturing, lighting, rendering, integration, and camera projection. Prerequisite(s): CMI 260, CMI 280, and CMI 233 or consent of instructor. Restricted to ANVE, DFM majors.
- CMI 441. Visual Effects II** 3 cr.  
Advanced integration of live action footage and computer generated imagery, including high dynamic range imagery, photogrammetry, compositing, 3D animation and rendering. Consent of instructor required. Prerequisite(s): CMI 341.Restricted to ANVE, DFM majors.
- CMI 450. Advanced 2-D Animation** 3 cr.  
Advanced techniques in two dimensional animation including motion graphics and integration of live action. Prerequisite: CMI 350
- CMI 451. Effects Animation & Dynamic Simulation** 3 cr.  
Overview of 3D dynamic simulations and effects. Creative projects and practical examples including fluids, particles, fields, soft body, and rigid body techniques. Consent of instructor required. Prerequisite(s): CMI 260, CMI 280, CMI 290 or permission of instructor.Restricted to ANVE, DFM majors.
- CMI 460. Technical Direction for Animation** 3 cr.  
Principles and practices of current animation technical development. Preliminary and detailed technical design, including advanced rigging, UI customization, Mel scripting, expressions, rendering systems, and pipeline development. Prerequisite(s): CMI 260 and CMI 280, CMI 270, CMI 290 or consent of instructor.Restricted to ANVE, DFM majors.
- CMI 470. Short 2-D Animation Production** 3 cr.  
This is a full-scale animation production class where students will be divided into teams according to the animation skills they have demonstrated in the beginning, intermediate, and advanced classes. Each team member will specialize in one important facet of the production process: character animation, background painting, technical direction, coloring, or story development and storyboarding. 4 to 8 minute animated shorts will be produced. Prerequisite(s): CMI 450, CMI 361.
- CMI 480. Screenwriting II** 3 cr.  
Students will write 2 short scripts, 10-15 pages each throughout the semester. Focus will be on learning how to take notes and rewrite. Script analysis will be in a workshop format. Scripts will be read and discussed, scenes performed and reactions analyzed to consider effect of dialogue, character development, etc. Prerequisite(s): ENGL 309 or CMI 309 or THTR 306 or consent of instructor.Restricted to ENGL, DFM, ANVE majors. Cross-listed with: ENGL 480
- CMI 490. Advanced Screenwriting** 3 cr.  
Students will prepare a 30-60 page screenplay. Script analysis will be in an advanced workshop format. Scripts will be read and discussed, scenes performed and reactions analyzed to consider effect of dialogue, character development, etc. This course is aimed at preparing writers for the professional market. Consent of instructor required. Restricted to ENGL, DFM, ANVE majors. Crosslisted with: ENGL 491
- CMI 495. Internship** 1-3 cr.  
Placement in a production facility and supervised experience. Required. With CMI advisor approval only.
- CMI 496. Media Law/Ethics** 3 cr.  
Overview of legal & ethical issues in creative media elements of business and commercial law. This class will focus on the fundamentals of entertainment law by exploring the business and legal relationships within film industries, and animation. Learn to anticipate and avoid legal problems prior to production. Key issues in the area of copyright law, sources of financing, distribution agreements; insurance and union consideration will be discussed.Restricted to ANVE, DFM majors.
- CMI 497. Portfolio Design and Development** 3 cr.  
Advanced graphic design projects with an emphasis on conceptual development, portfolio preparation, and professional practices. Refine general marketing strategies, personal portfolio, and resumes. Define, target, and penetrate personal target markets. Students develop individual promotional/demo packages. Prerequisites: Consent of instructor.
- CMI 498. Final Year Senior Project I: Production and Post Production** 3-6 cr.  
Senior thesis will be a yearlong concentration on a project guided by more than one faculty member. Will be narrative-driven and have an end product; short film, documentary, experimental 3-D animated short, or pilot and treatment for a TV series. Emphasis will be on preproduction. Student will produce a professional quality product that will help gain entry into a professional situation or graduate school. Prerequisite(s): Consent of instructor.
- CMI 499. Final Year Senior Project II: Production and Post Production** 3-6 cr.  
The senior thesis will be a year long concentration on a project guided by more than one faculty member. Will be narrative driven and have an end product; short film, documentary, experimental, 3-D animated short, or pilot and treatment for a TV series. Student will produce a professional quality product that will help gain entry into a professional situation or graduate school. Consent of instructor required. Prerequisite(s): CMI 498 and Consent of Instructor.
- CMT- CREATIVE MEDIA TECHNOLOGY**
- CMT 100. Introduction to Visual Communications** 3 cr.  
Overview of the process of crafting a digital product from conception to final. Incorporates basic principles of art and design, typography, layout, color and imagery, logos and advertising basics. Same as OEGR 105.
- CMT 108. Introduction to Media Technologies** 1-3 cr.  
Introduction to various media technologies. Restricted to: Community Colleges only. Crosslisted with: OEGR 108
- CMT 110. Introduction to Web Design** 1 cr.  
Basics of creating simple web sites for personal use.
- CMT 115. Digital Photography and Imaging I** 3 cr. (2+2P)  
Principles and techniques of photography using digital equipment with an emphasis on lighting, focus, and composition.
- CMT 120. Introduction to Creative Media** 3 cr. (2+2P)  
Exploration and discovery of the creative processes through art, music, theater, narrative, and other avenues.
- CMT 126. Film Crew Training I** 9 cr.  
This course was designed in collaboration with the NM IATSE Local 480 union and the NM Film Office and focuses on providing hands-on training for students wishing to work on film crews. The course will offer an overview of the primary below-the-line craft areas of film production. Restricted to: Community Colleges only.
- CMT 130. Introduction to Web Design** 3 cr. (2+2P)  
Introduction to web development techniques, theory, and design. Incorporates HTML and industry-standard web editing software in developing various web sites. Community Colleges only.
- CMT 135. Introduction to 3D Computer Animation** 3 cr. (2+4P)  
Learning to work in a 3D environment. Introduction to the basics of modeling, animation, dynamics, and rendering. Working with polygons, NURBS and subdivisions, and editing in multiple interfaces. May be repeated for a maximum of 6 credits.
- CMT 140. Print Media I** 3 cr. (2+2P)  
Creation and design of publications and presentation materials using page layout software. May be repeated for a maximum of 6 credits.
- CMT 142. Computer Illustration** 3 cr. (2+2P)  
Preparation of digital graphics with a vector or draw program for use in print, web, video, animations, and multimedia. May be repeated for a maximum of 6 credits.
- CMT 145. Image Processing I** 3 cr. (2+2P)  
Design and creation of digital graphics using a raster or bitmap program for use in print, multimedia, video, animation and web. May be repeated for a maximum of 6 credits.
- CMT 146. Digital Foundations** 4 cr. (2+4P)  
Accelerated course covering concepts and techniques of industry-standard raster and vector graphics programs with focus on design and application. May be repeated for a maximum of 8 credits.
- CMT 148. Digital Signage Systems** 3 cr. (2+2P)  
A compare and contrast of different digital signage systems and the selection as needed for environment, lighting, and purpose. Topics cover resolution and network considerations, we well as the computer system and digital storage media for digital signage systems.
- CMT 150. 2D Animation** 3 cr. (2+2P)  
Concepts and techniques in storyboarding and creating interactive 2D animations for web, multimedia and video. Prerequisites: CMT 142 or CMT 146.
- CMT 151. Evolution of Electronic Games** 3 cr. (2+2P)  
Focus on the evolution of video games and how they have shaped mainstream entertainment. May be repeated up to 6 credits.



- CMT 155. Selected Topics 1-4 cr.  
Specific titles to be announced in the Schedule of Classes. May be repeated for a maximum of 18 credits. Same as OEGR 155.
- CMT 156. Film Crew Training II 9 cr.  
The purpose of this course is to provide applied training in a specific film production crew craft area, in which a student has decided to specialize. The various craft areas include but are not limited to, Art Dept., Grip., Electric, Sound, Production Office, Script Supervision, Props, Set Dressing, Locations, Special Effects, Hair/Makeup, Wardrobe, Production Assistant/Set Operations. Prerequisite(s): CMT 126. Restricted to: Community Colleges only.
- CMT 160. Modeling and Animation 3 cr. (2+2P)  
Building on student's knowledge of 2D animation, covers modeling and animating objects and scenes in a 3D environment using various camera and lighting effects. May be repeated for a maximum of 6 credits. Prerequisite: CMT 150.
- CMT 165. Writing and Storyboarding 3 cr. (2+2P)  
Learning good writing principles to create storyboards and scripts that communicate the overall picture of the project, timing, scene complexity, emotion, and resource requirements. Prerequisite: CMT 135 or CMT 160.
- CMT 170. History of Film: A Global Perspective 3 cr.  
Explores the history of cinema from the earliest 19th century developments to the present digital video revolution. Offers students a broader base of understanding of the tools and methodologies used in the craft.
- CMT 175. 3-D Character Design 3 cr. (2+4P)  
Focus on designing a character and then taking that design and building it in 3D using intermediate modeling techniques. Prerequisite: CMT 135 or CMT 160. May be repeated for a maximum of 6 credits.
- CMT 180. Principles of Media Design 3 cr. (2+2P)  
Techniques and theories of design principles, including layout foundations, logo building, type, color, and story-boarding and their application to print, web, animation and video. Prerequisite: CMT 142 or CMT 146.
- CMT 182. Environmental Modeling, Shading and Lighting 3 cr. (2+4P)  
Modeling design techniques to create natural and architectural environments to be used for animated films and gaming. Study of various lighting techniques, shading and shadowing. Prerequisite: CMT 135 or CMT 160.
- CMT 185. 3D Shading and Lighting Techniques 3 cr. (2+4P)  
Study of various global, scene and character lighting techniques, shading and shadowing, and creating atmospheres and reflections that bring computer generated 3D scenes to life. Examines environmental and studio lighting to bring real life experience into the digital production process. Prerequisite: CMT 135 or CMT 160.
- CMT 190. Digital Video Production I 3 cr. (2+4P)  
A hands-on study of the tools and techniques used to produce the independent video. Through the production of various short projects, the student explores how the ideas of the writer/director are translated into a visual story. May be repeated for a maximum of 6 credits.
- CMT 191. Digital Content Integration 3 cr. (2+2P)  
An overview of available prepackaged content for digital signage applications. Topics address the use of RSS feeds, widgets, and other pre-produced content in digital signage displays. Topics will also include file format conversion, both free and commercial.
- CMT 192. Acting for the Camera 3 cr. (2+2P)  
Covers acting techniques, body movement, monologues and auditioning. Students will gain professional acting experience on camera as well as learn what is expected on a film or video set. Restricted to: Community College campuses only.
- CMT 195. Digital Video Editing I 3 cr. (2+2P)  
A study of the basic tools and techniques of non-linear digital video editing. May be repeated for a maximum of 6 credits.
- CMT 200. Critical Game Studies 3 cr. (2+2P)  
Focus on creating a complete design document utilizing techniques and standards used in the industry today. May be repeated for up to 6 credits. Prerequisite: CMT 175.
- CMT 205. Cinematography 3 cr. (2+2P)  
Theory and techniques of visual design in cinematography and the aesthetics of lighting. May be repeated for a maximum of 6 credits. Prerequisite(s): CMT 180 and CMT 190. Restricted to: Community Colleges only.
- CMT 206. Principles of Sound 3 cr. (2+2P)  
Study of soundtrack design theory, and the use of audio editing software that is compatible with media editing software to create soundtracks for different visual media. Pre/Corequisite(s): CMT 195. Restricted to: Community Colleges only.
- CMT 210. Digital Video Production II 3 cr. (2+2P)  
Advanced techniques of the tools and application of professional film making. Prerequisite: CMT 190. May be repeated for a maximum of 6 credits.
- CMT 215. Digital Video Editing II 3 cr. (2+2P)  
Advanced features of digital video, audio/music, and titling production software. Included are color correction, vector scopes, motion effects, and advanced editing techniques used by filmmakers. Prerequisite: CMT 195 or OEGR 210. May be repeated for a maximum of 6 credits. Same OEGR 215.
- CMT 216. Digital Photography and Imaging II 3 cr. (2+2P)  
Provide understanding and skills needed for advanced digital capture, editing, optimizing and manipulating photographic images for print, web and multimedia applications. The course will prepare students to make more advanced technical and more refined aesthetic decisions relative to specific photographic applications. Prerequisite(s): CMT 115. Restricted to: Alamogordo campus, Carlsbad campus, Dona Ana campus.
- CMT 220. Environmental Scene Design 3 cr. (2+4P)  
Modeling design techniques used to create environments and scenes for use in animated films and games. Investigation of both natural and architectural environments to be recreated in the virtual world. Prerequisite: CMT 135 or CMT 160.
- CMT 221. Cooperative Experience 1-3 cr.  
Student will be employed in approved work site; supervised and rated by employer and instructor. Each credit requires specific number of hours of on-the-job work experience. Prerequisite: consent of instructor. May be repeated for a maximum of 9 credits. Graded S/U.
- CMT 222. Pre-production Management 3 cr. (2+2P)  
Pre-production planning paperwork breakdowns, budgeting, and scheduling; taking a project from start to finish from a producers standpoint. Prerequisite: CMT 190.
- CMT 223. Media Production Services 1-3 cr.  
A design studio environment in which students obtain real-world experience while providing service to college and non-profit associations with faculty supervision using a variety of media. Can be used with permission to fulfill cooperative requirement. Prerequisite: CMT 180 or ART 163. May be repeated for a maximum of 6 credits.
- CMT 225. Anatomical Character Design 3 cr. (2+4P)  
Focus on building anatomy-based 3D characters. Advanced study in NURBS, subdivisions, and polygon modeling techniques used to create fully functional and realist models. Prerequisite: CMT 175. May be repeated for a maximum of 6 credits.
- CMT 226. Film Crew Cooperative Experience 3-6 cr.  
Industry production experience in specific craft areas for film crew technicians who have successfully completed two semesters of FTTP. Prerequisite(s): CMT 156. Restricted to: Dona Ana campus, Carlsbad campus.
- CMT 227. Advanced Character Animation 3 cr. (2+2P)  
Focus on complex rigging techniques as well as utilizing advanced animation functions to blend multiple animations into complex animations. May be repeated for a maximum of 6 credits. Prerequisite: CMT 175.
- CMT 228. Level Design Concepts 3 cr. (2+2P)  
Focus on the design and creation of video game levels. Dealing with the challenges and pitfalls of different video game genres. May be repeated for a maximum of 6 credits. Prerequisite: CMT 200
- CMT 230. Web Design II 3 cr. (2+2P)  
Creating and managing well-designed, organized web sites using HTML and web development software. May be repeated for a maximum of 6 credits. Prerequisite(s): CMT 130. Restricted to: Community Colleges only. Crosslisted with: OEGR 230
- CMT 232. Script Development & Storyboarding 3 cr.  
Examines effective writing principles for creating storyboards that communicate the overall picture of a project, timing, scene complexity, emotion and resource requirements. Same as ENGL 232 and CMI 232.
- CMT 235. Web Design for Small Businesses 3 cr. (2+2P)  
Technology and techniques for designing and building a web presence for small business. May be repeated for a maximum of 6 credits. Prerequisite(s): CMT 130. Restricted to: Community Colleges only. Cross-listed with: OEGR 235
- CMT 236. Digital Audio Fundamentals 3 cr. (2+2P)  
Advanced digital audio post production and recording techniques using current entertainment industry-standard software and hardware. Restricted to: Community Colleges only.



- CMT 237. Digital Audio Editing 3 cr. (2+2P)  
Techniques in digital audio composing, recording, editing, processing, MIDI & virtual instruments. Additional course topics include signal routing and processing, digital console design, audio signal paths, digital plug-ins, audio file management. Prerequisite(s): CMT 236. Restricted to: Community colleges.
- CMT 238. Digital Signage Content Management 3 cr. (2+2P)  
An overview of PC-based digital signage software for content management. Topics include proper selection of software based on client needs; software installation and management; digital content playlists and scheduling.
- CMT 239. Digital Content Management for Mobile Devices 3 cr. (2+2P)  
This course will cover mobile device content management such as uploading and scheduling for personal content delivery. Topics include the selection of content management software for mobile devices and the installation and hardware requirements for use, accepted practices for distribution of content on mobile devices.
- CMT 240. Print Media II 3 cr. (2+2P)  
Refining of technical design skills using advanced features of page layout software in preparing a variety of business-related documents. Prerequisite: CMT 140 or OEGR 140. May be repeated for a maximum of 6 credits.
- CMT 241. Game Animation I 3 cr. (2+2P)  
Introduction to basic game play theory of 3D game design, including levels, character development and game playing concepts. Prerequisite: CMT 160.
- CMT 242. Advanced Computer Illustration 3 cr. (2+2P)  
Advanced techniques in 2D vector drawing and fundamentals of 3D illustration for use in print, web, and multimedia applications. Prerequisite: CMT 142. May be repeated for a maximum of 6 credits. Same as OEGR 270.
- CMT 245. Image Processing II 3 cr. (2+2P)  
Advanced techniques in editing and manipulation of raster images for digital graphics for print, multimedia and web. Prerequisite: CMT 145. May be repeated for a maximum of 6 credits. Same as OEGR 260.
- CMT 247. Production Audio 3 cr. (2+2P)  
Essential tools and techniques in: field and studio recording and mixing, environmental assessment, film set protocol, various microphones, audio documentation, wildlines, ambient audio. Prerequisite(s): CMT 190 and CMT 236. Restricted to: Community colleges.
- CMT 248. Music Production and Mastering 3 cr. (2+2P)  
Introduction to fundamental tools and techniques in music production and mastering. Including: microphones and microphone techniques, live and studio recording, editing, mixing, and introduction to mastering digital audio. Prerequisite(s): CMT 206 and CMT 236. Restricted to: Community colleges.
- CMT 250. Advanced Graphics for Digital Media 3 cr. (2+2P)  
Advanced techniques in design and creation of high-level 2D animations and interactive interfaces for web, multimedia, and video. Prerequisite: CMT 150. May be repeated for a maximum of 6 credits.
- CMT 251. Gaming Platform and Standards 3 cr. (2+2P)  
Focus on the different gaming platforms and their corresponding gaming demographics and standards. May be repeated for a maximum of 6 credits. Prerequisite: CMT 200.
- CMT 252. Game Tools and Techniques 3 cr. (2+2P)  
Focus on the different engines and gaming technologies that power the games of today. May be repeated for a maximum of 6 credits. Prerequisite: CMT 200.
- CMT 253. History of Animation 3 cr.  
Exploration of animation as art form and industry. Material spans from the roots of animation before film technology to modern commercial and artistic animated productions. Restricted to: Community colleges.
- CMT 254. History of Media Design 3 cr.  
An introduction to the principles of design history and theory within a chronological framework of historical and emerging media.
- CMT 255. Special Topics 1-4 cr.  
Specific topics to be announced in the Schedule of Classes. May be repeated for a maximum of 18 credits.
- CMT 256. Typography 3 cr.  
Foundation in typography with an emphasis on history of typography and the practical application and impact of font choices for print, web, animation and video. Deals with studies in font or letter construction and font choices focusing on design, application, incorporation, and visual impact. Prerequisite(s): CMT 142. Restricted to: Community Colleges only.
- CMT 258. Advanced Camera Techniques 3 cr. (2+2P)  
Professional camera techniques and training for electronic news gathering and studio filmmaking. Utilizes high-end handheld shooting techniques, cranes, dollies, and steadicam training. May be repeated for a maximum of 6 credits. Prerequisite: CMT 190.
- CMT 260. 3D Special Effects 3 cr. (2+4P)  
Creating advanced virtual special effects for both rigid and soft bodies. Using MEL, dynamic principles, mixing nodes, and advanced particle systems. How to drive particles over surfaces, add texture to flow, create surface tensions, and use collision events to drive texture. Study of integrating computer-generated images with real-life video and audio. Prerequisite: CMT 160 or CMT 225.
- CMT 261. 3D Digital Sculpting 3 cr. (2+2P)  
Learn the fundamentals of 3D digital sculpting with industry standard software. Work with brushes, meshes, masks, posing models with the transpose tool, and 3D layers. Prerequisite(s): CMT 160. Restricted to: Community colleges.
- CMT 265. Personal Character Development 3 cr. (2+4P)  
Focus on the development of personal character(s), from sketch to render. Develop complete biographies of character, then build, skin and animate with as many personal attributes as possible. Prerequisite: CMT 225.
- CMT 266. Audio Postproduction 3 cr. (2+2P)  
Application of techniques for the final postproduction phase of audio track editing, mixing and mastering for film, music, and animation; including Automated Dialog Replacement (ADR) and foley. Prerequisite(s): CMT 206, CMT 236, CMT 237, CMT 247 & CMT 248. Restricted to: Community colleges.
- CMT 271. Digital Video Game Theory and Animation II 3 cr.  
Continuation of CMT 270. Prerequisite: CMT 270.
- CMT 275. Advanced Web Techniques 3 cr. (2+2P)  
Creating and managing complex web sites using advanced techniques and tools. Prerequisites: CMT 145 and CMT 230. May be repeated for a maximum of 6 credits. Community Colleges only.
- CMT 280. Interactive Design 3 cr. (2+2P)  
Design and development of interactive multimedia projects such as gaming, that incorporate graphics, video, sound and animation. Prerequisite: CMT 150 or CMT 160. May be repeated for a maximum of 6 credits.
- CMT 285. Print Media III 3 cr. (2+2P)  
Refinement of skills needed to prepare a variety of documents for print and the service bureau. Prerequisite: CMT 140 or CMT 240. May be repeated for a maximum of 6 credits.
- CMT 287. Personal Animation Development 3 cr. (2+4P)  
Students choose from producing an original animated short OR research, gather, develop and prepare concepts, models and materials to be used for their Final Workshop Project. (Should be taken semester prior to Workshop.) Consent of instructor required.
- CMT 290. Advanced 3d Animation Workshop A 3 cr. (2+4P)  
Program capstone. Students will utilize the skills learned in the program to produce their final animation. Group integrated projects are strongly recommended to emulate a real-work animation studio environment. Prerequisite: consent of instructor. Corequisite: CMT 291. May be repeated for a maximum of 9 credits.
- CMT 291. Advanced 3d Animation Workshop B 3 cr. (2+4P)  
Program capstone. Students will utilize the skills learned in the program to produce their final animation. Group integrated projects are strongly recommended to emulate a real-work animation studio environment. Prerequisite: consent of instructor. Corequisite: CMT 290. May be repeated for a maximum of 9 credits.
- CMT 292. Creative Media Studio 3 cr. (2+2P)  
A studio environment where students specialize in creating film-festival quality and portfolio-ready projects under the supervision of faculty. Prerequisites: CMT 190 and CMT 195 or CMT 160. May be repeated for a maximum of 6 credits.
- CMT 293. Advanced Digital Signage Content Management 3 cr. (2+2P)  
An overview of proprietary industry software used to manage digital content and perform content upload, playlist creation, and scheduling. Topics include proper selection of a commercial digital content management system based on client needs; installation and management; digital content playlists and scheduling.
- CMT 295. Professional Portfolio Design and Development 1-3 cr.  
Personalized design and creation of the student's professional portfolio including hard-copy, demo reel, and online. Prerequisite: consent of instructor. May be repeated for a maximum of 6 credits. Same as OEGR 280.

**CMT 298. Independent Study** 1-3 cr.  
Individual studies directed by consenting faculty with prior approval of department head. Prerequisite: minimum GPA of 3.0 and sophomore standing. May be repeated for a maximum of 6 credits. Same as OEGR 298.

### COLL- COLLEGE STUDIES

**COLL 101. College/Life Success** 1-3 cr.  
Provides students with an opportunity to cultivate the skills, values, and attitudes necessary to become confident, capable students, and contributing community members. Topics include time management, memory techniques, relationships, health issues, money management, and college and community resources.

**COLL 103. Managing Your Money** 1 cr.  
Principles and strategies for effective money management. Includes financial goal setting, both short and long term. Explores the relationship between career and income earning potential. Explores issues of credit and debt management and prevention of identity theft. Taught completely on-line via webCT; a mini-semester course.

**COLL 108. Academic Reading and Study Skills** 1-4 cr.  
Introduction to and practice with strategies for effective reading and studying at the college level. Provides laboratory.

**COLL 111. Academic Skills for Mathematics** 1-3 cr.  
Emphasis on study skills for success in math, up to the calculus level, tailored to meet individual student needs. Topics include test preparation strategies, efficient time management and practice methods, and introduction to and practice with learning software. Consent of instructor required.

**COLL 112. Academic Skills for General Science** 1-3 cr.  
Emphasis on study skills; introduction of atoms, molecules, ions, bonding, measurements, calculations, formulas, physical and chemical properties, cell structure, metabolism, fundamental laws, energy relationships, and laboratory techniques which are appropriate for studying any of the sciences. Prerequisite: consent of instructor.

**COLL 120. Career Exploration** 1 cr.  
Survey of careers possible with community college associate degrees. Information on how to make a career choice.

**COLL 122. Introduction to learning in an Electronic Environment** 1-3 cr.  
Extends methods of learning and thinking by using communication technology. Interaction with a wide range of electronic information. Focus on technical and student skills necessary for distance learning.

**COLL 155. Special Topics** 1-4 cr.  
Covers specific study skills and critical thinking topics. Specific sub-titles to be listed in the Schedule of Classes. May be repeated for a maximum of 8 credits.

**COLL 185. Prior Learning: Professional Portfolio** 1-6 cr.  
Creating a portfolio that outlines professional and educational experiences. Life skills and education learned through workplace training and non-traditional education experiences will be evaluated for consideration of awarding college credit. Students will draft a life history paper, prepare a professional resume, assemble supporting documentation and evidence in support of their petition to receive college credit for prior learning. Culminating activities will include an oral presentation of the portfolio contents. Prerequisite: CCDE 110N or equivalent. Graded S/U.

**COLL 201. Critical Thinking Skills** 3 cr.  
Introduction to critical thinking processes. Develops higher order thinking necessary to evaluate clearly, logically, and accurately one's academic and life experiences. Practical emphases on assertive thinking and perspectives. Prerequisite: placement scores for CCDE 110N or higher.

### COMM- COMMUNICATION STUDIES

**COMM 253G. Public Speaking** 3 cr.  
Principles of effective public speaking, with emphasis on preparing and delivering well-organized, logical, and persuasive arguments adapted to different audiences.

**COMM 265G. Principles of Human Communication** 3 cr.  
Study and practice of interpersonal, small group, and presentational skills essential to effective social, business, and professional interaction.

**COMM 285. Survey of Communication Theory** 3 cr.  
Exploration of concepts and methods of study in oral communication. Primarily for majors.

**COMM 290. Independent Study** 1-3 cr.  
Individualized, self-paced projects for students with a special interest in communication topics. Prerequisites: COMM 265G and sophomore standing. May be repeated for a maximum of 6 credits.

**COMM 291. Special Topics** 1-3 cr.  
Specific subjects and credits to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits.

**COMM 305. Communication Research Methods** 3 cr.  
Introductory course in communication research. Emphasis on how to be an effective consumer of research.

**COMM 351. Persuasion Theory and Practice** 3 cr.  
Training in understanding and applying the principles and techniques of argumentation and persuasion.

**COMM 353. Advanced Public Speaking** 3 cr.  
This is an advanced course in the composition and delivery of speeches. It extends the concepts taught in COMM 253G. Prerequisite: COMM 253G or COMM 265G, or consent of instructor.

**COMM 370. Organizational Communication** 3 cr.  
Communication strategies and patterns of private and governmental organizations, including research on the communication process.

**COMM 376. Communication and Culture** 3 cr.  
Cultural and intercultural communication theory and behavior, with a concentration on the development of specific communication skills which should facilitate effective intercultural communication.

**COMM 377. Conflict Management** 3 cr.  
Communication strategies to manage and negotiate conflict in intrapersonal, interpersonal, group, and organizational settings.

**COMM 384. Interpersonal Communication** 3 cr.  
Theories of interpersonal communication and relational communication including study of relevant models, contexts and constructs.

**COMM 425. Small Group Communication** 3 cr.  
Principles and methods of modern group discussion with emphasis on the role of the group in problem solving.

**COMM 440. Political Communication** 3 cr.  
Presidential and congressional campaigns, political persuasion techniques, political advertising, power in language, and media aspects of political information. Ideology, resistance to political manipulation, and dependence of democracies on communication.

**COMM 445. Communication, Ethnicity, and Prejudice** 3 cr.  
Examines the political aspects of communication about ethnicity and between ethnic groups. Topics include how people think about race categories, ethnicity, and prejudice; how communication is affected by prejudice, and how communication can be improved by dealing with stereotypes, prejudice, and discrimination.

**COMM 450. Technologies of Human Communication** 3 cr.  
Development and evolution of human communication technologies from prehistory through the future of computer-mediated communication networks. Examines behavioral, cognitive, social, cultural, and political issues of new communication technologies and their use and management. Prerequisite: junior or senior standing.

**COMM 455. Fundamentals of Communication and National Security** 3 cr.  
This course addresses communication perspectives informing national security, strategic intelligence, and the intelligence process. Students will examine U.S. national security history, policy, the development of the Intelligence Community, and intelligence as processes of communication. This course serves as an introduction to national security studies.

**COMM 456. Communication and the Intelligence Cycle** 3 cr.  
The course addresses communication requirements and the technical, cognitive, and cultural complexity of the collaborative research environment. Students participate in novel, team-based problem scenarios that provide the foundation for acquiring advanced cognitive analytic methods and strategies. Students will engage in interdisciplinary information science processes and will develop and present analytic products responding to national security requirements.

**COMM 457. Strategic Communication and Public Diplomacy** 3 cr.  
This course covers history, theory, and research related to the use of communication to change attitudes in favor of U.S. national security interests. Students will examine the use of strategic communication and influence in diplomacy, intelligence, and military communities in terms of specific strategies, effects, and issues. Students will learn to distinguish public diplomacy, information operations, public affairs, and other forms of political communication that are used by the U.S. government to persuade target populations about American interests and goals. Topics include soft power, intelligence-based negotiation processes, and research methods used to identify influence techniques or groups that threaten U.S. national security.

- COMM 458. Intercultural Communication and National Security 3 cr.  
This course provides a concentration on cultural factors in international affairs and conflicts, how culture affects perceptions of national interests, and the relationship of U.S. national security to understand the general and political cultures of other nations. Students will integrate cultural and intercultural communication theory and behavior, with an emphasis on the development of specific communication skills to facilitate developing cultural knowledge in government and political contexts. Students will learn how to study the cultural factors that affect international conflicts and how strategic communication should address such cultural factors.
- COMM 460. Deception and Communication 3 cr.  
Deceptive communication including nonverbal indicators of lies, types of lies, and influence of relationships on lying behavior and interpretation.
- COMM 462. Family Communication 3 cr.  
A communication perspective on traditional and nontraditional family configurations, roles, interaction patterns, and conflict. Includes an examination of media depictions of families and family interaction, as well as current social and political issues related to the family. Same as W S 462 and FCS 462.
- COMM 463. Communication and Gender 3 cr.  
Study of communication, gender and culture, including theoretical approaches to gender development, the implications of gender identity, gendered patterns of verbal and nonverbal communication, and the rhetorical dimensions of gender. Discussion of gendered communication in the workplace, as well as the influence of media on gender. Same as W S 463.
- COMM 465. Nonverbal Communication 3 cr.  
Study of and experimentation with nonverbal aspects of human communication as vital components of the total communication process.
- COMM 470. Leadership Communication 3 cr.  
Examination of traditional theories and concepts of leader-follower dynamics; presentation of cognitive, systems, and symbolic interpretative views of leadership with an emphasis on persuasion and motivation in leader-follower interactions.
- COMM 475. International Communication 3 cr.  
Exploration of the forms and channels of communication substantially influenced by international cultural and political factors. Covers: global communication technology; news, information and entertainment flows; international diplomacy and negotiation, communication in war and peace.
- COMM 477. Environmental Communication 3 cr.  
Examines the link between communication and environment within the context of communication scholarship. Topics include sense of place, cultural approaches to interacting with environment as well as exploring current themes surrounding environment.
- COMM 480. Health Communication 3 cr.  
Examination of central issues in communication theory and practice as applied to health care. Includes communication in health care organizations, media dissemination of health information, role of communication in disease prevention and health promotion, and symbolic meaning of illness within cultures.
- COMM 483. Communication in Friendships and Romantic Relationships 3 cr.  
Examines communication in adult friendships and romantic relationships that do not have legal commitments. Includes trends in friendships, benefits and problems within cross and same-sex friendships and romances, gender differences in communication within adult friendships and romances and the communication of friendship and romance on the Internet. Prerequisite: COMM majors or consent of instructor.
- COMM 484. Verbal Communication 3 cr.  
Examination of rules governing conversational structures such as speech acts, action sequences, topics and topic shifts. Also covers humor in conversation and conversational control.
- COMM 485. International Teaching Assistant Development 3 cr.  
International teaching assistants will receive instruction in communicative skills to enable them to meet their responsibilities at NMSU. Course includes lectures, seminars, video-taped presentations, and tutorial sessions emphasizing pedagogic and presentation skills and styles. Prerequisite: consent of instructor.
- COMM 490. Independent Study 1-3 cr.  
Individualized, self-paced projects for advanced students. Prerequisites: COMM 265G and junior standing with consent of participating instructor. May be repeated for a maximum of 6 credits.
- COMM 491. Selected Topics 1-6 cr.  
Individual and/or group study of selected topics. To be identified by subtitle. Prerequisite: prior arrangement with faculty supervisor(s). May be repeated for a maximum of 12 credits.
- COMM 495. Communication Internship 3 cr.  
Internship opportunity to apply what has been learned to a real-world situation. Prerequisite: junior standing and 3.0 GPA in major. May be repeated for a maximum of 6 credits. Restricted to majors.
- CTFM- CLOTHING, TEXTILES, AND FASHION MERCHANDISING**
- CTFM 178. Fundamentals of Fashion 3 cr.  
Survey of the fashion business from fiber to end product.
- CTFM 255. Applied Principles in Clothing Selection 3 cr.  
Application of art principles in the study of clothing, emphasizing fashion terminology, for the application of clothing selection to personal and client use. Interrelationships of clothing and behavior from the aspects of culture and business environment are explored.
- CTFM 270. Fashion Illustration 3 cr. (1+4P)  
Human figure sketches and fashion illustration as a form of communication. Emphasis on color, proportion, cut, and fabric detail. Prerequisites: CTFM 255, ART 110G.
- CTFM 273. Concepts in Apparel Construction 3 cr. (1+4P)  
Application of generalizations and principles of garment construction to varied fabrics and designs. Analysis and evaluation of apparel merchandise with emphasis on the quality of garment construction. Restricted to: Main campus only. Restricted to CTFM, FCSE majors.
- CTFM 300. Special Topics 1-4 cr.  
Specific subjects and credits to be announced in the Schedule of Classes. Maximum of 4 credits per semester and a total of 9 credits toward a degree.
- CTFM 366. Historic Fashion 3 cr.  
Clothing produced by and for families from ancient times to the present. Prerequisite(s): CTFM 255 and CTFM 270. Restricted to CTFM majors.
- CTFM 371. Textile Science 3 cr. (1+4P)  
Study of fabrics used for modern clothing, furnishings, and miscellaneous end uses. Textiles testing procedures explored. Prerequisites: CHEM 110G or consent of instructor.
- CTFM 372. Fashion Merchandising 3 cr.  
The apparel industry from designing through manufacturing and distribution to retailers. Prerequisites: CTFM 178, and CTFM 255.
- CTFM 373. Advanced Apparel Techniques 3 cr.  
This course builds upon concepts introduced in Concepts in Apparel Construction. An in-depth study of fabric selection, advanced garment construction and tailoring. New technologies applied to sewing construction will be explored. The use of computerized sewing machines will be incorporated. Prerequisite(s): CTFM 255 and CTFM 273. Restricted to CTFM majors.
- CTFM 384. Clothing for Special Needs 3 cr.  
Selection, adaptation, and design of clothing that is functional and attractive for special needs populations such as for active sportswear, the handicapped, the elderly, and various specialty populations. Prerequisite: consent of instructor.
- CTFM 402. Field Experience Marketing Training 3-6 cr.  
Practical experience in clothing manufacturing or retailing. Supervised by resident faculty and supervisor at the work site. Report required. Prerequisite: junior or senior standing, student must have completed half of the CTFM degree requirements, CTFM 372, an overall GPA of at least 2.5 and consent of instructor. May be repeated for a maximum of 6 credits. Restricted to majors.
- CTFM 460. Cultural Perspectives in Dress 3 cr.  
Explores the social, psychological and cultural aspects of dress and appearance which includes the relationship of dress to physical and social environments, aesthetic and personal expression and cultural ideas and values. Prerequisite(s): CTFM 255 and CTFM 366.
- CTFM 470. Global Fashion Industry Trends 3 cr.  
Exploration of fashion industry trends in a global setting. Current consumer patterns and future trends will be analyzed. Prerequisite(s): Junior, senior, graduate standing, or consent of instructor.
- CTFM 474. Fashion Promotion 3 cr.  
Application of media to the communication of clothing information to the public. Prerequisite: CTFM 372 or consent of instructor.
- CTFM 475. Fashion Buying 3 cr.  
Fundamental principles and procedures for successful merchandising of fashion goods, responsibilities of buyers, fashion trends, consumer demands, and merchandising arithmetic. Prerequisites: ACCT 251, CTFM 372, and CTFM 474.



CTFM 476. Apparel Design by Draping 3 cr. (1+4P)  
Theory and application of design in various fabrics and styles using three-dimensional forms in solving problems and developing designs. Prerequisite(s): CTFM 255, CTFM 273, CTFM 373. Restricted to CTFM majors.

CTFM 478. Apparel Design Through Flat Pattern 3 cr.  
This course builds upon concepts introduced in Apparel Design by Draping. Examines the process of flat-pattern design and includes an expanded section on design analysis. Consent of instructor required. Prerequisite(s): CTFM 273, CTFM 373, CTFM 476. Restricted to CTFM majors.

CTFM 492. Special Problems 1-4 cr.  
Individual research study in a selected subject area of family and consumer sciences. Maximum of 4 credits per semester and a total of 6 credits toward a degree.

### DANC- DANCE

DANC 101G. Dance Appreciation 3 cr.  
An investigation of movement, dance and choreographic work as a vehicle for understanding culture. Includes concepts in dance appreciation, themes and purposes of dance analysis of dance works, exposure to different styles of dance and understanding the roles and effects of major historical periods. Restricted to: Main campus only.

DANC 109. Argentine Tango I 1 cr.  
Introduction to skills and techniques of Argentine Tango.

DANC 110. Classical Spanish Dance I 1 cr.  
Introduction of castanets and basic classical Spanish dance vocabulary. Prerequisite: DANC 123. May be repeated for a maximum of 2 credits.

DANC 120. Ballet Folklorico I 1 cr.  
Introductory course in folklorico dances of New Mexico and Mexico. May be repeated for a maximum of 2 credits.

DANC 121. Western Dance 1 cr.  
Introductory Western dance, including two-step, polka, waltz, Western swing, and cotton-eyed Joe.

DANC 122. Introduction to Latin Social Dance 1 cr.  
Introduction to Latin social dance for non dance majors. Students will learn basic Latin dance technique and partnering work. Restricted to: Main campus only.

DANC 123. Ballet Technique I 1 cr.  
Introduction to basic ballet technique, vocabulary, and history. Includes practical application of anatomical placement, posture and control through participation and academic study. May be repeated for a maximum of 2 credits.

DANC 124. Jazz Technique I 1 cr.  
Introduction to basic jazz technique, styles, and history through participation and academic study. May be repeated for a maximum of 2 credits.

DANC 125. Introduction to Ballroom Dance 1 cr.  
Introduction to ballroom dance for non dance majors. Students will learn basic ballroom technique and partnering work. Restricted to: Main campus only.

DANC 126. Modern Dance Technique I 1 cr.  
Introduction to and development of basic modern dance technique, history, and aesthetics through participation and academic study. May be repeated for a maximum of 2 credits.

DANC 127. Tap Dance I 1 cr.  
Introduction to skills and techniques of tap dance. May be repeated for a maximum of 2 credits.

DANC 128. Social Dance 1 cr.  
Focused instruction in one or more specialized ballroom or Latin dance forms.

DANC 129. Flamenco I 1 cr.  
Introduction to skills and techniques of flamenco dance. May be repeated for a maximum of 2 credits.

DANC 203. Performance and Production I 1 cr.  
Participation in dance performance or administrative preparation under faculty direction. May be repeated for a maximum of 4 credits. Consent of instructor required. Restricted to: Main campus only.

DANC 204. Dance Sport I 1-2 cr.  
Performance-based, team formation dance in a variety of Latin and ballroom dances. Prerequisites: consent of instructor and one of DANC 121, DANC 122, DANC 125, or DANC 128. May be repeated for a maximum of 8 credits.

DANC 205. Dance Ensemble I 1-2 cr.  
Performance-based instruction for students pursuing a career in dance performance. Instruction includes dance repertory and choreography for stage, outdoor arenas, and site-specific areas. Consent of instructor required. May be repeated for a maximum of 12 credits. Consent of instructor required. Restricted to: Main campus only.

DANC 209. Argentine Tango II 1 cr.  
Intermediate study in Argentine tango, its cultural heritage and pedagogy methods. Prerequisite: consent of instructor. May be repeated for a maximum of 2 credits.

DANC 210. Classical Spanish II 2 cr. (1+3P)  
The study of theory, techniques, and practice of Classical Spanish at the intermediate level. Includes historical and cultural contexts of this art form. Prerequisite: DANC 110.

DANC 220. Ballet Folklorico II 2 cr. (1+3P)  
The study of theory, techniques, and practice of Ballet Folklorico at the intermediate level. Includes historical and cultural contexts of this art form. Prerequisite: Dance 120.

DANC 221. Intermediate Western Dance 1 cr.  
Advanced skills in two-step, waltz, polka, swing, and Western line dances. Prerequisite: DANC 121 or consent of instructor.

DANC 222. Latin Social Dance I (Bronze Level) 2 cr. (1+2P)  
Beginning level Latin dance technique, partnering work, and cultural significance through participation and academic study. Course must be passed with a grade of C or higher. Prerequisite(s): DANC 122 or consent of instructor.

DANC 223. Ballet Technique II 2 cr.  
Continued study of classical ballet technique, vocabulary, and history through participation and academic study. Prerequisite: DANC 123 or consent of instructor. May be repeated for a maximum of 4 credits.

DANC 224. Jazz Technique II 2 cr.  
Continued study of jazz technique and history through participation and academic study. Prerequisite: DANC 124 or consent of instructor. May be repeated for a maximum of 4 credits.

DANC 225. Ballroom Dance I 2 cr. (1+2P)  
Beginning level ballroom technique, partnering work, and cultural significance through participation and academic study. Course must be passed with a grade of C or higher. Prerequisite(s): DANC 125 or consent of instructor.

DANC 226. Modern Dance Technique II 2 cr.  
Continued study of postmodern dance technique and history through participation and academic study. Prerequisite: DANC 126 or consent of instructor. May be repeated for a maximum of 4 credits.

DANC 227. Tap Dance II 1 cr.  
Continued study of skills and techniques of tap dance at the advanced level. Prerequisite: DANC 127 or consent of instructor. May be repeated for a maximum of 2 credits.

DANC 229. Flamenco II 2 cr. (1+3P)  
The study of theory, techniques and practice of Flamenco at the intermediate level. Includes historical and cultural contexts of this art form. Prerequisite: Dance 129.

DANC 275. Dance Studio Management 3 cr.  
The study and practice of studio management. Includes study of financial procedures, marketing, entrepreneurship, leadership, management, fundraising and other related topics. Restricted to majors and minors.

DANC 280. Improvisation I 1 cr.  
Introduction and development of basic movement improvisation skills.

DANC 289. Principles of Choreography I 2 cr.  
Solo dance choreography technique. Course must be passed with a grade of C or higher. Consent of instructor required. Restricted to: Main campus only. Restricted to Dance Majors Dance Minors majors.

DANC 300. Dance Pedagogy I 3 cr.  
Teaching methods and class planning for dance curriculum at preschool and elementary school levels.

DANC 303. Performance and Production II 1 cr.  
Participation in dance performance or administrative preparation under faculty direction. May be repeated for a maximum of 4 credits. Prerequisite(s): DANC 203. Restricted to: Main campus only.

DANC 304. Dance Sport II 1-2 cr.  
Advanced performance-based, team formation dance in a variety of Latin and social dances. Prerequisite: consent of instructor and one of DANC 121, DANC 122, DANC 125, or DANC 128. May be repeated for a maximum of 8 credits.



- DANC 305. Dance Ensemble II** 1-2 cr.  
Advanced performance-based instruction for students pursuing a career in dance performance. Instruction includes dance repertory and choreography for stage, outdoor arenas, and site-specific areas. May be repeated for a maximum of 12 credits. Consent of instructor required. Restricted to: Main campus only.
- DANC 313. Dance Practicum** 1 cr.  
Directed learning experiences for careers in dance. Consent of instructor required. Prerequisite(s): DANC 300. Restricted to: Main campus only. Restricted to DANC majors.
- DANC 322. Latin Social Dance II (Silver Level)** 3 cr. (2+2P)  
Intermediate level Latin dance technique, partnering work, and cultural significance through participation and academic study with emphasis on performance. Course must be passed with a grade of C or higher. Consent of instructor required. Prerequisite(s): DANC 222. Restricted to: Main campus only.
- DANC 323. Ballet Technique III** 3 cr.  
Intermediate/advanced study of ballet technique, including vocabulary and history. Prerequisite: DANC 223 or consent of instructor. May be repeated for a maximum of 12 credits.
- DANC 324. Jazz Technique III** 3 cr.  
Advanced study of jazz dance, including vocabulary and history. Prerequisite: DANC 224 or consent of instructor. May be repeated for a maximum of 12 credits.
- DANC 325. Ballroom Dance II (Silver Level)** 3 cr. (2+2P)  
Intermediate level Ballroom technique, partnering work, and cultural significance through participation and academic study with emphasis on performance. Course must be passed with a grade of C or higher. Consent of instructor required. Prerequisite(s): DANC 225. Restricted to: Main campus only.
- DANC 326. Modern Dance III** 3 cr.  
Intermediately advanced-level modern dance technique and study of current dance aesthetics. Prerequisite: DANC 226 or consent of instructor. May be repeated for a maximum of 12 credits.
- DANC 329. Flamenco III** 2 cr.  
Advanced study in flamenco dance technique, its cultural history and pedagogy methods. Prerequisite: consent of instructor. May be repeated for a maximum of 8 credits.
- DANC 380. Improvisation II** 1 cr.  
Continued practice in movement improvisation with more complex examination of improvisational structures. Prerequisite: DANC 280.
- DANC 389. Principles of Choreography II** 2 cr.  
Continued investigation of the choreographic process with an emphasis on group choreography. Course must be passed with a grade of C or higher. Consent of instructor required. Prerequisite(s): DANC 289. Restricted to: Main campus only. Restricted to Dance majors Dance minors majors.
- DANC 400. Dance Pedagogy II** 3 cr.  
Teaching methods and class planning for dance curriculum at middle school and high school levels. Prerequisite: DANC 300 or consent of instructor.
- DANC 413. Dance Practicum II** 1 cr.  
Directed learning experiences for careers in dance. Course must be passed with a grade of C or higher. Consent of instructor required. Prerequisite(s): DANC 466. Restricted to: Main campus only.
- DANC 422. Latin Social Dance III (Gold Level)** 3 cr. (2+2P)  
Advanced level Latin dance technique and partnering work with choreography and performance emphasized. Includes cultural history and pedagogy methods. Course must be passed with a grade of C or higher. Consent of instructor required. Prerequisite(s): DANC 322. Restricted to: Main campus only. Restricted to DANC majors.
- DANC 423. Ballet Technique IV** 3 cr.  
Advanced study of ballet technique including vocabulary and history. Prerequisite: DANC 323 or consent of instructor. May be repeated for a maximum of 12 credits.
- DANC 424. Jazz Dance Technique IV** 3 cr.  
Advanced study of jazz dance techniques, including history and aesthetics. Prerequisites: DANC 324 or consent of instructor. May be repeated for a maximum of 6 credits.
- DANC 425. Ballroom Dance III (Gold Level)** 3 cr. (2+2P)  
Advanced level Ballroom technique and partnering work with choreography and performance emphasized. Includes cultural history and pedagogy methods. Minimum grade of C required to pass course. Consent of instructor required. Prerequisite(s): DANC 325. Restricted to: Main campus only. Restricted to DANC majors.
- DANC 426. Modern Dance Technique IV** 3 cr.  
Advanced study of modern technique, including history and aesthetics. Prerequisite: DANC 326 or consent of instructor. May be repeated for a maximum of 12 credits.
- DANC 450. Special Topics** 1-3 cr.  
Specific subjects to be announced in the Schedule of Classes. Prerequisite: consent of instructor.
- DANC 451V. World Dance** 3 cr.  
Examination of dance forms from a cross-cultural perspective, focusing on the role of dance in different cultures around the globe. Same as HON 347V.
- DANC 460. Dance History** 3 cr.  
History and development of dance forms from ancient cultures to today.
- DANC 465. Senior Culminating Experience** 1-6 cr.  
Exit course for graduating seniors. Students will apply comprehensive knowledge of performance and production and/or pedagogy experience, to culminate in a dance production and/or teaching project. Restricted to majors and minors. A minimum of 2 credit hours required for graduation.
- DANC 466. Dance Pedagogy II** 3 cr.  
Teaching methods and class planning for dance curriculum at middle school and high school levels. Course must be passed with a grade of C or higher. Consent of instructor required. Prerequisite(s): DANC 300 or consent of instructor. Restricted to: Main campus only.
- DANC 489. Advanced Choreographic Project** 3 cr.  
Individual directed studies in choreography with a culminating performance. Consent of instructor required. Restricted to Grad Dance Students majors.
- DANC 499. Problems** 1-3 cr.  
Problems in dance education, dance pedagogy, dance performance and independent work in their solutions. Prerequisite: consent of instructor. May be repeated for a maximum of 6 credits. Restricted to majors and minors.
- DAS- DENTAL ASSISTING**
- DAS 101. Introduction to Dental Assisting** 2 cr.  
An introduction to the duties and responsibilities of a dental assistant. Includes brief lessons on head and neck anatomy, chair side assisting, sterilization techniques, dental office emergencies, and dental office management. Restricted to: Community colleges.
- DAS 111. Bio-Dental Science** 4 cr. (3+3P)  
An introduction to biomedical and dental sciences with emphasis on head and neck anatomy and tooth morphology. Includes microbiology, general anatomy and physiology, histology and embryology of the oral cavity, pathology and pharmacology as they relate to dentistry. Prerequisites: ENGL 111, OECS 101 or OECS 105 or C S 110, PSY 201 or SOC 101, COMM 253 or COMM 265 or OEHO 101, HNDS 163 or OEHO 225. Corequisites: DAS 113, DAS 115, DAS 117.
- DAS 113. Dental Assisting I** 4 cr. (2+6P)  
Introduction to chair side assisting procedures, instrumentation, infection control, equipment safety and maintenance, dental office emergencies, and management of pain and anxieties. Prerequisites: ENGL 111, OECS 101 or OECS 105 or C S 110, PSY 201 or SOC 101, COMM 253 or COMM 265 or OEHO 101, HNDS 163 or OEHO 225. Corequisite: DAS 111, DAS 115, DAS 117.
- DAS 115. Dental Radiology** 3 cr. (2+3P)  
Radiation physics, hygiene, and safety theories. Emphasis on the fundamentals of oral radiographic techniques and interpretation of radiographs. Includes exposure of intra-oral radiographs, quality assurance, radiographic interpretation, patient selection criteria, and other ancillary radiographic techniques. Prerequisites: ENGL 111, OECS 101 or OECS 105 or C S 110, PSY 201 or SOC 101, COMM 253 or COMM 265 or OEHO 101, HNDS 163 or OEHO 225. Corequisites: DAS 111, DAS 113, DAS 117.
- DAS 117. Dental Materials** 3 cr. (2+3P)  
Composition, chemical and physical properties, manipulation and uses of dental materials. Laboratory experiences include the application and manipulation of various materials used in dentistry. Prerequisites: ENGL 111, OECS 101 or OECS 105 or C S 110, PSY 201 or SOC 101, COMM 253 or COMM 265 or OEHO 101, HNDS 163 or OEHO 225. Corequisite: DAS 111, DAS 113, and DAS 115.
- DAS 121. Dental Assisting II** 4 cr. (2+6P)  
Continuation of chair side assisting skill techniques with a major emphasis on four-handed dentistry performance procedures in the specialties of dentistry and expanded chair side functions. Prerequisites: DAS 111, DAS 113, DAS 115, DAS 117. Corequisites: DAS 123, DAS 125, DAS 127, DAS 129.

- DAS 123. Dental Assisting Practicum** 6 cr. (1+15P)  
This course is the clinical component of the program that combines general practice and experiences in the work place. Seminar topics focus on the practicum experiences and critique of performance. Prerequisites: DAS 111, DAS 113, DAS 115, and DAS 117. Corequisites: DAS 121, DAS 125, DAS 127, DAS 129.
- DAS 125. Professional Concepts** 3 cr.  
Emphasis on the development of professionalism for the dental office. Includes oral communication, psychology, patient relations, problem-solving skills, stress management, and employability in addition to dental jurisprudence and ethics. Prerequisites: DAS 111, DAS 113, DAS 115, and DAS 117. Corequisites: DAS 121, DAS 123, DAS 127, DAS 129.
- DAS 127. Dental Office Management** 2 cr.  
This capstone course is an introduction to business office procedures, including telephone management, appointment control, accounts payable, completion of third party reimbursement forms, inventory control data entry for charges and payments, management recall, basic dental computer software and operating basic business equipment. Prerequisites: DAS 111, DAS 113, DAS 115, and DAS 117. Corequisites: DAS 121, DAS 123, DAS 127, DAS 129.
- DAS 129. Preventive Dentistry** 2 cr.  
Prevention of dental diseases, oral hygiene instruction, fluoride, community dental health, and nutrition. Development, implementation and evaluation of a community dental health project. Prerequisites: DAS 111, DAS 113, DAS 115, and DAS 117. Corequisites: DAS 121, DAS 123, DAS 125, DAS 127.
- DAS 131. Dental Office Management I** 3 cr.  
Introduction to the field of dental office management with emphasis placed on professional verbal and written communication skills utilized within the dental office. Content includes dental terminology, charting, and back office experience as they relate to dental reception and management. Prerequisites: BOT 101, ENGL 111, OECS 105, or C S 101. Corequisites: DAS 133 and DAS 101.
- DAS 133. Dental Office Management II** 3 cr.  
Places emphasis on computer programs specifically designed for dental office management (Dentrix, Sof Dent, etc.) Expanded course content on oral communication and telephone skills, appointment scheduling, patient relations, stress management solutions, and comprehensive critical thinking/problem solving skills. Prerequisites: BOT 101, ENGL 111, OECS 105, or C S 101. Corequisites: DAS 133 and DAS 101.
- DAS 155. Special Topics** 1-6 cr.  
Specific subjects to be announced in the Schedule of Classes. Prerequisite: consent of instructor. May be repeated for a maximum of 12 credits.
- DAS 156. Independent Study** 1-6 cr.  
Individual studies/research on topics related to dental assisting. Prerequisite: consent of instructor. May be repeated for a maximum of 8 credits.
- DHYG- DENTAL HYGIENE/HYGIENIST**
- DHYG 110. Preclinical Dental Hygiene** 3 cr.  
Basic scientific principles and current theory, prevention of disease transmission, ethical and professional treatment of patients, clinical learning preparation, and introduction to comprehensive patient care. Offered concurrently with DHYG 112 to provide dental hygiene students with introductory knowledge, skills and attitudes to function in the clinical setting. Prerequisite(s): ENGL 111G, MATH 120, CHEM 210, BIOL 225, BIOL 226, BIOL 221 and BIOL 221L. Corequisite(s): DHYG 112, DHYG 114, DHYG 116, DHYG 118. Restricted to: Dona Ana campus only.
- DHYG 112. Preclinical Dental Hygiene Lab** 3 cr. (9P)  
Clinical application to basic theories and procedures used in dental hygiene practice. Techniques of instrumentation used in performing diagnostic, preventive and therapeutic services utilized when providing comprehensive patient care. Student will practice these techniques on manikins and student partners in the clinic. Prerequisite(s): ENGL 111G, MATH 120, CHEM 210, BIOL 225, BIOL 226, BIOL 221 AND BIOL 221L, OEHO 225. Corequisite(s): DHYG 110, DHYG 114, DHYG 116, DHYG 118. Restricted to: Community Colleges only. Restricted to DHYG majors.
- DHYG 114. Oral Histology and Embryology** 2 cr.  
Introduction and description of general histology and embryology with emphasis on the microscopic structures of enamel, dentin, pulp, cementum, periodontal ligament, bone, oral mucosa, epithelial attachment and development of orofacial structures. Prerequisite(s): ENGL 111G, MATH 120, CHEM 210, BIOL 225, BIOL 226, BIOL 221 AND BIOL 221L, OEHO 225. Corequisite(s): DHYG 110, DHYG 112, DHYG 116, DHYG 118. Restricted to: Dona Ana campus only.
- DHYG 116. Head, Neck, Dental Anatomy** 4 cr. (3+3P)  
Comprehensive study of the anatomy of the head and neck regions, including skeletal, nervous, circulatory, lymphatic, and muscular systems. A detailed study of nomenclature, morphologic characteristics, and physiologic relationships of human primary and permanent teeth as related to the clinical practice of dental hygiene. Laboratory activities develop observation and dexterity skills. Prerequisite(s): ENGL 111G, MATH 120, CHEM 210, BIOL 225, BIOL 226, BIOL 221 AND BIOL 221L, OEHO 225. Corequisite(s): DHYG 110, DHYG 112, DHYG 114, DHYG 118. Restricted to: Dona Ana campus only.
- DHYG 118. Dental Radiology** 3 cr. (2+3P)  
Study of radiation physics, hygiene and safety theories. Fundamentals of oral radiographic techniques and interpretation of radiographs. Includes exposure of intra-oral radiographs, quality assurance, radiographic interpretation, patient selection criteria, ancillary radiographic techniques and application to dental hygiene treatment. Prerequisite(s): ENGL 111G, MATH 120, CHEM 210, BIOL 225, BIOL 226, BIOL 221 AND BIOL 221L, OEHO 225. Corequisite(s): DHYG 110, DHYG 112, DHYG 114, DHYG 116. Restricted to: Dona Ana campus only.
- DHYG 120. Dental Hygiene Theory I** 3 cr.  
Continuation of the theoretical basis for dental hygiene clinical practice. Emphasis on emergency care, planning dental hygiene care, health promotion and disease prevention, oral rehabilitation and care of appliances, modifications of dental hygiene care through the life-span, and an introduction to medically comprised patients. Prerequisites: C or above in DHYG 110, DHYG 112, DHYG 114, DHYG 116, DHYG 118.
- DHYG 122. Clinical Dental Hygiene I** 3 cr. (12P)  
Application of dental hygiene procedures on a variety of clinical patients under direct supervision of faculty. Emphasis on patient assessment and diagnosis, treatment procedures, appointment planning and prevention techniques. Theory is simultaneously related to practical experience. Offered concurrently with DHYG 120. Prerequisites: C or above in DHYG 110, DHYG 112, DHYG 114, DHYG 116, DHYG 118.
- DHYG 124. General and Oral Pathology** 3 cr.  
Introduction to general pathology with focused study of diseases and disorders of the oral cavity and their interrelationship with body systems; developmental anomalies of the teeth and jaws; manifestations of disease in the oral cavity, head and neck. Prerequisites: C or above in DHYG 110, DHYG 112, DHYG 114, DHYG 116, DHYG 118.
- DHYG 126. Periodontology** 3 cr.  
Study of normal and diseased periodontium to include the structural, functional and environmental factors. Emphasis on etiology, pathology, evaluation of disease, treatment modalities, and therapeutic and preventative periodontics relative to the hygienist's role as a co-therapist in a contemporary practice setting. Prerequisites: C or above in DHYG 110, DHYG 112, DHYG 114, DHYG 116, DHYG 118.
- DHYG 132. Clinical Dental Hygiene II** 1 cr. (0.5+3.5P)  
Continuation of clinical skills, patient assessment and diagnosis, treatment and appointment planning, preventive techniques and application of dental hygiene procedures at an intermediate level under the direct supervision of faculty. Clinical-based instruction helps students synthesize new knowledge, apply previous knowledge, and gain experience managing the workflow. Theory is simultaneously related to practical experience. Prerequisites: C or above in DHYG 120, DHYG 122, DHYG 124, DHYG 126.
- DHYG 134. Dental Materials** 3 cr. (2+3P)  
Study of the composition, chemical and physical properties, manipulations, and uses of dental materials. Emphasis on materials and procedures for which the dental hygienist is directly responsible. Laboratory experiences include application and manipulation of various materials used in dentistry. Prerequisites: C or above in DHYG 120, DHYG 122, DHYG 124, DHYG 126.
- DHYG 155. Special Topics in Dental Hygiene** 1-6 cr.  
Study of special topics related to the practice of dental hygiene. May include educational methodology as well as applications in clinical practice, research, or community service. Consent of instructor required. Restricted to: Community Colleges only. Restricted to DHYG majors.
- DHYG 210. Dental Hygiene Theory III** 2 cr.  
Advanced theory of dental hygiene and information on periodontal therapies relative to the hygienist's role as a co-therapist in clinical practice. Continuation of the study of dental hygiene care for medically comprised patients and an introduction to special needs patients. Restricted to DHYG majors. Offered concurrently with DHYG 212. Corequisites: DHYG 212, DHYG 214, DHYG 216, DHYG 218. Prerequisites: C or above in DHYG 132, DHYG 134, and SOC 101 (or equivalent).

- DHYG 212. Clinical Dental Hygiene III** 4 cr. (16P)  
Continuation of clinical skills, patient assessment and diagnosis, treatment and appointment planning, preventive techniques and applications of dental hygiene procedures at the intermediate to competent level under supervision of faculty. Emphasis on dental hygiene treatment for the medically compromised and periodontally involved patients. Theory is simultaneously related to practical experience. Offered concurrently with DHYG 210. Restricted to DHYG majors. Corequisites: DHYG 210, DHYG 214, DHYG 216, DHYG 218. Prerequisite: C or above in DHYG 132, DHYG 134, and SOC 101 (or equivalent).
- DHYG 214. Dental Pharmacology** 3 cr.  
Study of the pharmacologic aspects of drugs and drug groups with which the dentist and dental hygienist are directly and indirectly concerned. Emphasis is placed on nomenclature, origin, physical and chemical properties, preparation, modes of administration and effects of drugs upon the body systems. Restricted to DHYG majors. Corequisites: DHYG 210, DHYG 212, DHYG 216 and DHYG, 218. Prerequisites: C or above in DHYG 132 and DHYG 134.
- DHYG 216. Dental Public Health Education** 3 cr.  
Study of principles and concepts of community public health and dental health education. Emphasis on dental epidemiology and statistical methods, community assessment, educational planning, implementation, and evaluation, scientific review of literature, and classroom presentation. Restricted to DHYG majors. Corequisites: DHYG 210, DHYG 212, DHYG 214 and DHYG 218. Prerequisites: C or above in DHYG 132 and DHYG 134.
- DHYG 218. Pain and Anxiety Management** 3 cr. (2+4P)  
Study of the application of various physical, chemical, and psychological modalities to the prevention and treatment of preoperative and postoperative patient anxiety and pain. Emphasis on administration of local anesthesia and nitrous oxide. Restricted to DHYG majors. Corequisites: DHYG 210, DHYG 212, DHYG 214 and DHYG, 216. Prerequisites: C or above in DHYG 132 and DHYG 134.
- DHYG 220. Dental Hygiene Theory IV** 3 cr.  
Theoretical preparation for advanced clinical practice. In-depth study of dental hygiene care for patients with special needs. Case Study presentations and a Board Review are utilized to demonstrate the synthesis of comprehensive dental hygiene knowledge, skills and attitudes. The most current dental and dental hygiene technology will be reviewed as it related to clinical practice. Prerequisite(s): 'C' or above in DHYG 210, DHYG 212, DHYG 214, DHYG 216, and DHYG 218. Corequisite(s): DHYG 222, DHYG 224, DHYG 226. Restricted to: Community Colleges only. Restricted to DHYG majors.
- DHYG 222. Clinical Dental Hygiene IV** 4 cr. (16P)  
Clinical sessions combine basic and advanced dental hygiene skills with time management techniques essential for private practice. Comprehensive patient care to include assessment, dental hygiene diagnosis, treatment planning, implementation and evaluation of dental care, nonsurgical periodontal therapy, adjunct clinical procedures, ultrasonic instrumentation, patient management, sealants, and comprehensive programs for control of oral diseases will be emphasized. Theory is simultaneously related to practical experience. Students are encouraged to develop independent decision-making with minimal faculty supervision. Prerequisite(s): 'C' or above in DHYG 210, DHYG 212, DHYG 214, DHYG 216, and DHYG 218. Corequisite(s): DHYG 220, DHYG 224, DHYG 226. Restricted to: All Community Colleges. Restricted to DHYG majors.
- DHYG 224. Principles of Practice** 2 cr.  
Examination of the dental hygienist's role in both traditional and non-traditional employment settings. Career planning, resume preparation and interviewing are practices. An understanding of the law, professional ethics of dental hygiene and the need for lifelong learning are emphasized. Future roles of the dental hygienist and emerging issues in dental hygiene will be explored. Prerequisite(s): 'C' or above in DHYG 210, DHYG 212, DHYG 214, DHYG 216, and DHYG 218. Corequisite(s): DHYG 220, DHYG 222, DHYG 226. Restricted to: All Community Colleges. Restricted to DHYG majors.
- DHYG 226. Community Oral Health** 2 cr. (1+3P)  
Students assess, plan, implement, and evaluate a community oral health project. Dental specialties and the dental hygienist's role in referrals and in interdisciplinary patient care are presented. Students participate in a variety of community health projects and practicum and observe in dental specialty practices. Prerequisite(s): 'C' or above in DHYG 210, DHYG 212, DHYG 214, DHYG 216, and DHYG 218. Corequisite(s): DHYG 220, DHYG 222, DHYG 224. Restricted to: Community Colleges only. Restricted to DHYG majors.
- DHYG 255. Special Topics in Dental Hygiene** 1-6 cr.  
Study of special topics related to the advanced practice of dental hygiene. May include educational methodology as well as applications in clinical practice, research, or community service. Consent of instructor required. Restricted to: Community Colleges only. Restricted to DHYG majors.
- DHYG 298. Independent Study in Dental Hygiene** 1-9 cr.  
Individual study related to the dental hygiene profession. Prior approval of both the Program Chairperson and the supervising instructor are required. Consent of instructor required. Restricted to: All Community Colleges. Restricted to DHYG majors.
- DMS- DIAGNOSTIC MEDICAL SONOGRAPHY**
- DMS 101. Introduction to Sonography** 2 cr.  
Introduction to the principles of ultrasound, terminology, scanning planes and applications of ultrasound. Includes observation in an ultrasound facility. All DMS courses are restricted to students who have been accepted into the Diagnostic Medical Sonography Program. Corequisite(s): DMS 112, 113. Restricted to: Community Colleges only. Restricted to DMS majors.
- DMS 110. Ultrasound Physics** 3 cr. (2+2P)  
Properties of sound and its use in diagnostic imaging, technical components involved in ultrasound imaging, how to use ultrasound equipment during lab sessions, the bioeffects of high-frequency sound, and artifacts created during imaging. Prerequisite(s): MATH 121. Restricted to: Community Colleges only. Restricted to: DMS majors.
- DMS 112. Abdominal Sonography I** 4 cr. (3+2P)  
Includes anatomy, physiology, and pathology of the abdominal organ systems; scanning techniques, ultrasound appearance of normal structures, and changes seen with pathologic conditions. Corequisite(s): DMS 101, DMS 113, and DMS 116. Restricted to: Community Colleges only. Restricted to DMS majors.
- DMS 113. GYN Sonography** 3 cr. (2+2P)  
Includes female pelvic anatomy, scanning techniques, pelvic pathology, sonography, and Doppler findings in normal and abnormal exams, introduction to human embryology, and first trimester pregnancy. Corequisite(s): DMS 101, DMS 112, DMS 116. Restricted to: Community Colleges only. Restricted to DMS majors.
- DMS 114. OB Sonography** 4 cr. (3+2P)  
Includes review of human embryology, normal fetal anatomy, obstetrical scanning techniques, fetal biometry, fetal abnormalities, fetal Doppler, the role of ultrasound in genetic testing and chromosome abnormalities, fetal echocardiography, and congenital heart abnormalities. Corequisite(s): DMS 126. Restricted to: Community Colleges only. Restricted to DMS majors.
- DMS 115. Abdominal Sonography II** 3 cr.  
Includes anatomy, physiology, and pathology of superficial structures, including female breast, thyroid, and neck structures, male pelvis, and musculoskeletal system; scanning techniques, ultrasound appearance of normal structures, and changes seen with pathologic conditions; abdominal Doppler principles of applications and organ transplant sonography. Prerequisite(s): DMS 112. Restricted to: Community Colleges only. Restricted to: DMS majors.
- DMS 116. Introduction to Vascular Technology** 3 cr. (2+2P)  
Basic ultrasound physics and principles, peripheral vascular anatomy, hemodynamics, Doppler evaluation, peripheral vascular scanning techniques, physiologic testing and the more common pathologies of the carotid arteries, and the peripheral vascular system. Corequisite(s): DMS 101, DMS 112, DMS 113. Restricted to: Community Colleges only. Restricted to DMS majors.
- DMS 117. Vascular and Advanced Sonography** 2 cr. (1+2P)  
Expansion of vascular applications, hemodynamics and pathology of the peripheral and extracranial vascular systems and renal transplants. This course will also explore musculoskeletal and breast sonography. Corequisite(s): DMS 122. Restricted to: Community Colleges only. Restricted to DMS majors.
- DMS 118. Neurosonography** 2 cr.  
This course covers basic fetal assessment, biometrics and neurosonography. Students will learn the anatomy of the head, chest, abdomen, extremities and neural tube of the developing fetus, scanning techniques and the sonographic appearance of normal structures as well as pathologies involving the brain and central nervous system. Corequisite(s): DMS 120. Restricted to: Community Colleges only. Restricted to DMS majors.



- DMS 120. Clinical Internship I** 4 cr. (32P)  
Provides the practical, hands-on experience required for both the national registry exam and for quality patient care. Students will spend 32 hours per week at their assigned clinical site performing ultrasound exams under the supervision of the clinical staff. Students return to campus periodically to participate in advanced seminars. Six-week course. Corequisite(s): DMS 118. Restricted to: Community Colleges only. Restricted to DMS majors.
- DMS 122. Clinical Internship II** 4 cr. (32P)  
Provides the practical, hands-on experience required for both the national registry exam and for quality patient care. Students will spend 32 hours per week at their assigned clinical site performing ultrasound exams under the supervision of the clinical staff. Students return to campus periodically to participate in advanced seminars. Six-week course. Prerequisite(s): DMS 120 or consent of instructor. Restricted to: Community Colleges only. Restricted to DMS majors.
- DMS 124. Clinical Internship III** 9 cr. (32P)  
Provides the practical, hands-on experience required for both the national registry exam and for quality patient care. Students will spend 32 hours per week at their assigned clinical site performing ultrasound exams under the supervision of the clinical staff. Students return to campus periodically to participate in advanced seminars. Prerequisite(s): DMS 122 or Consent of Instructor. Corequisite(s): DMS 110, DMS 115. Restricted to: Community College campuses only. Restricted to DMS majors.
- DMS 126. Clinical Internship IV** 9 cr. (32P)  
Provides the practical, hands-on experience required both for national certification and for quality patient care. Students will spend 32 hours per week at their assigned clinical site performing ultrasound exams under the supervision of the clinical staff. Students will learn more difficult exams and will work on case reports and course review materials. Prerequisite(s): DMS 124 or consent of instructor. Restricted to: Community Colleges only. Restricted to DMS majors.
- DMS 155. Special Topics** 1-6 cr.  
Specific subjects to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits. Consent of instructor required. Restricted to: Community Colleges only. Restricted to DMS majors.
- DMS 200. Independent Study** 1-6 cr.  
Individual study/research on topics related to diagnostic medical sonography. Consent of instructor required. Restricted to: Community Colleges only. Restricted to DMS majors.
- DRFT- DRAFTING**
- DRFT 101. Introduction to Drafting and Design Technologies** 2 cr.  
Introduction to Drafting and Design Technologies. Professional organizations associated with the program, degree requirements, employment skills and work habits, and university and college policies and procedures. Will set up university accounts and be introduced to the university's online interface. Completion of career-readiness certificate.
- DRFT 105. Technical Drawing for Industry** 3 cr. (2+2P)  
Technical sketching, basic CAD, and interpretation of drawings with visualization, speed and accuracy highly emphasized. Areas of focus include various trades such as machine parts, welding, heating and cooling, and general building sketches/plan interpretation.
- DRFT 108. Drafting Concepts/Descriptive Geometry** 2 cr. (1+2P)  
Basic manual drafting skills, sketching, terminology and visualization. Graphical solutions utilizing applied concepts of space, planar, linear and point analyses. Metric and S.I. units introduced.
- DRFT 109. Computer Drafting Fundamentals** 3 cr. (2+2P)  
Introduction to computer-aided drafting. Principles and fundamentals of drafting using the latest version of AutoCAD software. Crosslisted with: C E 109 and E T 109
- DRFT 110. Introduction to Drafting** 6 cr. (4+4P)  
Fundamentals of manual and computer-aided drafting.
- DRFT 112. Drafting Concepts/Computer Drafting Fundamentals I** 4 cr. (2+4P)  
Basic drafting skills, terminology, and visualization. Introduction to principles and fundamentals of computer-aided drafting. Prerequisites: OECS 207, OECS 125 or consent of instructor. Same as E T 106.
- DRFT 113. Drafting Concepts/Computer Drafting Fundamentals II** 4 cr. (2+4P)  
Drafting for mechanical/industrial applications; machine part detailing, assemblies in orthographic, isometric, auxiliary, oblique, and sectional views. Two-dimensional AutoCAD with introduction to 3-D AutoCAD. Prerequisite: DRFT 112. Same as E T 216. Community Colleges only.
- DRFT 114. Introduction to Mechanical Drafting/Solid Modeling** 3 cr. (2+2P)  
Students will learn 3-D visualization, mechanical drafting, and dimensioning skills as solid modeling skills are developed. Working drawings, assembly models, and assembly drawings will be introduced. May be repeated for a maximum of 6 credits. Corequisite: DRFT 108.
- DRFT 115. General Construction Safety** 3 cr. (2+2P)  
Overview of general construction safety related to building construction, highway and road construction, and surveying field work.
- DRFT 118. Geometry for Drafting** 3 cr.  
Analysis and problem solving of related technical problems using measuring instruments and techniques with geometry and trigonometry. Prerequisite: CCDM 103N or CCDM 104N.
- DRFT 123. Introduction to Civil/Architectural Technology** 4 cr. (2+4P)  
Introduction to beginning civil/architecture drafting and its applications. Drawings, projects and terminologies are related to both fields of civil engineering and architectural technology. Restricted to: All Community Colleges.
- DRFT 130. General Building Codes** 3 cr. (2+2P)  
Interpretation of the Building Code, local zoning codes, A.D.A. Standards and the Model Energy Code to study construction and design requirements and perform basic plan checking. Restricted to: Community College campuses only.
- DRFT 135. Electronics Drafting I** 3 cr. (2+2P)  
Drafting as it relates to device symbols; wiring, cabling, harness diagrams and assembly drawings; integrated circuits and printed circuit boards; schematic, flow and logic diagrams; industrial controls and electric power fields. Drawings produced using various CAD software packages. Prerequisites: DRFT 108 and DRFT 109.
- DRFT 143. Civil Drafting Fundamentals** 3 cr. (2+2P)  
Introduction to drafting in the field of surveying and civil engineering. Drawings, projects, and terminologies related to topographic surveys/mapping, contour drawings, plan and profiles, improvement plats and street/highway layout. Prerequisite(s): DRFT 109. Crosslisted with: E T 143
- DRFT 151. Construction Principles and Print Reading** 3 cr. (2+2P)  
Introduction to construction materials, methods, and basic cost estimating and print reading applicable in today's residential, commercial, and public works industry. Instruction by print reading and interpretation, field trips, and actual job-site visits and progress evaluation.
- DRFT 153. Survey Drafting Applications** 3 cr. (2+2P)  
Emphasis on drafting in the field of surveying engineering. Included are drawings, projects, terminologies related to land/boundary, topographic, improvement plat surveys and legal descriptions; data production and retrieval using CADD applications; and researching and submittal process methods of survey documents with municipal and county agencies. Same as SUR 143. Prerequisites: DRFT 109.
- DRFT 154. GIS Technology** 3 cr. (2+2P)  
Introduction to GIS and related data collecting and mapping techniques. National standards emphasized utilizing computer and web-based systems and peripherals. Prerequisite(s): DRFT 109. Restricted to: Community Colleges only.
- DRFT 160. Construction Take-Offs and Estimating** 3 cr. (2+2P)  
Computing and compiling materials and labor estimates from working drawings using various techniques common in general building construction and in accordance with standard specifications and estimating formats. Use of spreadsheets and estimating software introduced. Prerequisite: DRFT 151.
- DRFT 164. Intermediate Mechanical Drafting/Solid Modeling** 3 cr. (2+2P)  
Students will learn advanced solid modeling techniques. Use of different file types and compatibility issues between different software packages will be studied. Drawing organization and presentation methods will be practiced. Projects requiring precision field measurements and sketches, as well as teamwork, will be assigned. Geometric Dimensioning and Tolerancing will be introduced. May be repeated for a maximum of 6 credits. Prerequisite: DRFT 114.
- DRFT 173. Civil Drafting Applications** 3 cr. (2+2P)  
Emphasis on drafting in the field of civil engineering. Includes drawings, projects and terminologies related to construction plan set setup, contour drawing, profiles, street and highway layout according to municipal and county agency standards. Same as E T 143. Prerequisite: DRFT 109.
- DRFT 176. Computer Drafting in 3-D** 3 cr. (2+2P)  
Computer drafting in three dimensions including wire frame, surface modeling, and solids modeling. Computer generated rendering with surface material applications and ray traced shadows will be introduced. Prerequisites: DRFT 108 and DRFT 109.



- DRFT 177. Computer Rendering and Animation I** 3 cr. (2+2P)  
Introduction to technical applications of computer generated renderings and animations for the architecture and engineering fields. 3D models, photo-realistic renderings, and basic animation movie files will be produced utilizing Autodesk VIZ and Google SketchUp software. May be repeated for a maximum of 6 credits. Prerequisite: DRFT 109.
- DRFT 180. Residential Drafting** 3 cr. (2+2P)  
Basic residential drafting including, floor plans, foundation plans, sections, roof plans, exterior and interior elevations, and site plans. Applicable residential building and zoning codes, construction methods and materials, adaptable residential design, and drawing and sheet layout for architectural drafting will be introduced.
- DRFT 181. Commercial Drafting** 3 cr. (2+2P)  
Drafting principles, plan coordination, and code analysis applicable in the development of working drawings for commercial, public, and industrial building projects. Students will utilize National Cad Standards, ADA Standards, and will be introduced to modern office practice. Prerequisite(s): DRFT 109. Pre/Corequisite(s): DRFT 180. Restricted to: Community Colleges only.
- DRFT 190. Finding and Maintaining Employment** 2 cr.  
Techniques in self-evaluations, resume writing, application completion, job interviewing, and job retention. Exposure to work ethics, employee attitudes, and employer expectations.
- DRFT 204. GIS Spatial Data Processing** 3 cr. (2+2P)  
The study of more advanced techniques of GIS and related data collecting and mapping. Focus on spatial data processing, and alternative GIS software. Prerequisite(s): DRFT 154. Restricted to: Community Colleges only.
- DRFT 214. Advanced Mechanical Drafting/Solid Modeling** 3 cr. (2+2P)  
Advanced mechanical drafting/solid modeling techniques and topics will be studied using the student's software(s) of choice. Students will use any of the 3-D solid modeling software packages that are available on campus as they develop these skills, as well as develop a thorough working knowledge of the use of GD&T in Mechanical Drafting/Solid Modeling. Detailed class projects will be assigned, and presentations will be required. May be repeated for a maximum of 6 credits. Prerequisite: DRFT 114 or DRFT 176.
- DRFT 218. Mathematics for Civil/Surveying** 3 cr.  
Practical problem solving in areas related to civil and surveying fields, including earthwork calculation, heavy construction material take-offs, and surveying data interpretation. Prerequisite: DRFT 118.
- DRFT 222. Surveying Fundamentals** 3 cr. (2+2P)  
Elementary surveying and civil drafting theory and techniques for non engineering majors. Includes traverse plotting, site plans, mapping, cross sections, and development of plan and profile drawings. Actual basic field measurement/surveying as well as extensive manual and CAD projects will be assigned. Prerequisite(s): DRFT 108 and DRFT 109, and (DRFT 118 or MATH 180 or MATH 190).
- DRFT 230. Building Systems Drafting** 3 cr. (2+2P)  
Development of drawings for electrical, plumbing, and HVAC systems, for residential and commercial building. Use of related CAD software. Prerequisite: DRFT 180.
- DRFT 235. Electronics Drafting II** 3 cr. (2+2P)  
Continuation of DRFT 135. Expansion techniques in electronic drafting as it applies to schematic capture, logic diagrams, electronic equipment racks, and printed circuit board documentation. Basic logic simulation, 3-D electronic assemblies and artwork generation for PCB fabrication using various software packages. Prerequisite: DRFT 135.
- DRFT 240. Structural Systems Drafting** 3 cr. (2+2P)  
Study of foundations, wall systems, floor systems and roof systems in residential, commercial and industrial design/construction. Produce structural drawings including foundation plans, wall and building sections, floor and roof framing plans, shop drawings and details; schedules, materials lists and specifications. Use of various software. Prerequisite(s): DRFT 180 or DRFT 181. Restricted to: Community Colleges only.
- DRFT 242. Roadway Development Drafting** 3 cr. (2+2P)  
Advanced civil/survey technology and drafting related to roadway development. Emphasis is on relevant terminology, codes/standards, and the production of complex working drawings such as topographical/grading, drainage, master utilities, roadway P P/details/etc., according to agency standards. Prerequisites: DRFT 143 and DRFT 173.
- DRFT 243. Land Development Drafting** 3 cr. (2+2P)  
Advanced civil/survey technology and drafting related to land development. Emphasis is on relevant terminology codes/standards, and the production of complex working drawings such as subdivision plats, local utility and drainage plans, construction details roadway P P, etc., according to local development/ agency standards. Prerequisite: DRFT 143 and DRFT 153.
- DRFT 250. Principles of Detailing and Design** 3 cr. (2+2P)  
Advanced practice in construction documentation in the development and coordination of working drawings & specifications. In particular, will utilize Architectural Graphic Standards, National CAD Standards, and ADA standards to develop detail drawings related to Architectural, Civil, Structural and Building Mechanical systems. Will also be introduced to basic principles, factors, and process of building design such as space planning, site analysis, and basic architectural programming. Prerequisite(s): DRFT 180 or DRFT 181. Restricted to: Community Colleges only.
- DRFT 252. Global Positioning Systems Technology** 3 cr. (2+2P)  
Introduction to Geographical Information Systems (GIS) and related data collecting and mapping techniques. National standards emphasized utilizing computer and Web-based systems and peripherals. Prerequisite: DRFT 143.
- DRFT 253. Geodatabase Design** 3 cr. (2+2P)  
Study of geodatabase design using techniques learned in GIS I and more advanced methods. Will be using real-world ESRI models for design; including the architecture, design, building, management, implementation and use of working geodatabase. Prerequisite(s): DRFT 204. Restricted to: Community Colleges only.
- DRFT 254. GIS II Spatial Data Processing** 3 cr. (2+2P)  
Continuation of GIS I using more advanced techniques. Focus will be on spatial data processing. Class will be project driven. Pre/Corequisite(s): DRFT 204. Restricted to: Community Colleges only.
- DRFT 255. Independent Study** 1-3 cr.  
Instructor-approved projects in drafting or related topics specific to the student's individual areas of interest and relevant to the drafting and graphics technology curriculum. Consent of instructor required. May be repeated for a maximum of 6 credits.
- DRFT 270. Architectural Sketching and Rendering** 3 cr. (2+2P)  
Use of freehand sketching, shading and shadowing techniques, 3-D models, and 1-point and 2-point perspectives in the development of architectural presentation drawings. Prerequisite: DRFT 108.
- DRFT 274. GIS III Spatial Analysis & GIS Theory** 3 cr. (2+2P)  
Continuation of GIS II focusing on the problem solving aspect of GIS. Using tools such as: buffers, overlays, and selections together in a particular sequence to produce data presentation and be able to build 'big picture' maps. Prerequisite(s): DRFT 254. Restricted to: Community Colleges only.
- DRFT 276. Computer Rendering and Animation I** 3 cr. (2+2P)  
Introduction to technical applications of computer generated renderings and animations for the architecture and engineering fields. 3D models, photo-realistic renderings, and basic animation movie files will be produced utilizing industry standard modeling and animation software.
- DRFT 277. Computer Rendering and Animation II** 3 cr. (2+2P)  
Continuation of DRFT 276. Covers advanced modeling and animation techniques using 3-D animation software. Prerequisite: DRFT 276.
- DRFT 278. Advanced CAD Applications** 3 cr. (2+2P)  
Introduction to advanced Autodesk AutoCAD applications, usage techniques, user customization, and basic AutoLisp programming. Techniques for interfacing AutoCAD drawings into other software packages and presentations will be explored. Internet based research of alternative CAD software packages and solutions will be performed. Prerequisite: DRFT 109.
- DRFT 288. Portfolio Development** 4 cr. (2+4P)  
Production of a portfolio consisting of student produced work related to individualized projects based on degree option. Completed portfolio to include, working and presentation drawings, material take-offs, cost estimates, specifications, 3D models, renderings, and technical animation files as assigned by the instructor. Job search and resume preparation activities will also be required. Consent of instructor required.
- DRFT 290. Special Topics** 1-4 cr.  
Topics subtitled in the Schedule of Classes. May be repeated for a maximum of 12 credits.

DRFT 291. Cooperative Experience 1-6 cr.  
Supervised cooperative work program. Student is employed in an approved occupation and supervised and rated by the employer and instructor. Student meets with advisor weekly. Prerequisite: consent of instructor. Graded S/U.

DRFT 295. Professional Development and Leadership DAGA 1-3 cr.  
As members and/or officers of student professional organizations, drafting and graphics students gain experience in leadership, team building, and community services. May be repeated for a maximum of 6 credits.

### E E- ELECTRICAL AND COMPUTER ENGINEERING

E E 109. The Engineering of How Things Work 3 cr.  
This class provides Integrated Learning Community students with an introduction to various aspects of engineering.

E E 110. The Science and Engineering of How Things Work 4 cr.  
Introduction to the basic science and engineering concepts of everyday devices. For nonmajors only.

E E 161. Computer Aided Problem Solving 4 cr. (3+3P)  
Introduction to scientific programming. Extensive practice in writing programs to solve engineering problems. Items covered will include: loops, input and output, functions, decision statements, and pointers. Pre/Corequisite(s): MATH 190G.

E E 162. Digital Circuit Design 4 cr. (3+3P)  
Design of combinational logic circuits based on Boolean algebra. Introduction to state machine design. Implementation of digital projects with hardware description language. Prerequisite(s): C or better in E E 161 and MATH 190G. Restricted to: Main campus only.

E E 201. Networks I 3 cr.  
Electric component descriptions and equations. Kirchoff's voltage and current laws, formulation and solution of RLC network equations using time domain concepts. For nonmajors only. Prerequisite(s): C or better in MATH 192G. Minimum 2.0 GPA.

E E 210. Engineering Analysis I 4 cr. (3+3P)  
The application of linear algebra and matrices, probability, random variables and random processes to solve problems in electrical engineering. Applications to be covered include probabilistic modeling of electrical/electronic systems and an introduction to Matlab. Prerequisite(s): C or better in E E 161 and MATH 192G. Restricted to: Main campus only.

E E 260. Embedded Systems 4 cr. (3+3P)  
Applications of microcontrollers, FPGAs, interfaces and sensors. Introduction to Assembly language programming. Prerequisite(s): C or better in E E 162.

E E 280. DC and AC Circuits 4 cr. (3+3P)  
Electric component descriptions and equations; Kirchoff's voltage and current laws; formulation and solution of network equations for dc circuits; ideal op-amp circuits. Complete solutions of RLC circuits; steady-state analysis of ac circuits, ac power; introduction to frequency response techniques. Prerequisite(s): C or better in MATH 192 and PHYS 216.

E E 310. Engineering Analysis II 3 cr.  
Calculus of vector functions through electrostatic applications. Techniques for finding resistance and capacitance. Coulomb's law, gradient, Gauss divergence theorem, curl, Stokes' theorem, and Green's theorem. Application of complex algebra and Matlab. Prerequisite(s): C or better in E E 210 and MATH 291G.

E E 312. Signals and Systems I 3 cr.  
Continuous- and discrete-time signals and systems. Time- and frequency-characterization of signals and systems. Transform-domain methods including Fourier-, Laplace-, and z-transforms. Prerequisite(s): C or better in E E 210, EE 280, and Math 392.

E E 314. Signals and Systems II 4 cr. (3+3P)  
Introduction to communication systems including amplitude-, frequency-, and pulse-amplitude modulation. Introduction to control systems including linear feedback systems, root-locus analysis, Nyquist criterion. Introduction to digital signal processing including sampling, digital filtering, and spectral analysis. Prerequisite(s): C or better in EE 312.

E E 330. Environmental Management Seminar I 1 cr.  
Survey of practical and new developments in hazardous and radio-active waste management provided through a series of guest lectures and reports of ongoing research. Restricted to: Main campus only. Crosslisted with: C E 330, G EN 330, I E 330, M E 330, WERC 330, A EN 330 and CH E 330

E E 351. Applied Electromagnetics 4 cr. (3+3P)  
Static electric and magnetic fields. Maxwell's equations, static and time-varying electromagnetic fields, generalized plane wave propagation and microwave transmission line theory and applications. Prerequisite(s): C or better in EE 310 and EE 280.

E E 363. Computer Systems Architecture 4 cr. (3+3P)  
Concepts of modern computer architecture. Processor micro-architectures, hardwired vs. micro-programmed control, pipelining and pipeline hazards, memory hierarchies, bus-based system architecture and memory mapping, hardware-software interface, and operating system concepts. Comparison of architectures to illustrate concepts of computer organization; relationships between architectural and software features. Prerequisite(s): C or better in C S 273 or E E 260.

E E 370. Geometrical Optics 4 cr. (3+3P)  
Reflection, refraction, lenses, prisms, ray tracing, stops and pupils, image formation, first order lens design, aberrations, and optical instrumentation. Prerequisite(s): MATH 191G. Crosslisted with: PHYS 370

E E 380. Electronics I 4 cr. (3+3P)  
Analysis and design of single-time-constant circuits, opamp applications, diode circuits, linear power supplies, and single-transistor MOS and BJT amplifiers. Introduction to solid-state devices and digital CMOS circuits. Prerequisite(s): C or better in E E 162, E E 280, and CHEM 111G.

E E 391. Introduction to Electric Power Engineering 4 cr. (3+3P)  
Introduction to the principles, concepts, and analysis of the major components of an electric power system. Basic electromechanics, energy conversion and source conversion, transformers, transmission lines, rectifiers, regulators, and system analysis. Prerequisite(s): C or better in E E 280.

E E 395. Introduction to Digital Signal Processing 3 cr.  
Undergraduate treatment of sampling/reconstruction, quantization, discrete-time systems, digital filtering, Z-transforms, transfer functions, digital filter realizations, discrete Fourier transform (DFT) and fast Fourier transform (FFT), finite impulse response (FIR) and infinite impulse response (IIR) filter design, and digital signal processing (DSP) applications. Prerequisite(s): C or better in E E 314.

E E 400. Undergraduate Research 1-3 cr.  
Directed undergraduate research. May be repeated for a maximum of 9 credits. Prerequisite: consent of the department head.

E E 401. Research Topics in Electrical and Computer Engineering 1 cr.  
Ethics and methods of engineering research; contemporary research topics in electrical and computer engineering. Taught with E E 501. Pre/Corequisite(s): E E 418.

E E 418. Capstone Design I 3 cr. (1+6P)  
Application of engineering principles to a significant design project. Includes teamwork, written and oral communications, and realistic technical, economic, and public safety requirements. Consent of instructor required. Prerequisite(s): C or better in E E 260, EE 314, E E 351, E E 380, and E E 391. Pre/Corequisite(s): E E 461.

E E 419. Capstone Design II 3 cr. (1+6P)  
Realization of design project from E E 418 within time and budget constraints. Prerequisite(s): (C or better in E E 260, E E 314, E E 351, E E 380, and E E 391) OR (C or better in E E 418). Pre/Corequisite(s): E E 461.

E E 425. Introduction to Semiconductor Devices 3 cr.  
Energy bands, carriers in semiconductors, junctions, transistors, and optoelectronic devices, including light-emitting diodes, laser diodes, photodetectors, and solar cells. Taught with E E 525. Prerequisite(s): C or better in E E 380 and E E 351.

E E 430. Environmental Management Seminar II 1 cr.  
Survey of practical and new developments in hazardous and radioactive waste management provided through a series of guest lectures and reports of ongoing research. Restricted to: Main campus only. Crosslisted with: C E 430, CH E 430, E T 430, I E 430 and WERC 430

E E 431. Power Systems II 3 cr.  
Analysis of a power system in the steady-state. Includes the development of models and analysis procedures for major power system components and for power networks. Prerequisites: C or better in E E 391.

E E 432. Power Electronics 3 cr. (2+3P)  
Basic principles of power electronics and its applications to power supplies, electric machine control, and power systems. Prerequisites: C or better in E E 380 and E E 391. Corequisites: E E 312 and E E 314.

- E E 437. Energy Harvesting 3 cr.  
Operating principles of several harvesting techniques such as solar, tidal, thermal, vibration, linear motion, passive and active human power generation methods will be discussed along with experiments which help confirm these concepts as viable means for energy harvesting. Students to apply their knowledge in fluid dynamics, power electronics, machine design, control systems, structural design, computer control, embedded systems, system dynamics, and many others areas, and combine this knowledge with strong systems engineering practices to design and develop revolutionary energy harvesting systems. Taught with E E 557. Prerequisite(s): C or better in E E 380 and E E 391.
- E E 442. Real-Time Digital Signal Processing 3 cr.  
Project-oriented course covering the fundamentals of real-time digital signal processing (DSP) by programming a state-of-the-art digital processor to solve a variety of problems in digital audio and communications engineering. Prerequisite: C or better in E E 395.
- E E 446. Digital Image Processing 3 cr.  
Two-dimensional transform theory, color images, image enhancement, restoration, segmentation, compression and understanding. Taught with E E 596. Prerequisite(s): E E 395
- E E 449. Smart Antennas 3 cr.  
Smart antenna and adaptive array concepts and fundamentals, uniform and planar arrays, optimum array processing. Adaptive beamforming algorithms and architectures: gradient-based algorithms, sample matrix inversion, least mean square, recursive mean square, sidelobe cancellers, direction of arrival estimations, effects of mutual coupling and its mitigation. Taught with E E 549. Prerequisite(s): C or better in E E 314 and E E 351.
- E E 452. Introduction to Radar 3 cr.  
Basic concepts of radar. Radar equation; detection theory. AM, FM, and CW radars. Analysis of tracking, search, MTI, and imaging radar. Taught with E E 548. Restricted to undergraduate students. Prerequisite(s): C or better in E E 210 and E E 351. Pre/Corequisite(s): E E 496.
- E E 453. Microwave Engineering 3 cr.  
Techniques for microwave measurements and communication system design, including transmissions lines, waveguides, and components. Microwave network analysis and active device design. Taught with E E 521. Restricted to undergraduate students. Prerequisite(s): C or better in E E 351. Restricted to: Main campus only.
- E E 454. Antennas and Radiation 3 cr.  
Basic antenna analysis and design. Fundamental antenna concepts and radiation integrals. Study of wire antennas, aperture antennas, arrays, reflectors, and broadband antennas. Taught with E E 541. Restricted to undergraduate students. Prerequisite(s): C or better in E E 351. Restricted to: Main campus only.
- E E 460. Space System Mission Design and Analysis 3 cr.  
Satellite system design, including development, fabrication, launch, and operations. A systems engineering approach to concepts, methodologies, models, and tools for space systems. Prerequisite: junior standing.
- E E 461. Systems Engineering and Program Management 3 cr.  
Modern technical management of complex systems using satellites as models. Team projects demonstrate systems engineering disciplines required to configure satellite components. Prerequisite(s): Junior standing.
- E E 469. Communications Networks 3 cr. (2+3P)  
Introduction to the design and performance analysis of communications networks with major emphasis on the Internet and different types of wireless networks. Covers network architectures, protocols, standards and technologies; design and implementation of networks; networks applications for data, audio and video; performance analysis. Taught with E E 569. Prerequisite(s): C or better in E E 162 and (E E 210 or STAT 371).
- E E 470. Physical Optics 3 cr.  
Interference and diffraction, spectroscopic instrumentation, coherence, laser and Gaussian laser beam, and elements of nonlinear optics and fiber optics. Prerequisite: E E 370; and PHYS 214, PHYS 216G, or PHYS 217. Same as PHYS 470.
- E E 471. Modern Experimental Optics 2 cr. (6P)  
Advanced laboratory experiments in optics related to the material presented in E E 470. Pre/Corequisite(s): E E 470. Crosslisted with: PHYS 471
- E E 473. Introduction to Optics 3 cr.  
The nature of light, geometrical optics, basic optical instruments, wave optics, aberrations, polarization, and diffraction. Elements of optical radiometry, lasers and fiber optics. Prerequisite(s): PHYS 216G or PHYS 217. Crosslisted with: PHYS 473
- E E 475. Automatic Control Systems 3 cr.  
Design and synthesis of control systems using state variable and frequency domain techniques. Compensation, optimization, multi-variable system design techniques. Prerequisite(s): C or better in E E 314.
- E E 476. Computer Control Systems 3 cr.  
Representation, analysis and design of discrete-time systems using time-domain and z-domain techniques. Microprocessor control systems. Prerequisite: C or better in E E 314.
- E E 477. Fiber Optic Communication Systems 4 cr. (3+3P)  
Fundamental characteristics of individual elements (transmitters, detectors, and fibers) of fiber optic communication systems. Design and characterization of high-speed, multichannel fiber optic communication links. Introduction to fiber optic distribution. Taught with E E 527. Prerequisite(s): C or better in E E 351 or PHYS 461. Crosslisted with: PHYS 477.
- E E 478. Optical Sources, Detectors and Radiometry 4 cr. (3+3P)  
Fundamentals of optical sources, detectors, and radiometric measurements in the visible and infrared. Radiometry of imaging and nonimaging optical systems. Detector preamplifiers, noise, NEP, D, optical filters, and sensor systems. Taught with E E 528. Recommended foundation: E E 370. Prerequisite(s): PHYS 217. Crosslisted with: PHYS 478
- E E 479. Lasers and Applications 4 cr. (3+3P)  
Laser operating principles, characteristics, construction and applications. Beam propagation in free space and fibers. Laser diode construction and characteristics. Hands-on laboratory. Taught with EE 529. Prerequisite(s): C or better in E E 351 or PHYS 461. Crosslisted with: PHYS 479
- E E 480. Introduction to VLSI 4 cr. (3+3P)  
Introduction to analog and digital VLSI circuits implemented in CMOS technology. Design of differential amplifiers, opamps, CMOS logic, flip-flops, and adders. Introduction to VLSI fabrication process and CAD tools. Prerequisite(s): C or better in E E 260 and E E 380.
- E E 482. Electronics II 3 cr.  
Feedback analysis, application of operational amplifiers, introduction to data converters, analog filters, oscillator circuits.. Prerequisite: C or better in E E 161 and E E 380.
- E E 483. RF Microelectronics 3 cr.  
Analysis, design and implementation of RF integrated circuits in CMOS/BJT technologies. Low noise amplifiers and mixers, power amplifiers, wideband amplifiers, oscillators, phase-locked frequency synthesizers. Taught with E E 519. Restricted to undergraduate students. Prerequisite(s): C or better in E E 480 and E E 351. Restricted to: Main campus only.
- E E 485. Analog VLSI Design 3 cr. (2+3P)  
Analysis, design, simulation, layout and verification of CMOS analog building blocks, including references, opamps, switches and comparators. Teams implement a complex analog IC. Taught with E E 523. Restricted to undergraduate students. Prerequisite(s): C or better in E E 312 and E E 480. Restricted to: Main campus only.
- E E 486. Digital VLSI Design 3 cr.  
An introduction to VLSI layers. Static and dynamic logic design, memory circuits, arithmetic operators, and digital phase-locked loops. Taught with E E 524. Restricted to undergraduate students. Prerequisite(s): C or better in E E 260 and E E 380.
- E E 486 L. Digital VLSI Design Laboratory 1 cr. (3P)  
Simulation, schematic capture, layout, and verification using software tools of material presented in E E 486. An introduction to measurement of digital VLSI circuits. Taught with E E 524L. Prerequisite(s): C or better in E E 260 and E E 380. Pre/Corequisite(s): E E 486.
- E E 490. Selected Topics 1-3 cr.  
Prerequisite: consent of instructor. May be repeated for a maximum of 9 credits. Graduate students may not use credits of E E 490 toward an M.S. or Ph.D. in electrical engineering.
- E E 493. Power Systems III 3 cr.  
Analysis of a power system under abnormal operating conditions. Topics include symmetrical three-phase faults, theory of symmetrical components, unsymmetrical faults, system protection, and power system stability. Taught with E E 543. Restricted to undergraduate students. Prerequisite(s): C or better in E E 391. Pre/Corequisite(s): E E 431.
- E E 494. Distribution Systems 3 cr.  
Concepts and techniques associated with the design and operation of electrical distribution systems. Taught with E E 544. Restricted to undergraduate students. Prerequisite(s): C or better in E E 431. Pre/Corequisite(s): E E 493. Restricted to: Main campus only.



**E E 496. Introduction to Communication Systems** 4 cr. (3+3P)  
Introduction to the analysis of signals in the frequency and time domains. A study of baseband digital transmission systems and digital/analog RF transmission systems. Introduction to telecom systems as well as satellite systems. Prerequisite(s): C or better in E E 314.

**E E 497. Digital Communication Systems I** 3 cr.  
Techniques for transmitting digital data over commercial networks. Topics include baseband and bandpass data transmission and synchronization techniques. Taught with E E 581. Recommended foundation: E E 496. Prerequisite(s): E E 210 and E E 314.

### **E S- ENVIRONMENTAL SCIENCE**

**E S 110G. Introductory Environmental Science** 4 cr. (3+1P)  
Introduction to environmental science as related to the protection, remediation, and sustainability of land, air, water, and food resources. Emphasis on the use of the scientific method and critical thinking skills in understanding environmental issues.

**E S 111. Freshman Orientation** 1 cr.  
Orientation to university life, including available resources and methods to promote success at NMSU. General exposure to fields in agriculture and home economics. Open to all freshmen and transfer students. Graded: S/U. Restricted to: Main campus only.

**E S 256. Environmental Engineering and Science** 3 cr.  
Principles in environmental engineering and science: physical chemical systems and biological processes as applied to pollution control. Prerequisite(s): CHEM 111 and MATH 191. Restricted to: Main campus, Alamogordo campus, Grants campus, Carlsbad campus. Crosslisted with: C E 256

**E S 256 L. Environmental Science Laboratory** 1 cr.  
Laboratory experiments associated with the material presented in E S 256. Corequisite: E S 256. Same as C E 256L.

**E S 300. Special Topics** 1-4 cr.  
Special subjects and credits to be announced in the Schedule of Classes. Consent of instructor required. Maximum of 4 credits per semester. Restricted to majors.

**E S 301. Principles of Ecology** 3 cr.  
A survey of ecology including general theory, the adaptations of organisms, population dynamics, species interactions, and the structure and function of natural communities and ecosystems. Prerequisite(s): BIOL 111G, A ST 311, and grade of C or better in MATH 191 or Math Placement Exam score adequate to enroll in mathematics courses beyond MATH 191. Crosslisted with: BIOL 301

**E S 312. Emergency Response to Hazardous Material Incidents** 2 cr.  
EPA approved Environmental Response Training Program Course 165.15. In compliance with OSHA 29 CFR 1910.120. Normally taken during last year of study. Prerequisite: consent of instructor. Same as E T 312 and WERC 312.

**E S 330. Environmental Management Seminar I** 1 cr.  
Restricted to: Main campus only. Crosslisted with: A EN 330, C E 330, E E 330, I E 330, M E 330, WERC 330 and CH E 330.

**E S 361. Basic Toxicology** 3 cr.  
Prerequisite: CHEM 110G, CHEM 112G, or CHEM 114. BIOL 110G or BIOL 190 recommended. Same as TOX 361.

**E S 370. Environmental Soil Science** 3 cr.  
Continuation of SOIL 252 that emphasizes soil properties and processes that directly relate to environmental pollution problems. Prerequisite: SOIL 252. Same as SOIL 370.

**E S 391. Internship** 1-3 cr.  
Professional work experience under the joint supervision of the employer and a faculty member. A written report is required. Maximum of 3 credits toward a degree. Restricted to majors. Graded S/U.

**E S 422. Environmental Chemistry** 3 cr.  
Chemistry of organic and metal ion pollutants in the environment and principles important to their remediation including bioremediation. Prerequisite(s): CHEM 112G and either CHEM 211 or CHEM 313. Restricted to: Main campus only. Crosslisted with: CHEM 422

**E S 423. Environmental Toxicology** 3 cr.  
Toxicological tests required by the EPA to determine human and environmental safety of pesticides and industrial pollutants; discussion of environmental fate of major pesticide classes and industrial pollutants. Prerequisite(s): TOX 361 or TOX 461. Crosslisted with: TOX 423

**E S 430. Environmental Management Seminar II** 1 cr.  
Survey of practical and new developments in environmental management field, hazardous and radioactive, waste management, and related health issues, provided through a series of guest lectures and reports of ongoing research. Restricted to: Main campus only. Crosslisted with: C E 430, CH E 430, E E 430, E T 430, I E 430 and WERC 430

**E S 434. Aquatic Contaminants and Toxicology** 4 cr.  
Basic principles and methodologies of aquatic toxicity testing. Routes of exposure and modes of action. Environmental legislation and ecological risk assessment. Prerequisite(s): Senior standing or consent of instructor. Crosslisted with: WLSC 434

**E S 449. Special Problems** 1-3 cr.  
Research problem, experience training, or other special study approved by a faculty advisor. Maximum of 3 credits per semester and 6 credits toward a degree. Restricted to majors.

**E S 452. Geohydrology** 3 cr.  
Origin, occurrence, and movement of fluids in porous media and assessment of aquifer characteristics. Development and conservation of ground water resources, design of well fields. Prerequisite(s): C E 160 or GEOL 111G, and C E 231. Crosslisted with: GEOL 452 and C E 452

**E S 459. Aquatic Ecology** 4 cr.  
Ecological functions of plant and animal communities in aquatic ecosystems with emphasis on chemical and physical properties, productivity, species interactions, population dynamics, and concepts for diagnosing problems and restoring aquatic ecosystems. Prerequisite(s): (E S, WLSC or BIOL 301), CHEM 112G, (MATH 142G or MATH 191G). Crosslisted with: WLSC 459

**E S 460. Introduction to Air Pollution** 3 cr.  
An introduction to the physics and chemistry of tropospheric air pollution including sources of air pollution, local and long-range transport, instrumentation, regulatory requirements, control technology. Prerequisite(s): PHYS 215, CHEM 112, MATH 191.

**E S 462. Sampling and Analysis of Environmental Contaminants** 3 cr. (1+6P)  
Theory, application, methodology, and instrumentation used in the sampling and analysis of environmental contaminants. Prerequisites: E S 256. Same as ENVE 462.

**E S 470. Environmental Impacts of Land Use** 3 cr.  
Capstone course for the environmental science major. Case studies of environmental problems impacting land. Prerequisites: E S 256, E S 462, E S 370.

### **E T- ENGINEERING TECHNOLOGY**

**E T 101. Introduction to Engineering Technology** 1 cr.  
The development of engineering technology, with an introduction to engineering technology, education, and practice. Graded S/U.

**E T 104. Soldering Techniques** 1 cr. (3P)  
Fundamentals of soldering, desoldering, and quality inspection of printed circuit boards.

**E T 106. Drafting Concepts/Computer Drafting Fundamentals I** 4 cr. (2+4P)  
Basic drafting skills, terminology, and visualization. Introduction to principles and fundamentals of computer-aided drafting. Prerequisite: OECS 125, OECS 207, or consent of instructor. Community Colleges only. Same as DRFT 112.

**E T 109. Computer Drafting Fundamentals** 3 cr. (3+2P)  
Crosslisted with: DRFT 109, C E 109 and SUR 109

**E T 110. Introduction to Computer-Aided Drafting and Design** 3 cr.  
Introduction to computer-aided drafting and design using 3-D solid modeling software.

**E T 115. Introduction to Environmental Technology** 3 cr.  
Provides an introduction to the fields of environmental science and environmental engineering. Includes engineering aspects of current environmental issues and the effects of pollution on local, state, national and worldwide scales. Required for all advanced hazardous materials courses. Corequisite: either MATH 120 or high school chemistry, or CHEM 110G. Carlsbad Community College campus only.

**E T 120. Computation and Presentation Software** 3 cr.  
The use of database, spreadsheet, and presentation software in the field of engineering technology. Introduction to Internet resources and construction of homepages.

**E T 125. Introduction to Renewable Energy** 3 cr.  
Renewable energy systems, including topics in thermal-solar photovoltaic, wind, geothermal systems, and other current topics. Theory, practical applications, safety considerations and the economics of alternative renewable energy systems compared to conventional systems.



- E T 126. Fundamentals of Solar Energy 3 cr.  
Solar energy technologies, including topics in passive, solar thermal and photovoltaic systems. Theory, practical applications, safety considerations and the economics of solar renewable energy systems compared to conventional systems.
- E T 127. Fundamentals of Wind Energy 3 cr.  
Wind energy technologies, including wind thermal systems. Theory, practical applications, safety considerations, and the economics of wind renewable energy systems. Students will be introduced to hands-on trainers. Restricted to: Carlsbad campus only.
- E T 128. Fundamentals of Sustainable Construction 3 cr.  
Sustainable building materials, methods, and techniques including green architecture and design, codes, standards and specifications.
- E T 142. Energy Auditor Techniques 4 cr.  
Hands-on course that will teach you how to conduct a detailed home energy audit. You will learn to identify the common energy wasting areas of a residence. You will also learn more in-depth energy conservation techniques.
- E T 153. Introduction to Computer Networks 3 cr.  
Introduction to basic computer network fundamentals including International Open Systems Interconnect (OSI), the seven-layer model, and various networking hardware devices. Community Colleges only.
- E T 154. Construction Methods and Communications 3 cr.  
Blueprint reading, specifications, and introduction to materials used in construction.
- E T 155. Network Operating Systems I 3 cr. (3+1P)  
Introduction to a computer network operating system. May not be used as part of an E T degree program on main campus. Prerequisite(s): E T 120 or E T 122. Restricted to: Community Colleges only.
- E T 160. Basic Computer Operating Systems 3 cr.  
Basics of the most commonly used computer operating systems, command line interface, file systems, file manipulations, remote login, etc. Introduction to computer programming operations.
- E T 182. Digital Logic 3 cr.  
The use of truth tables, Boolean equations, and diagrams to define, simplify, and implement logic-valued functions.
- E T 183. Applied DC Circuits 2 cr.  
Application of Ohm's law, Kirchhoff's laws, Thevenin's, and Norton's theorems to the analysis of DC passive circuits. Corequisite(s): MATH 120G.
- E T 183 L. Applied DC Circuits Lab 1 cr. (2P)  
Laboratory to accompany E T 183. Corequisite: E T 183.
- E T 184. Applied AC Circuits 2 cr.  
Application of circuit laws and theorems to analysis of AC passive circuits. Resonant circuit, polyphase circuit and magnetic circuit topics are introduced. Prerequisite(s): E T 183. Corequisite(s): MATH 121G.
- E T 184 L. Applied AC Circuits Lab 1 cr. (2P)  
Laboratory to accompany E T 184. Corequisite: E T 184.
- E T 190. Applied Circuits 3 cr.  
Application of Ohm's law, Kirchhoff's laws, and Thevenin's theorems to the analysis of AC and DC passive circuits. Electronic circuit topics are introduced. Pre/Corequisite(s): MATH 190G.
- E T 191. Applied Circuits Laboratory 1 cr. (2P)  
Laboratory to accompany E T 190.
- E T 200. Special Topics 1-3 cr.  
Directed study or project. Prerequisite: consent of department head. May be repeated for a maximum of 6 credits.
- E T 210. Computer-Aided Design 2 cr. (3P)  
Computer-aided design using 3-D solid modeling software, with introduction to FEA simulation. Prerequisite: ET 110
- E T 217. Manufacturing Processes 3 cr.  
Manufacturing methods and industrial processes which include casting, forming and machining. Introduction to the composition, fabrication, characteristics, and applications of industrial materials. Prerequisite: E T 110 and MATH 185. Corequisite: E T 217L. Same as I E 217.
- E T 217 L. Manufacturing Processes Lab 1 cr. (3P)  
Laboratory to accompany E T 217. Corequisite: E T 217. Same as I E 217L.
- E T 220. Internship 1-6 cr.  
Internship requiring an approved number of hours of varied and progressive experience in the field of study. The scope and other requirements of the internship are stated in an individualized syllabus and through a memorandum of understanding between the faculty mentor and the industry partner. Prerequisite: Consent of instructor. May be repeated for a maximum of 6 credits.
- E T 225. Applied Industrial Hygiene and Safety 3 cr.  
Chemical, physical, biological, and ergonomic stresses of humans associated with the industrial environment; noise, air quality, person-machine interaction, sampling methods and proper control methods. Safety related laws and regulations.
- E T 230. Introduction to Servo Systems 3 cr.  
Introduction to Servo Systems. Topics include uses of servos in the industry, servo types, loop gains and frequency response, software control systems, damping, feedback, encoders, synchros and resolvers. Prerequisite(s): E T 246.
- E T 240. Applied Statics 3 cr.  
Fundamental topics of applied statics, including force system analysis, equilibrium, free body diagrams, methods of joints and sections, distributed loads, friction, centroids, area moments, and shear and moment diagrams. Prerequisite: PHYS 211G. Corequisite: MATH 235.
- E T 241. Applied Dynamics 3 cr.  
Applied kinematic and kinetic planer analysis of particles and rigid bodies, including use of kinematic equations, Newton's second law, the work energy method, and the impulse momentum method. With recitation sessions, as required. Prerequisite: E T 240 and MATH 235.
- E T 245. Computer Hardware Fundamentals 3 cr. (2+2P)  
Computer hardware fundamentals including architecture, interfacing, peripherals, troubleshooting, system upgrades, and maintenance. Prerequisite(s): E T 182.
- E T 246. Electronic Devices I 4 cr. (3+3P)  
Solid-state devices including diodes, bipolar-transistors, and field effect transistors. Use of these devices in rectifier circuits, small signal and power amplifiers. Prerequisite(s): (E T 190 and E T 191) or E T 184.
- E T 253. Networking Operating Systems II 3 cr. (3+1P)  
Introduction to a computer network operating system. May not be used as part of an E T degree program on main campus. Prerequisite(s): E T 120 or E T 122. Restricted to: Community Colleges only.
- E T 254. Concrete Technology 3 cr. (2+2P)  
Fundamentals of aggregates, Portland cement, and asphalt used in design and construction.
- E T 255. Web Systems 3 cr.  
Introduction to web technologies and systems, including hypertext, self-descriptive text, web page design, web navigational systems, and cascading style sheets. Prerequisite(s): E T 160.
- E T 256. Networking Operating Systems III 3 cr. (3+1P)  
Introduction to a computer network operating system. May not be used as part of an E T degree program on main campus. Prerequisite(s): E T 120 or E T 122. Restricted to: Community Colleges only.
- E T 262. Software Technology I 3 cr. (2+2P)  
An introduction to computer programming concepts as applied to engineering technology. Includes basic logic design, algorithm development, debugging and documentation. History and use of computers and their impact on society. Satisfies general education computer science requirement. Prerequisite(s): E T 120 or E T 122.
- E T 272. Electronic Devices II 4 cr. (3+3P)  
Differential amplifiers, operational amplifiers, positive and negative feedback, and computer-aided circuit analysis. Prerequisite(s): E T 246 and Math 235.
- E T 273. Fundamentals of Networking Communications I 3 cr. (2+2P)  
Introduction to networking basics, including computer hardware and software; electricity; networking terminology; protocols; LANs; WANs; OSI model; IP addressing; and design and documentation of basic network and structure cabling. Community Colleges only.
- E T 276. Electronic Communications 4 cr. (3+3P)  
Antennas, transmission devices, A-M and F-M transmission and detection, pulse systems, microwave systems. Prerequisite: E T 246.
- E T 277. Fundamentals of Network Communications II 3 cr. (2+2P)  
Introduction to routers and routing, including router-user interfaces, components and configuration, IOS versions, naming, software backups, TCP/IP protocol suite, IP addressing and subnetting, RIP, and IGRP. Prerequisite: E T 273. Community Colleges only.
- E T 280. Introduction to Multimedia 3 cr.  
Introduction to video, audio and other digital presentation methods. Prerequisite(s): E T 255.
- E T 282. Digital Electronics 4 cr. (3+3P)  
Applications of digital integrated circuits, multiplexers, counters, arithmetic circuits, and microprocessors. Prerequisite(s): E T 182. Pre/Corequisite(s): E T 190 or E T 184.

- ET 283. Hardware PC Maintenance 3 cr. (3+1P)  
Installing, configuring, troubleshooting, and maintaining personal computer hardware components. Prerequisite(s): E T 120 or E T 122.
- ET 284. Software PC Maintenance 3 cr. (3+1P)  
Installing, configuring, troubleshooting, and maintaining personal computer operating systems. Prerequisite(s): E T 120 or E T 122.
- ET 285. Principles of Security 3 cr.  
Examines the field of information security within a real-world context of issues faced by today's IT professionals. Prerequisite(s): E T 283 or consent of instructor.
- ET 286. Fundamentals of Security 3 cr.  
An overview of general security concepts for information technology systems. Prerequisite(s): E T 283 or consent of instructor.
- ET 287. PC Disaster and Data Recovery 3 cr.  
This course provides an overview of the various causes of personal computer data failure and methods to mitigate the loss of your personal computer data. The focus is on restoring your personal computer to full PC functionality and recovering lost and damaged files after one of these unforeseen problems. In addition, the course provides a means to lessen the impact of these inevitable events with the preparation of a disaster recovery plan. Prerequisite(s): E T 120 or E T 122.
- ET 289. Database Fundamentals 3 cr.  
The course includes database design, administration, security issues, and using the systems developed to access data in various computer and communication environments. Prerequisite(s): E T 120 or E T 122.
- ET 290. Networking Wireless Communication 3 cr. (3+1P)  
This course provides an introduction to wireless networking and communications. Some of the topics covered are protocols, transmission methods, and IEEE 802.11 standards. Wireless LAN (WLAN) fundamentals, devices, and security, cellular telephony, broadband, and satellite communications. Prerequisite: E T 273.
- ET 291. PC Forensics and Investigation 3 cr.  
Introduction to computer forensics and investigative fundamentals. Topics include understanding computer forensic and investigation law and requirements, processing crime and incident scenes, and the extraction, preservation, analysis and presentation of computer-related evidence. Prerequisite(s): E T 120 or E T 122.
- ET 297. Emergency Response to Hazardous Material Incidents 3 cr.  
EPA approved Environmental Response Training Program Course 165.15. Intended for the members of hazardous materials response teams. Normally should be taken during last year of study. Community Colleges only.
- ET 300. Special Topics 1-3 cr.  
Directed study or project. Prerequisite: consent of department head. May be repeated for a maximum of 6 credits.
- ET 302. Manufacturing Data Analysis 3 cr.  
Methods for analyzing data collected during manufacturing processes. Emphasis placed on production control utilizing results of statistical methods and design of experiments. Prerequisite(s): MATH 235.
- ET 305. Design for Manufacturing 3 cr. (2+3P)  
The process of product design and development from concept to manufacturing to insure manufacturability, quality, cost effectiveness, and customer satisfaction. Prerequisite: junior standing in E T.
- ET 306. Fundamental and Applied Thermodynamics 3 cr.  
First and second laws, properties of substances, thermodynamic cycles including power generation and refrigeration. Prerequisite: CHEM 110G, E T 240 and MATH 235.
- ET 306 L. Thermodynamics Lab 1 cr.  
Applications of thermodynamic theory to lab devices. Practice in testing, instrumentation, and data collection. Prerequisites: E T 190 and E T 191. Corequisite: E T 306.
- ET 308. Fluid Technology 3 cr.  
Application of basic principles of fluid mechanics to practical applied problems. Prerequisites: MATH 235 and E T 240.
- ET 308 L. Fluid Technology Lab 1 cr. (3P)  
Measurements in fluid statics, dynamics, and hydraulic systems. Corequisite: E T 308.
- ET 309V. Manufacturing: History and Technology 3 cr.  
The history of manufacturing, the technology on which it is based, and its impact on society.
- ET 310. Applied Strength of Materials 3 cr.  
Application of principles of strength of materials to practical design and analysis problems. Prerequisites: MATH 235 and E T 240.
- ET 310 L. Applied Strength of Materials Lab 1 cr. (3P)  
Testing physical properties of materials. Corequisite: E T 310.
- ET 312. Emergency Response to Hazardous Material Incidents 2 cr.  
Same as E S 312, WERC 312.
- ET 314. Communications Systems I 3 cr.  
Circuits and devices used for transmission, reception, and processing of RF signals. Consent of instructor required. Prerequisite(s): E T 246 & MATH 190.
- ET 317. Manufacturing Technology 3 cr.  
Modern manufacturing methods and processes with characteristics and applications of industrial materials. For non-majors.
- ET 324. Linear Integrated Circuits 4 cr. (3+3P)  
Passive and active linear circuit analysis in the frequency domain, passive and active filters, introduction to digital signal processing. Prerequisite(s): E T 272. Pre/Corequisite(s): Math 236.
- ET 328. Kinematics of Machines 3 cr. (2+3P)  
Kinematic analysis of machine elements with topics of linkages, cams, and gears. Graphical and analytical solutions using computer techniques. Prerequisite(s): E T 241.
- ET 330. Environmental Management Seminar I 1 cr.  
Survey of practical and new developments in hazardous and radioactive waste management provided through a series of guest lectures and reports of ongoing research. Prerequisite(s): E T 310 and E T 310L. Corequisite(s): MATH 236. Restricted to: Main campus, , , , . Restricted to ETSE majors. Crosslisted with: C E 330, CH E 330, E E 330, E S 330, M E 330, I E 330 and WERC 330
- ET 332. Applied Design of Structures I 4 cr. (3+3P)  
An introduction to structural analysis and design. Use of various building codes for development of allowable and factored loads on structures. Allowable stress and strength design concepts for structural components using concrete and steel. Required use of computer software such as spreadsheets, databases, and self-developed programs and design aids.
- ET 339. Computer Forensics 3 cr. (2+3P)  
Legal, regulatory, and technical aspects of computer forensics. Topics include current law; privacy legislation; chain of evidence; creating a computer incident response team; and the extraction, preservation, analysis, and presentation of computer-related evidence. Prerequisite(s): E T 182 and MATH 190 and (E T 262 or E T 245).
- ET 344. Microcomputer Systems 3 cr. (2+3P)  
Microcomputer and/or microcontroller systems applications and architectures with a software emphasis using assembly language programming. Prerequisite(s): E T 182 and MATH 190. Pre/Corequisite(s): E T 362.
- ET 354. Soil and Foundation Technology 4 cr. (3+3P)  
Fundamentals of investigation of soil properties and their importance in design, construction, and testing as related to buildings, roads, dams, and other structures. Design of foundations considering slope stability, bearing capacity and settlement. Prerequisites: E T 240 and E T 254. Restricted to Engineering Technology and Civil Engineering majors.
- ET 355. Site/Land Development and Layout 3 cr.  
Techniques, methods, and takeoffs for infrastructure layout, site plan design, grading, earthwork, utilities, road construction. Prerequisites: SUR 222 and junior standing. Restricted to majors. Restricted to Engineering Technology and Civil Engineering majors.
- ET 360V. Technology in Business and Society 3 cr. (2+2P)  
Examination of how technology affects business and society with specific attention to understanding the role of technical personnel and their interaction with nontechnical personnel.
- ET 362. Software Technology II 3 cr.  
A continuation of topics from E T 262 that are directed toward more advanced software development. Topics include problem analysis, object oriented, structured logic, and development concepts. Prerequisite(s): E T 262 and MATH 190G.
- ET 365. Building Utilities 3 cr. (2+3P)  
Basic design and code applications in plumbing and electrical systems for buildings. Prerequisites: junior standing in E T.
- ET 377. Computer Networking I 3 cr. (3+2P)  
Computer network design and applications for LAN to WAN, protocols, switches, bridges, routers, NT server, TCP/IP networks, network diagnostics, voice over IP, wireless networks, and the OSI layers from physical to transport. Prerequisite(s): E T 182 & Math 190.

- ET 381. Renewable Energy Technologies 3 cr.  
Renewable energy systems, including topics in thermal-solar, photovoltaic, wind, geothermal systems, and other current topics. Theory, practical applications, safety considerations and the economics of alternative renewable energy systems compared to conventional systems. Prerequisite(s): MATH 121. Crosslisted with: WERC 381
- ET 382. Solar Energy Technologies 3 cr. (2+3P)  
Solar energy technologies, including topics in passive, solar thermal, and photovoltaic systems. Theory, practical applications, safety considerations and the economics of solar renewable energy systems compared to conventional systems. Prerequisite(s): MATH 121G. Crosslisted with: WERC 382
- ET 384. Wind and Water Energy Technologies 3 cr. (2+2P)  
Wind and Water energy technologies, including topics in small and large scale systems. Theory, practical applications, safety considerations and the economics of wind and water renewable energy systems compared to conventional systems. Prerequisite(s): MATH 121. Crosslisted with: WERC 384
- ET 386. Sustainable Construction and Green Building Design 3 cr.  
Sustainable Building materials, methods, and techniques including green architecture and design, codes, standards and specifications. Prerequisite: MATH 121G.
- ET 396. Heat Transfer and Applications 3 cr. (2+3P)  
Fundamentals of conduction, convection, and radiation heat transfer. Application of heat transfer, thermodynamics, and fluid mechanics principles to thermal system analysis and design. Prerequisite(s): E T 306 and E T 308.
- ET 398. Digital Systems 3 cr. (2+3P)  
Advanced analysis and design of digital systems using state machine logic, programming of logic devices, implementation and testing. Prerequisite(s): E T 282 and MATH 190. Pre/Corequisite(s): E T 362.
- ET 400. Special Topics 1-3 cr.  
Directed study or project. Prerequisite: consent of department head. May be repeated for a maximum of 6 credits.
- ET 401. Heating and Air-Conditioning Systems 3 cr.  
HVAC system design including heating and cooling load calculations, psychometrics, piping, duct layout, and system control. Prerequisite: E T 306. Corequisite: E T 396. Same as M E 401.
- ET 402. Instrumentation 3 cr. (2+3P)  
Sensors/transducers, signal conditioning and transmission for measurement and control systems. Student project in an area of instrumentation and/or control is required. Prerequisite: senior standing in E T.
- ET 404. Quality in Manufacturing 3 cr.  
Total quality, reliability, and statistical process control for industrial systems. Prerequisite: E ST 311.
- ET 410. Senior Seminar 1 cr.  
Transition from academics to business and industry. Graded S/U. Prerequisite: senior standing in E T.
- ET 412. Highway Technology 3 cr.  
Road-vehicle performance, geometric alignment, traffic analysis, highway materials, pavement design, and plan and profile development. Prerequisites: E T 355.
- ET 415. Manufacturing Management and Productivity 3 cr.  
Projects incorporating concurrent engineering, total quality management, design for manufacturability/assembly, and other contemporary topics in manufacturing. Prerequisites: senior standing in E T.
- ET 418. Applied Hydraulics 3 cr.  
Introduction to hydrology, hydraulic equations, hydraulic cross-sections, control structures, and collection and distribution of water, wastewater, and storm runoff using closed conduit and open channel flow. Prerequisite: E T 308 and MATH 236.
- ET 420. Senior Internship 1-6 cr.  
Internship requiring an approved number of hours of varied and progressive experience in the field of study. The scope and other requirements of the internship are stated in an individualized syllabus and through a memorandum of understanding between the faculty mentor and the industry partner. Taken in the senior year of program. Prerequisites: Senior standing in E T.
- ET 421. Senior Project 3 cr.  
Project in an area of civil engineering technology conducted under the direction of civil engineering technology faculty member. Project must be one that can be completed within a semester and of sufficient complexity for 3 credits. Taken last semester of program.
- ET 422. Mechanical Measurements 3 cr. (2+3P)  
Techniques in mechanical measurements, including topics in experimental techniques, measurement devices and systems, data acquisition, data transmission, signal conditioning, data analysis, data verification, and report writing. Prerequisite: senior standing in E T.
- ET 426. Analysis/Design of Machine Elements 3 cr. (2+3P)  
Analysis of machine elements including columns, springs, shafts, coupling mechanisms, gears, belts and chain drives, clutches, brakes, and bearings. Prerequisites: MATH 236 and E T 310.
- ET 432. Applied Design of Structures II 4 cr. (3+3P)  
Continuation of ET 332. Design of structural systems and study of their responses. Wood and masonry systems included. Prerequisite: E T 332.
- ET 435. Senior Project 3 cr. (2+3P)  
Capstone course. Practical application of student's cumulative knowledge to assigned design projects that require implementation of standards analysis techniques and design principles, teamwork, and project management skills. Stresses importance of codes, standards, and economics in design practice. Demonstration of written and oral communication skills via project documentation and presentation of results. Prerequisite: graduating senior.
- ET 440. Senior Design 2 cr. (1+2P)  
Team design of a system, mechanism, or model that will be fabricated or simulated during the following semester in E T 441. Pre/Corequisite(s): E T 444.
- ET 441. Senior Project 2 cr. (1+2P)  
Team fabrication or simulation, testing, and debugging of a system, mechanism or model designed in E T 440. Prerequisite(s): E T 440.
- ET 444. Hardware and Software Senior Design 3 cr. (2+3P)  
The design, development, implementation, documentation and formal demonstration of a microprocessor-based application to solve an engineering problem. Emphasis on microprocessor architectural concepts and software interfacing. A student project is required. Prerequisite(s): E T 344 and E T 398.
- ET 454. Advanced Construction Technology 3 cr.  
Contractor design and construction methods concerning formwork, special foundations, shoring, excavations, pilings, steel erection, and various material handling components. Prerequisite: E T 354 and E T 355.
- ET 455. Cost Estimating and Scheduling 3 cr.  
Methods and techniques in construction estimating including final bid preparation, construction planning and scheduling using various network methods and other techniques. Prerequisite: junior or senior standing in E T.
- ET 456. Analysis of Physical Security Systems 3 cr.  
The design, analysis and implementation of security systems and subsystems including threat detection and response, information and communications security, and physical protection. Prerequisite: junior standing.
- ET 457. Introduction to Information Security Technology 3 cr.  
Practical techniques of Data Encryption Technology, Steganography for Information Technology, Intrusion Detection and Countermeasures. Use of Python to write system tools for detecting anomalies in data flow. Design of physically secure data housing. Techniques of Industrial Espionage. Hiding and Finding of secrets in the field. Dead Drops, design of Fake ID's. Use of PGP and other public encryption methods. Using DNS tools to track down hackers. Hiding of information in music and other audio files. Prerequisite(s): E T 362 and E T 377.
- ET 458. Database Technology for Engineering 3 cr.  
Using SQL in a Tomcat (Java Servlet oriented) environment. Data conversion using Python and line editing for Engineering Technology departments. Methods of transferring data from electronic boards and data feeds, into databases. Use of SQL in java programming. Remote programming of computers for running database systems in a mixed OS environment. Generation of web pages directly from Database queries. Prerequisite(s): E T 362.
- ET 462. Remote Access Operating Systems and Advanced Scripting 3 cr.  
Concepts relating to operating systems applications and interfacing with an introduction to systems administration. Scripting using Python and Unix. Design and control of Web servers using CGI programming. Prerequisite(s): E T 362.
- ET 463. Computer Systems Administration 3 cr.  
A continuation of topics in computer systems administration from E T 462. Prerequisite(s): E T 462 and E T 280.



- ET 464. Advanced Windows Server Administration 3 cr.  
Learn about configuration and maintenance of programs in Windows Server such as Microsoft SQL Server, Microsoft Exchange, Oracle, DHCP, DNS, Apache WebServer, Tomcat Server, Load Balancing, Backups, File Sharing, Remote Administration and more. Prerequisite(s): ET 458 and ET 462.
- ET 472. Intelligent Transportation Systems (ITS) 3 cr.  
Traffic flow theory, telecommunication and information technology application in transportation, system architecture and standards, transportation management, incident and emergency management, corridor management, dynamic route guidance, in-vehicle systems, and traffic signal timing. Consent of instructor required.
- ET 477. Computer Networking II 3 cr.  
Advanced concepts in computer network design and applications including managing the campus network, virtual LANs (VLAN), network security, wireless networks, high-speed optical networks, voice over IP, and Linux networking. Prerequisite(s): ET 377.
- ET 482. Concepts in Computer Integrated Manufacturing 3 cr. (2+2P)  
Current manufacturing concepts regarding the data, hardware, and software necessary for a computer integrated manufacturing system. Prerequisites: senior standing and consent of instructor. Same as I E 482 and M E 482.
- ET 490. Selected Topics 1-3 cr.  
Selected topics in engineering technology and related areas. Prerequisite: consent of instructor.

### ECED- EARLY CHILDHOOD EDUCATION

- ECED 115. Child Growth, Development, and Learning 3 cr.  
This basic course in the growth, development, and learning of young children, prenatal through age eight, provides students with the theoretical foundation for becoming competent early childhood professionals.
- ECED 125. Health, Safety, and Nutrition 2 cr.  
This course provides information related to standards and practices that promote children's physical and mental well being sound nutritional practices, and maintenance of safe learning environments.
- ECED 135. Family and Community Collaboration 3 cr.  
This beginning course examines the involvement of families and communities from diverse cultural and linguistic backgrounds in early childhood programs. Ways to establish collaborative relationships with families in early childhood settings is discussed. Prerequisite(s): ECED 115 and ENGL 111G.
- ECED 215. Curriculum Development Through Play 3 cr.  
The beginning curriculum course places play at the center of curriculum in developmentally appropriate early childhood programs. It addresses content that is relevant for children birth through age four and developmentally and culturally sensitive ways of integrating content into teaching and learning experiences. Information on adapting content areas to meet the needs of children with diverse abilities and the development of IFSP's and IEP's is included. Consent of instructor required. Prerequisite(s): ECED 115 and ENGL 111G. Corequisite(s): ECED 220.
- ECED 220. Early Childhood Education Practicum I 2 cr.  
The beginning practicum course will provide experiences that address curriculum content that is relevant for children birth through age four in developmentally and culturally sensitive ways. Consent of instructor required. Prerequisite(s): ECED 115 and ENGL 111G. Corequisite(s): ECED 215.
- ECED 225. Curriculum Development and Implementation II 3 cr.  
The second curriculum course focuses on developmentally appropriate curriculum content in early childhood programs, age 3 through third grade. Development and implementation of curriculum in all content areas, including literacy, numeracy, the arts, health and emotional wellness, science, motor and social skills, is emphasized. Information on adapting content areas to meet the needs of children with diverse abilities and the development of IEP's is included. Consent of instructor required. Prerequisite(s): ECED 115, ENGL 111G. Corequisite(s): ECED 230.
- ECED 230. Early Childhood Education Practicum II 2 cr.  
The second field-based curriculum course focuses on practicing developmentally appropriate curriculum content in early childhood programs, age 3 through third grade. Consent of instructor required. Prerequisite(s): ECED 115, ENGL 111G., Corequisite(s): ECED 225.
- ECED 235. Introduction to Language, Literacy and Reading 3 cr.  
This course is designed to prepare early childhood professionals for promoting children's emergent literacy and reading development. Through a developmental approach, the course addresses ways in which early childhood professionals can foster young children's oral language development, phonemic awareness, and literacy problem solving skills, fluency, vocabulary, and comprehension. Prerequisite(s): ECED 115 and ENGL 111G.
- ECED 245. Professionalism 2 cr.  
This course provides a broad-based orientation to the field of early care and education. Early childhood history, philosophy, ethics and advocacy are introduced. Basic principles of early childhood systems are explored. Multiple perspectives on early care and education are introduced. Professional responsibilities such as cultural responsiveness and reflective practice are examined.
- ECED 250. Independent Study 1-3 cr.  
Independent study for specific area of early childhood education. Prerequisite: Consent of instructor. Restricted to majors.
- ECED 255. Assessment of Children and Evaluation of Programs 3 cr.  
This basic course familiarizes students with a variety of culturally appropriate assessment methods and instruments, including systematic observation of typically and non-typically developing children. Prerequisite(s): ECED 115 and ENGL 111G. Crosslisted with: SPED 255
- ECED 265. Guiding Young Children 3 cr.  
This course explores various theories of child guidance and the practical applications of each. It provides developmentally appropriate methods for guiding children and effective strategies and suggestions for facilitating positive social interactions. Strategies for preventing challenging behaviors through the use of environment, routines and schedule will be presented.
- ECED 270. Program Management 3 cr.  
Technical knowledge necessary to develop and maintain a quality early care and education program. The course will focus on sound financial management and vision, laws and legal issues that affect programs and state and national standards including accreditation requirements. Prerequisite: consent of instructor.
- ECED 275. Curriculum for Diverse Learners and Their Families 3 cr.  
Implementation of family-centered programming that includes developmentally appropriate and culturally responsive curriculum. The course will also cover the establishment and maintenance of healthy and safe learning environments. Consent of instructor required.
- ECED 276. Effective Program Development for Diverse Learners and Their Families 2 cr.  
Practical experience in observing and carrying out the role of the director/administrator in the implementation of family-centered programming that includes individually appropriate and culturally responsive curriculum in a healthy and safe learning environment. Consent of instructor required. Corequisite(s): ECED 275. Restricted to ECED majors.
- ECED 280. Professional Relationships 3 cr.  
Development of staff relationships that will foster strong professional relationships with and among families, communities and advisory boards. Issues of staff recruitment, retention, support and supervision will lay a foundation for positive personnel management. Working effectively with board, advisory groups and community members and agencies will be addressed. Consent of instructor required. Corequisite(s): ECED 281.
- ECED 281. Professional Relationships Practicum 2 cr.  
Practical experience in the development of staff relationship that will foster professional relationships with families, communities and boards. Issues of staff recruitment, retention, support and supervision will lay a foundation for positive personnel management. Consent of instructor required. Corequisite(s): ECED 280. Restricted to ECED majors.
- ECED 295. Contemporary Developments 1-4 cr.  
Offered under different subtitles in the Schedule of Classes. May be repeated for a maximum of 9 credits.
- ECED 315. Research in Child, Growth, Development and Learning 3 cr.
- ECED 327. Infant-Toddler Field Placement 1 cr.  
Supervised field experience in diverse settings serving infants and toddlers. Restricted to majors. Graded S/U. Graded: S/U.
- ECED 328. Preschool Field Placement 1 cr.  
Supervised field experience in diverse settings serving children ages 3-5 years. Restricted to majors. Graded S/U. Graded: S/U.



- ECED 329. Early Primary Field Placement 2 cr. (4P)  
The field practicum is a co-requisite course with Teaching and Learning Reading and Writing; Teaching and Learning Math and Science; Teaching and Learning Social Studies, Fine Arts and Movement. The field based component will provide experiences that address curriculum content and practice teaching that is relevant for early primary children in developmentally and culturally sensitive ways. Graded: S/U. Corequisite(s): ECED 440, ECED 445, RDG 350.
- ECED 335. Family and Community Collaboration II 3 cr.  
This course analyzes the interrelationships between family, language, and culture as connected to children's development and learning. In this course, language is understood as a human activity and higher mental process which build on the children's families, community and cultural background. Prerequisite(s): ECED 135.
- ECED 351. Emergent Literacy 3 cr. (2+2P)  
This advanced course is designed to prepare early childhood professionals to study literacy development, specifically oral language, writing and reading. This course focuses on children from birth through age 4, including children with special needs. Through a developmental approach, the course addresses: 1) recent theory and research that translates into practical strategies, assessment materials and preparation of rich literacy environments, 2) the socio-cultural contexts in which children develop literacy, 3) culturally, linguistically and developmentally appropriate literacy curricula, 4) processes used to determine the appropriateness of various literacy strategies, 5) assessment, evaluation, and accountability and 5) literacy leadership. Prerequisite(s): ECED 235. Crosslisted with: RDG 351.
- ECED 395. Special Topics 1-3 cr.  
Each course will be identified by a qualifying subtitle. A maximum of 3 credits in any one semester and a grand total of 6 credits.
- ECED 405. Home Center/School Collaboration 3 cr.  
Techniques for working with parents as partners in their young child's educational setting.
- ECED 420. Integrated Early Childhood Curriculum 4 cr.  
This advanced course focuses on developmentally appropriate content, learning environments, and curriculum implementation for children birth through age 4. It emphasizes integration of content areas (the arts, literacy, math, health/emotional wellness, science, social studies, motor, and adaptive living skills) and the development of rich learning environments for infants, toddlers, and preschool children. Prerequisite(s): ECED 125, ECED 215, ECED 220, ECED 225, ECED 230, ECED 245, and ECED 265. Corequisite(s): ECED 425.
- ECED 425. Integrated Curriculum Practicum 2 cr.  
The advanced practicum course is a field based course that will provide opportunities for the integration of content areas (the arts, literacy, math, health/emotional wellness, science, social studies, motor, and adaptive living skills) and the development of rich learning environments for infants, toddlers, and preschool children. Prerequisite(s): ECED 125, ECED 215, ECED 220, ECED 225, ECED 230, ECED 245, ECED 265. Corequisite(s): ECED 420.
- ECED 440. Science/Math Curriculum 3 cr. (2+2P)  
Methods and materials for developmentally appropriate practices in teaching science and math for young children. Same as ECED 540 with differentiated assignments for graduate students.
- ECED 441. Language Arts/Social Studies Curriculum 3 cr. (2+2P)  
Methods and materials for developmentally appropriate practices in teaching language arts and social studies for young children. Same as ECED 541 with differentiated assignments for graduate students.
- ECED 443. Assessment of Children and Evaluation of Programs 3 cr.  
Advanced course builds on understanding the connections among learning, teaching, and assessment and strategies for evaluating programs. Assessment, identification, and monitoring of typical and atypical development in the cognitive, motor, affective and social domains. Multiple and diverse assessment approaches, including responsiveness to cultural and linguistic differences will be emphasized. Builds upon indicators of competence established at the lower division (AA) level. For each course objective (core competency) students will demonstrate the indicators established for the bachelor's level.
- ECED 451. Play in the Early Childhood Curriculum 3 cr.  
Development of curriculum based on children's play; a means of exploring and learning the patterns of human living, communications, and experiences congruous with their developing interests and capacities.
- ECED 452. Teaching Language Minority Children in Early Childhood Settings 3 cr.  
Framework and strategies for the educational development of young language-minority children.
- ECED 455. Teaching and Learning Social Studies, Fine Arts and Movement 3 cr. (2+2P)  
The course focuses on the aims, scope, and integration of methods of teaching social studies, the fine arts and movement across the curriculum. This course emphasizes an integrated approach to teaching the what and why of social studies; assessing student learning; planning units, lessons, and activities; effective instructional strategies; and knowledge of social studies content. Concepts of expressive art include the visual arts, music, movement and drama. Corequisite(s): ECED 440, ECED 329, RDG 350.
- ECED 458. Field Experience Infants Pre-K) 1 cr.  
Supervised field experiences in early childhood settings: infants, toddlers, and pre-K programs. Graded S/U.
- ECED 459. Field Experience K 3) 1 cr.  
Supervised field experiences in early childhood settings: public school programs K 3. Graded S/U.
- ECED 465. Advanced Caregiving for Infants and Toddlers 3 cr.  
The advanced field-based course is intended to assist students to define and implement advanced elements of quality programming for all infants, toddlers in safe, healthy, responsive caring environments. The experiences in the approved setting will support strong nurturing relationships, cultural competence, diverse learning needs and styles of every child, appropriate guidance techniques and partnership with the families, cultures, and community represented. Students are assisted through the course in advancing their ability to observe, discuss, and implement elements of quality programming for infants and toddlers in home, small-group or whole-group care situations. Crosslisted with: SPED 465
- ECED 470. Student Teaching/Seminar 6 cr.  
Provides student teaching experience in a variety of settings with young children ages birth 8.
- ECED 479. Curriculum in Early Childhood Education 3 cr.  
Development and implementation of curriculum and materials for teaching young children.
- ECED 489. Topics 3 cr.  
Offered under various subtitles which indicate the subject matter to be covered. May be repeated three times for a maximum of 9 credits.
- ECON- ECONOMICS**
- ECON 201G. Introduction to Economics 3 cr.  
Economic institutions and current issues with special emphasis on the American economy.
- ECON 251G. Principles of Macroeconomics 3 cr.  
Macroeconomic theory and public policy: national income concepts, unemployment, inflation, economic growth, and international payment problems.
- ECON 252G. Principles of Microeconomics 3 cr.  
Microeconomic theory and public policy: supply and demand, theory of the firm, market allocation of resources, income distribution, competition and monopoly, governmental regulation of businesses and unions.
- ECON 304. Money and Banking 3 cr.  
Income measurement and determination, monetary and fiscal policies. Prerequisite: ECON 251G or equivalent, or consent of instructor.
- ECON 324V. Developing Nations 3 cr.  
Economic analysis of problems related to development of developing nations. Issues such as growth, industrialization, poverty, population, international trade, foreign debt, and international economic relations. Prerequisite: ECON 201G or ECON 251G.
- ECON 325V. Economic Development of Latin America 3 cr.  
Economic analysis of problems related to development in Latin America, including the agrarian problem, debt and austerity programs, industrialization, inflation and unemployment, the drug trade, U.S.-Latin American relations, development strategies. Also individual countries problems. Prerequisite: ECON 201G or ECON 251G.
- ECON 332. Public Finance 3 cr.  
This course will examine the roles of government in modern, market-oriented, mixed economies. It will examine justifications for government participation in resource allocation, income distribution, and economic stabilization focusing primarily on the fiscal functions of government, taxation and public expenditure. Students will apply basic microeconomic analysis to analyze the impacts of public taxation and expenditures on economic decisions made elsewhere in the economy. In this course the emphasis will be on understanding the workings of public finance in fiscal federalist systems like the United States, but the principles taught will be applicable across other economic systems. Prerequisites: ECON 252

- ECON 335V. Business and Government 3 cr.  
Relation of government to business through regulation; political, legal, and social implications. Prerequisite: 3 credits of economics. Same as MGT 335V.
- ECON 336. Labor Problems 3 cr.  
Evolution of labor problems, development of unions, industrial conflict, and employer-employee relationships, labor legislation. Prerequisite: 3 credits of economics.
- ECON 337V. Natural Resource Economics 3 cr.  
Prerequisite: ECON 201 or ECON 252. Same as AG E 337V.
- ECON 340. American Economic History 3 cr.  
The rise of big business and organized labor, increasing price rigidities, and growing government intervention. Same as HIST 340.
- ECON 350. Current Economic Issues 3 cr.  
Contemporary American socio-economic problems related to technology, environment, employment, economic security, and income distribution. Content changes as issues change. Prerequisites: ECON 251G and ECON 252G or consent of instructor.
- ECON 371. Intermediate Microeconomic Theory 3 cr.  
Contemporary economic theory with emphasis upon value and distribution. Prerequisite: ECON 252G or equivalent.
- ECON 372. Intermediate Macroeconomic Theory 3 cr.  
Analysis of gross domestic product, the Classical, Keynesian, and Neo-Keynesian theories of income, employment, inflation and growth. Prerequisite: ECON 251G or equivalent.
- ECON 384V. Water Resource Economics 3 cr.  
Use of economic principles to evaluate current and emerging issues in water resources. Applications focus on use of economic methods of analysis to current policy decisions surrounding agricultural, municipal, industrial, and environmental uses of water. Prerequisite: AG E 100 or ECON 252G. Same as AG E 384V.
- ECON 401. Managerial Economics 3 cr.  
Application of economic theory to problems of business management. Prerequisites: ECON 252G and either MATH 125 or MATH 142 or equivalent, or consent of instructor.
- ECON 405. Economic Statistics 3 cr.  
Multiple regression and correlation applied to economics and business; inference techniques; significance tests; simultaneous equations, estimation, and problems. Prerequisite: STAT 251G or equivalent.
- ECON 406. The Economics of Sports 3 cr.  
Applying the tools of economic analysis to a particular industry and gaining an in-depth knowledge of the interaction of professional sports teams and leagues with the economy and society. Prerequisites: one previous course in economics or consent of instructor. Same as AG E 406.
- ECON 432V. Economics of Health Care 3 cr.  
Analysis of the allocation of resources in the field of health and medical care.
- ECON 450V. International Economics 3 cr.  
Trade and capital flows between countries, international payments, government policy in balance-of-payments and tariff matters, international organizations. Prerequisite: ECON 201G or equivalent. Same as I B 450V.
- ECON 453. Introduction to Health Services Policy 3 cr.  
The economics of health care policy in the United States with concern for U.S. Mexico border health issues and international comparisons. Same as MGT 462.
- ECON 455. Public Utilities Regulation 3 cr.  
Procedures of utility regulation; regulatory theory applied to specific industries; commission regulation compared to public ownership and deregulation. Prerequisites: ECON 252G, FIN 306, or consent of instructor. Same as MGT 455.
- ECON 457. Mathematical Economics 3 cr.  
Application of mathematical tools, especially the calculus, to economic theory. Prerequisite: one upper-division economics course.
- ECON 460. Intelligence Research and Analysis 3 cr.  
This course explores the organization, functions, and processes of the U.S. Intelligence Community (IC), with focus on practical intelligence research and analytical methods. Students will learn in-depth research techniques that will be valuable to any course of study. Critical thinking skills will be enhanced through the practice of analytical methods that can be applied toward national security and/or commercial interests. Unclassified and declassified data, including human intelligence, imagery, and other sources of evidence will be used in class projects and assignments. Intelligence successes and failures will be examined, as well as the politicization of intelligence and the relationship of intelligence activities to policy and policymakers. Prerequisite: Junior status or above.
- ECON 465. Economics of Human Resources 3 cr.  
Measurement, allocation, and utilization of human resources; labor supply, value of education and training, labor market dynamics, unemployment, government manpower programming.
- ECON 489. Senior Economics Seminar 3 cr.  
Seminar primarily for economics majors in their final semester. Provides an opportunity to apply economic theory to a broad variety of topics. Prerequisite: ECON 371 or ECON 372.
- ECON 490. Selected Topics 1-3 cr.  
Current topics in economics. Subject matter to be designated for each semester.
- ECON 498. Independent Study 1-3 cr.  
Individual studies directed by consenting faculty with the prior approval of the department head. May be repeated for a maximum of 3 credits. Prerequisite: junior or above standing and consent of instructor.
- EDLT- EDUCATIONAL LEARNING TECHNOLOGIES**
- EDLT 368. Integrating Technology with Teaching 3 cr.  
Considers impact of technology on communication and knowledge development; engages students in the design of technology-integrated lessons with a constructivist approach. Prerequisite: EDUC 168 or previous computer experience.
- EDUC- EDUCATION**
- EDUC 100. Orientation to Education 3 cr.  
Introduction to public education and teacher tasks and responsibilities.
- EDUC 102. Internship I 3 cr.  
Supervised experience in elementary education settings.
- EDUC 103. Internship in Bilingual Education/ESL 1-4 cr.  
Supervised experience in bilingual education/ESL elementary or secondary classroom settings for prospective bilingual education/ESL teachers.
- EDUC 150. Math for Paraprofessionals 3 cr.  
Applied math skills for paraprofessionals working with children. Prerequisite: CCDM 103.
- EDUC 151. Math for Paraprofessionals II 3 cr.  
Applied math skills for paraprofessionals working under the direction of a teacher. Prerequisite: EDUC 150.
- EDUC 161. Project Wild 1 cr.  
A supplemental, interdisciplinary instructional program for teachers of K-12 students. A way for teachers to incorporate concepts related to people, wildlife and a healthy environment into all major school subject and skill areas. Emphasizes lively, hands-on, diverse and instructionally sound educational activities. Community Colleges only.
- EDUC 162. Project WET 1 cr.  
Project WET (Water Education for Teachers), an international, interdisciplinary, water science and education program for formal and non-formal educators of K-12 student. Facilitates and promotes awareness, appreciation, knowledge, and stewardship of water resources through the development and dissemination of classroom ready teaching aids based on the Project WET Curriculum and Activity Guide, a collection of over 90 innovative, interdisciplinary activities that are hands-on, easy to use and fun. Community Colleges only.
- EDUC 163. Project Learning Tree 1 cr.  
An award winning environmental education program for teachers and other educators of students PK-12. Uses the forest as a window to the world to increase students understanding of our complex environment; stimulate critical and creative thinking; develop the ability to make informed decisions on environmental issues; and instill the confidence and commitment to take responsible action. Includes activities that help teach science, mathematics, English, language arts, social studies history, visual and performing arts. Community Colleges only.

- EDUC 168. Educational Uses of Computers 2 cr.  
Word processing, databases, spread sheets, telecommunications, and curricular applications.
- EDUC 181. Field Experience I 1 cr.  
Introduction to public school teaching, school visits, classroom observations and discussion seminar.
- EDUC 195. Individual Topics in Education 1-3 cr.  
Supervised study in a specific area of interest. Each course shall be designated by a qualifying subtitle. May be repeated for a maximum of 9 credits.
- EDUC 200. Educational Foundations 3 cr.  
The psychological, philosophical, sociological, and legal bases of education. Prerequisite: must be a co-op student.
- EDUC 202. Internship II 3 cr.  
Supervised experience in junior high settings. Prerequisite: must be a co-op student.
- EDUC 204. Foundations of Bilingual/ESL Education 3 cr.  
Explore and review the historical, legal, philosophical, theoretical and pedagogical paradigms of bilingual/ESL education.
- EDUC 216. Independent Studies 1-3 cr.  
Independent studies in education for education associate majors. Prerequisite: Education associate major or consent of instructor. Restricted to EA and OECC majors.
- EDUC 219. Pre-Teacher Preparation 3 cr.  
Assists students in developing the necessary competencies needed for acceptance to the Teacher Education Program. Course content includes basic skill development, test taking skills, and completion of teacher preparation packet. Maybe repeated for a maximum of 6 credits. Graded S/U. Community Colleges only.
- EDUC 300. Instructional Methodology 3 cr.  
Classroom planning, curriculum development, teaching techniques and applications. Prerequisite: must be a co-op student.
- EDUC 302. Internship III 3 cr.  
Student teaching in public school classroom according to major area of interest.
- EDUC 303. Internship in Bilingual Education/ESL 2 cr.  
Placement and observation in an educational bilingual setting for prospective bilingual education teachers. Same as EDUC 381.
- EDUC 315. Multicultural Education 3 cr. (2+2P)  
The conceptual manifestations of culture, race and ethnicity, class, gender, exceptionalities, language and bilingualism within the schooling process. Same as EDUC 515 with differentiated assignments for graduate students.
- EDUC 317V. Multicultural Issues in Society 3 cr.  
Conceptual manifestations of culture, race, ethnicity, class, gender, exceptionalities, language, and bilingualism within and across society.
- EDUC 342. Sheltered English Instruction for the ESL Classroom 3 cr.  
Addresses the acquisition of English proficiency by speakers of other languages.
- EDUC 343. Language, Literacy, and Culture in the ESL Classrooms 3 cr.  
Framework and strategies for developing the written abilities of second language learners.
- EDUC 344. Issues in Schooling for Bilingual Learners 3 cr.  
Current thought and direction regarding bilingual education in the United States and New Mexico.
- EDUC 381. Field Experience III 2 cr.  
Intensive observations, case study development, classroom language and culture, special education resources, student assessment and discussion seminar. Same as EDUC 303.
- EDUC 395. Special Topics in Education 1-3 cr.  
Offered under various subtitles in the Schedule of Classes. May be taken for a maximum of 3 cr. per semester and a total of 6 credits overall.
- EDUC 402. Internship IV 6 cr.  
Supervised co-teaching in educational setting according to major area of interest. Prerequisite: must be a co-op student.
- EDUC 450. Methods of Teaching Early Childhood Education 3 cr.  
Characteristics of the young child, play, guidance, communication, methods, materials, models, issues.
- EDUC 451. Methods of Teaching Elementary School Science 3 cr. (2+2P)  
Methods and materials for teaching elementary school science. Includes components of lessons and the use of multimedia. Prerequisites: 9 hours of science from biology, chemistry, physics, and earth sciences, with no more than 3 hours from any one department. Corequisites: ECED 450, EDUC 452, and RDG 360 (Block A courses). Same as EDUC 551 with differentiated assignments for graduate students.
- EDUC 452. Methods of Teaching Elementary School Mathematics 3 cr. (2+2P)  
Content, theories of cognition, and instructional approaches for the teaching of mathematics in the elementary grades. Prerequisite: MATH 111. Corequisites: ECED 450, EDUC 451, and RDG 360 (Block A courses). Same as EDUC 552 with differentiated assignments for graduate students.
- EDUC 453. Methods of Teaching Elementary School Language Arts 3 cr. (2+2P)  
Implications of language acquisition and development for instructional practices. Focus on student-centered response to literature, writing process, whole language learning, based on socio-psycholinguistic theory and research. Corequisites: RDG 361, EDUC 454, and EDUC 455 (Block B courses). Same as EDUC 553 with differentiated assignments for graduate students.
- EDUC 454. Methods of Teaching Elementary School Social Studies 3 cr. (2+2P)  
Focus on social studies curriculum and instruction including student-centered approaches, active learning, educational technology, nontextual curriculum, integration, multicultural education, authentic assessment, and practical applications. Corequisites: RDG 361, EDUC 453, and EDUC 455 (Block B courses). Same as EDUC 554 with differentiated assignments for graduate students.
- EDUC 460. Teaching Language Arts at the Middle and High School Level 3 cr. (2+2P)  
Implications of cognition and language development for appropriate secondary instructional practices. Focus on construction of meaning, student-centered response to literature, writing process, print and oral language development, based on socio-psycholinguistic research and theory. Practicum required. Same as EDUC 560.
- EDUC 461. Teaching Social Studies at the Middle and High School Level 3 cr. (2+2P)  
Integrating content knowledge and pedagogy for the middle and high school teacher in social studies. The focus will be on a variety of instructional strategies and pedagogical skills that will enhance the learning of social studies. Practicum required. Same as EDUC 561.
- EDUC 462. Teaching Mathematics at the Middle and High School Level 3 cr. (2+2P)  
Integrating content knowledge and pedagogy for the middle and high school teacher in mathematics. The focus will be on a variety of instructional strategies and pedagogical skills that will enhance the learning of mathematics. Practicum required. Same as EDUC 562.
- EDUC 463. Teaching Science at the Middle and High School Level 3 cr. (2+2P)  
Integrating content knowledge and pedagogy for the middle and high school teacher in science. The focus will be on a variety of instructional strategies and pedagogical skills that will enhance the learning of science for students in grades 6-12. Practicum required. Same as EDUC 563.
- EDUC 464. Teaching Foreign Language at the Middle and High School Level 3 cr. (2+2P)  
Integrating content knowledge and pedagogy for the middle and high school teacher in foreign language. The focus will be on a variety of instructional strategies and pedagogical skills that will enhance the learning of foreign language for students in grades 6-12. Practicum required. Same as EDUC 564.
- EDUC 467. Teaching Business Education at the Middle and High School Level 3 cr. (2+2P)  
Integrating content knowledge and pedagogy for the middle and high school teacher in business education. The focus will be on a variety of instructional strategies and pedagogical skills that will enhance the learning of business education for students in grades 6-12. Practicum required. Same as EDUC 567.
- EDUC 470. Elementary Student Teaching 9 cr.  
Synthesis of knowledge and skills appropriate to teaching in elementary schools. Graded S/U.
- EDUC 471. Secondary Student Teaching 9 cr.  
Synthesis of knowledge and skills appropriate to teaching in secondary schools. Graded S/U.



- EDUC 475. Contemporary Issues in Education 3 cr. (2+2P)  
Discussion of contemporary issues including: classroom management, motivation, conferences, professional organizations, professional ethics, community influences, cultural pluralism, reform movements, instructional influences, and educational technology. Requires field experience component in a school or community setting. Same as EDUC 575.
- EDUC 480. International Student Teaching Seminar 1 cr.  
Preparation for students planning to teach in an international setting. Prerequisite: Must be scheduled one semester before graduation.
- EDUC 481. Elementary Student Teaching Seminar 3 cr.  
Discussion of elementary school issues related to student teaching. Taken concurrently with EDUC 470. Graded S/U.
- EDUC 482. Middle and High School Student Teaching Seminar 3 cr.  
Discussion of secondary school issues related to student teaching. Taken concurrently with EDUC 471. Graded S/U.
- EDUC 483. Second Language Acquisition 3 cr.  
Exploring affective, cultural, linguistic, cognitive factors that influence the second-language-acquisition process with application to classroom practice. Same as EDUC 583.
- EDUC 487. Methods of TESOL 3 cr.  
Effective second language teaching approaches that provide for interactive learning situations, meaningful input language models, varied language use materials, adaptive teacher response strategies, and assessments of student processing needs.
- EDUC 489. Topics 1-3 cr.  
Offered under various subtitles which indicate the subject matter to be covered. A maximum of 3 credits in any one semester and a grand total of 3 credits.
- EDUC 495. Directed Study Courses in Education 1-3 cr.  
Each course shall be identified by a qualifying subtitle. Maximum of 3 credits in any one semester and a grand total of 6 credits.

### ELT- ELECTRONICS TECHNOLOGY

- ELT 105. Basic Electricity and Electronics 3 cr. (2+2P)  
Fundamentals of electricity and electronics, basic circuit devices, meters, transistors, integrated circuits and other solid state devices, computers, fiber optics, and industrial application topics. Minimum math proficiency of CCDM 103 or CCDM 104 required or math placement into CCDM 114 or higher. Restricted to: Community Colleges only. Crosslisted with: AERT 111
- ELT 110. Electronics I 4 cr. (2+4P)  
Fundamentals of electronics including: components, schematics, Ohm's law, Thevenin's and Norton's theorems, and series/parallel circuits incorporating passive, active and magnetic elements. Introduction to AC circuits. Pre/Corequisite(s): ELT 120 or Math 120 or higher. Restricted to: Community Colleges only. Crosslisted with: AERT 123
- ELT 120. Mathematics for Electronics 4 cr.  
Includes fundamental mathematics, algebra, sine, cosine, and other elementary functions as they specifically apply to the operation, manipulation, and evaluation of direct current (DC) and alternating current (AC) circuits. Minimum math proficiency of CCDM 114 required or math placement into MATH 120 or higher. Restricted to: Community Colleges only. Crosslisted with: AERT 124
- ELT 135. Electronics II 4 cr. (3+3P)  
Analysis of AC circuits, filters, and resonance. Introduction to solid state fundamentals including diodes and rectifier circuits, voltage regulators, various transistors and transistor characteristics, amplification and amplifiers, photoelectric effects, gates and timing circuits. Prerequisite: ELT 110 and ELT 120.
- ELT 155. Electronics CAD and PCB Design 3 cr. (2+2P)  
Introduction to and the use of commercially available CAD software covering schematic representation of electronic components and circuits. Printed circuit board layout techniques including proper schematic capture, netlist generation, design rule checking and manual routing covered.
- ELT 160. Digital Electronics I 4 cr. (3+3P)  
Number systems, codes, Boolean algebra, logic gates, Karnaugh maps, combination circuits, flip-flops, and digital troubleshooting techniques. Prerequisite: ELT 110 or consent of instructor.
- ELT 175. Soldering Practices 3 cr. (2+2P)  
Methods and techniques of hand soldering in the production of high quality and reliable soldering connections. Restricted to: Community Colleges only.
- ELT 201. Television Theory 3 cr. (2+3P)  
Origin and development of color television, video-audio characteristics, digital television, VITS and VIRS channels, broadcast antennas, and transmission lines.

- ELT 205. Semiconductor Devices 4 cr. (3+3P)  
Analysis and trouble shooting of linear electronic circuits including amplifiers, op-amps, power supplies, and oscillators. Prerequisite(s): ELT 110 & ELT 135 or Consent of instructor. Restricted to: Community Colleges only.
- ELT 210. Electronics Laboratory III 2 cr. (4P)  
Circuit breadboard, circuit parameter measurements; emphasis on troubleshooting, fault analysis.
- ELT 215. Microprocessor Applications I 4 cr. (3+2P)  
Fundamentals of microprocessor architecture and assembly language with an emphasis on hardware interfacing applications. Corequisite: ELT 235.
- ELT 220. Electronic Communication Systems 4 cr. (3+2P)  
Principles and applications of circuits and devices used in the transmission, reception, and processing of RF, microwave, digital and telecommunications systems. Prerequisite: consent of instructor. Corequisite: ELT 205.
- ELT 221. Cooperative Experience I 1-6 cr.  
Supervised cooperative work program. Student is employed in an approved occupation and supervised and rated by the employer and instructor. Student will meet in a weekly class. Graded S/U. Prerequisite: consent of instructor.
- ELT 222. Cooperative Experience II 1-6 cr.  
Continuation of ELT 221. Maximum of 6 credits. Graded S/U. Prerequisite: consent of instructor.
- ELT 225. Computer Applications for Technicians 3 cr. (2+2P)  
An overview of computer hardware, software applications, operating systems, high level programming languages and networking systems.
- ELT 230. Microprocessor Applications II 4 cr. (3+2P)  
Advanced microprocessor interfacing techniques. Topics in A/D and D/A conversion, I/O port address decoding, direct memory accessing, and peripheral device interfacing applications. Prerequisite: ELT 215.
- ELT 235. Digital Electronics II 3 cr. (2+3P)  
Sequential logic circuits, latches, counters, shift-registers, fault analysis and troubleshooting of digital IC s, multiplexers, timers, encoders/decoders, arithmetic circuits, pulse shaping, and memory devices. Prerequisite: ELT 160.
- ELT 240. Introduction to Photonics 4 cr. (3+2P)  
Nature of light, light emitters, lasers, detectors, fiber optics communications systems, and other applications of light to electronics. Prerequisite: ELT 135 or consent of instructor.
- ELT 250. Electronics Systems Analysis 2 cr. (1+3P)  
Capstone course emphasizing a systems approach to troubleshooting and maintaining complex electronics systems. Includes program review in preparation for technician certification. Prerequisite: consent of instructor.
- ELT 255. Special Problems in Electronics 1-6 cr.  
Individual studies in areas directly related to electronics. Prerequisites: ELT 110 and consent of instructor. May be repeated for a maximum of 6 credits.
- ELT 260. Instrumentation Control and Signal Conditioning 4 cr. (3+2P)  
Introduction to sensors and transducers, signal conditioning and transmission for measuring and process control systems. Includes AD, DA converter, small servos and actuators. Prerequisite:ELT 205.
- ELT 265. Special Topics 1-6 cr.  
Topic to be announced in the Schedule of Classes.
- ELT 270. Biomedical Equipment Instrumentation 4 cr. (3+2P)  
Principles and applications of electronic circuits and devices used in biomedical equipment. Skills taught to include evaluating, troubleshooting and repairing various types of medical equipment. Prerequisites: ELT 205 and ELT 260, or consent of instructor.
- ELT 295. Professional Development/Leadership 1 cr.  
As members and/or officers of student professional organizations, electronics technology students gain experience in leadership, team building, and community services. May be repeated for a maximum of 6 credit. Restricted to ELT and ET E majors.

### EMD- EDUCATIONAL MANAGEMENT AND DEVELOPMENT

- EMD 101. Freshman Orientation 1 cr.  
Introduction to the university and to the College of Education. Discussion of and planning for individualized education program and field experience. Graded S/U.
- EMD 250. Introduction to Education 2 cr.  
An overview of the American education system with emphasis on organization, governance, law, demographics, and professional practice.
- EMD 315. Multicultural Leadership 3 cr.  
Leadership addressing culture, race, ethnicity, gender and lifestyle.



- EMD 350V. Introduction to Educational Leadership in a Global Society 3 cr.  
Multinational educational systems covered through knowledge of the U.S. system of education promoting critical leadership roles every citizen plays in the success of educational systems.
- EMD 398. Special Topics in Education 1-3 cr.  
Special topics course in education for undergraduate students. Course will be identified by a subtitle. May be repeated for a maximum of 12 credits.
- EMD 411. Foundation for School Library Specialists 3 cr.  
Elements of librarianship. Introduction to the history, purpose, and role of the school library. Overview of current issues and legislation affecting school libraries. Same as EMD 511.
- EMD 412. Administration of the School Library 3 cr.  
Principles and practices related to the function, structure, and management of school libraries. Same as EMD 512.
- EMD 413. Curriculum Role of the School Library Specialist 3 cr.  
Introduction to the integration of curriculum in school library programs. Current trends in collaborative planning and teaching between the school librarians and teachers. Taught with EMD 513.
- EMD 414. Collection Management and Development in School Libraries 3 cr.  
Principles of identifying, selecting, acquiring, managing, and evaluating information for school libraries. Same as EMD 514.
- ENGL- ENGLISH**  
**Credit for ENGL 111G is a prerequisite for every English course numbered 200 or above.**
- ENGL 111G. Rhetoric and Composition 4 cr.  
Skills and methods used in writing university-level essays. Prerequisite(s): ACT standard score in English of 16 or higher or a Compass score 76 or higher; for those scoring 13-15 in English on the ACT or 35-75 on the Compass, successful completion of a developmental writing course; for those scoring 12 or below on the ACT standard score in English or 34 or below on the Compass, successful completion of two developmental writing courses.
- ENGL 111GH. Rhetoric and Composition Honors 4 cr.  
Individualized assignments and independent study. Prerequisite: ACT standard English score of 25 or higher and departmental approval. Satisfies 4 credits of General Education English Composition requirement.
- ENGL 112. Rhetoric and Composition II 2 cr.  
A continuation of English 111G for those desiring more work in composition. Weekly themes based on outside reading. Prerequisite: successful completion of ENGL 111G or the equivalent.
- ENGL 115G. Perspectives on Literature 3 cr.  
Examines literature by writers from culturally diverse backgrounds and from different cultural and historical contexts. Explores various strategies of critical reading.
- ENGL 116G. Perspectives on Film 3 cr. (3+3P)  
Explores narrative and documentary film and examines significant developments in the history of cinema. Criticism of film as an art form, technical enterprise, business venture, and cultural phenomenon.
- ENGL 175. Media Culture: History of Film and Media 3 cr.  
Explores the history of cinema from the earliest 19th century developments to the present digital video revolution offering a broader base of understanding of the tools and methodologies used in the craft.
- ENGL 200. Independent Study 1-3 cr.  
Individual work in literature; open to freshmen excused from freshman composition and others. Prerequisite: consent of instructor. Repeatable for unlimited credit under different subtitles.
- ENGL 203G. Business and Professional Communication 3 cr.  
Effective writing for courses and careers in business, law, government, and other professions. Strategies for researching and writing correspondence and reports, with an emphasis on understanding and responding to a variety of communication tasks with a strong purpose, clear organization, and vigorous professional style.
- ENGL 211G. Writing in the Humanities and Social Sciences 3 cr.  
Theory and practice in interpreting texts from various disciplines in the humanities and social sciences. Strategies for researching, evaluating, constructing, and writing researched arguments. Course subtitled in the Schedule of Classes.
- ENGL 218G. Technical and Scientific Communication 3 cr.  
Effective writing for courses and careers in sciences, engineering, and agriculture. Strategies for understanding and presenting technical information for various purposes to various audiences.
- ENGL 220G. Introduction to Creative Writing 3 cr.  
Examines classic and contemporary literature in three genres. Various forms, terminologies, methods and technical aspects of each genre, and the art and processes of creative writing.
- ENGL 232. Script Development and Storyboarding 3 cr.  
Examines effective writing principles for creating storyboards that communicate the overall picture of a project, timing, scene complexity, emotion and resource requirements. Crosslisted with: CMI 232.
- ENGL 235. Narrative: Principles of Story Across the Media 3 cr.  
Examines the various strategies of written and visual storytelling, narrative structure and its principal components (plot, theme, character, imagery, symbolism, point of view) with an attempt to connect them to elements of contemporary forms of media expression, including screenwriting, playwriting, writing for documentaries and animation, etc. Crosslisted with: CMI 235
- ENGL 240. Introduction to Literature 3 cr.  
Intended primarily for non-English majors, course will introduce poetry, fiction, and drama from a variety of periods. There will be some introduction of critical terminology and some attention to writing about literary works of art.
- ENGL 243. The Bible as Literature 3 cr.  
Develops informed readings of Hebrew and Christian scriptures. Emphasizes understanding Biblical literary forms, techniques, themes; historical, cultural contexts for interpretation; authorship, composition, audience for individual books; development of Biblical canon.
- ENGL 244G. Literature and Culture 3 cr.  
Intensive reading of and discussion and writing about selected masterpieces of world literature. Emphasizes cultural and historical contexts of readings to help students appreciate literary traditions. Core texts include works by Homer, Dante, and Shakespeare, a classic novel, an important non-Western work, and modern literature.
- ENGL 251. Survey of American Literature I 3 cr.  
From the colonial period to the transcendentalists.
- ENGL 252. Survey of American Literature II 3 cr.  
From Whitman to the present.
- ENGL 261. Masterpieces of Western European Literature, Beginnings to the Renaissance 3 cr.  
Great Western European literature from its beginning in the epic and other oral forms to some of the major Renaissance works that form the foundations of much of our modern literary culture.
- ENGL 262. Masterpieces of Western European Literature, Post-Renaissance to Modern Times 3 cr.  
Modern Western European literary classics, from the seventeenth through the twentieth centuries, with attention to the rise of the novel and other modern forms.
- ENGL 263. History of Argument 3 cr.  
Investigates the major figures and movements in rhetoric from the classical period to modern rhetorical theory, examining relations between rhetorical teaching and practice, culture, epistemology, and ideology. Main campus only.
- ENGL 271. Survey of English Literature I 3 cr.  
From Beowulf through the eighteenth century.
- ENGL 272. Survey of English Literature II 3 cr.  
From the pre-Romantics to the present.
- ENGL 299. Special Topics 1-3 cr.  
Emphasis on a literary and/or writing subject chosen for the semester. Repeatable for a unlimited credit under different subtitles.
- ENGL 301. Theory and Criticism: Rhetoric and Culture 3 cr.  
Introduction to rhetorical criticism with an emphasis on understanding the theoretical and cultural underpinnings for the rhetorical analyses of texts.
- ENGL 302. Theory and Criticism: Literature and Culture 3 cr.  
Introduction to literary criticism, from its classical beginnings through contemporary critical approaches.
- ENGL 303. Theory and Criticism: Film, Media and Culture 3 cr.  
Surveys classical and contemporary film theory. Explores the relationship of theory to textual analysis and filmmaking practices. Includes auteurism semiotics, psychoanalysis, and other theories, as well as theories of other media.
- ENGL 304. Creative Writing: Prose 3 cr.  
Imaginative writing, chiefly prose narrative. Repeatable for a maximum of 9 credits.

- ENGL 305. Creative Writing: Reading Series 1 cr.  
A one credit class based on the English Department's literary reading series. The class meets online and at the literary readings.
- ENGL 306. Creative Writing: Poetry 3 cr.  
Introduction to the writing of poetry. Repeatable for a total of 9 credits.
- ENGL 307. Creative Writing: Creative Nonfiction 3 cr.  
Introduction to creative nonfiction. Skills emphasized will include the personal voice, powers of observation and reflection, advocacy, argument, and a creative, powerful use of language. Repeatable for a maximum of 9 credits.
- ENGL 308. Creative Writing: Playwriting 3 cr.  
Technique of one-act playwriting, and analysis of dramatic structure. Crosslisted with: THTR 308
- ENGL 309. Screenwriting I 3 cr.  
Writing intensive. Students learn the craft of screenwriting, honing skills in writing dialogue and visual narrative, crafting dynamic characters and dramatic action. Original student scripts will be performed and discussed in class. Consent of instructor required. Prerequisite(s): ENGL 235 or CMI 235. Crosslisted with: CMI 309 and THTR 306
- ENGL 310. Critical Writing 3 cr.  
A course in critical reading, writing, and research designed to prepare English majors for upper-division courses.
- ENGL 311G. Advanced Composition 3 cr.  
Writing of nonfiction prose. Reviews principles of expository and descriptive writing. Emphasizes the argument/persuasion essay with detailed discussion of semantic and rhetorical techniques. Prerequisite: junior or senior standing, or consent of instructor.
- ENGL 315. Writing for the Web 3 cr.  
Introduction to writing for the World Wide Web through practical application and analysis on both theory and research. Allows hands-on learning in a computer classroom.
- ENGL 318G. Advanced Technical and Professional Communication 3 cr.  
Theory and practice of writing in technical and professional fields, individualized to each student's field. Emphasizes efficient writing processes and effective written products. Prerequisite: junior or above standing, or consent of instructor.
- ENGL 319. Introduction to Scientific Research and Writing 3 cr.  
Introduces students to research methods and writing in the sciences. Course offered as part of the federally-funded Ronald E. McNair Post Baccalaureate program. Prerequisite: McNair Scholar. Main campus only.
- ENGL 321V. Modern European Drama 3 cr.  
Masterworks of European drama from the late 18th century to present. Crosslisted with: THTR 321V
- ENGL 323. American Drama 3 cr.  
Masterworks of American drama by noted American playwrights. Crosslisted with: THTR 323
- ENGL 325V. Contemporary International Literature 3 cr.  
Introduction to contemporary literature through intensive study of works from a range of cultures around the world.
- ENGL 326. Cultural Identity and Representation Across the Media 3 cr.  
Considers complex relationships between representation and culture including how images and language shape racial, ethnic, gender, sexual, and class identities. Examines theories from several disciplines. Includes lecture, discussion and production exercises.
- ENGL 327V. Shakespeare around the Globe 3 cr.  
Introduction to multicultural issues in Shakespeare's plays and to adaptations of Shakespeare's plays in other cultures.
- ENGL 328V. Literature of Science Fiction and Fantasy 3 cr.  
Survey and critical examination of the development of science fiction and fantasy as literature genres through selected authors and texts.
- ENGL 329. Studies in Drama 3 cr.  
Emphasis on a group of related works of European or American drama; topics will vary. Crosslisted with: THTR 329 and CMI 329
- ENGL 330. Studies in Poetry 3 cr.  
Emphasis on a related group of poems or on the work of one or more poets; topics will vary.
- ENGL 335V. Studies in the Novel 3 cr.  
Intensive reading of, discussion of, and writing about selected major novels from around the world. Emphasizes the history of the novel and its role in culture.
- ENGL 336. Studies in Film 3 cr. (3+3P)  
Explores the conventions of cinematic representation; the strategies involved in writing about and reading film; and/or the adaptation of literary texts to film. Repeatable under different subtitles.
- ENGL 339V. Chicano Literature 3 cr.  
Introduction to Chicano novels, short stories and selected creative nonfiction.
- ENGL 340. Studies in American Literatures 3 cr.  
Emphasis on a distinctive body of literature representative of a particular group such as Black literature, Native American literature, European immigrant literature, Jewish literature, Chicano literature.
- ENGL 341V. American Indian Literature 3 cr.  
Forms and themes of Native American oral literary traditions; Native American writing in English, especially novels, short fiction, and poetry.
- ENGL 342. Studies in British Literature 3 cr.  
Selected topics in British literature including groups of writers, genre, or a theme.
- ENGL 349. The Short Story 3 cr.  
Development of the short story as a distinct form. Readings and critical analysis of representative nineteenth and twentieth century pieces.
- ENGL 354. Form and Technique in Fiction 3 cr.  
Literature course designed for fiction writers, especially those English majors in the Creative Writing emphasis. The course combines the study of published fiction with the study of craft. Some of the assignments will require the student to write original fiction based on exercises provided by the instructor. Repeatable for up to 9 credits.
- ENGL 356. Form and Technique in Poetry 3 cr.  
Literature course designed for poets, especially those English majors in the Creative Writing emphasis. The course combines the study of published poetry with the study of craft. Some of the assignments will require the student to write original poems based on exercises provided by the instructor. Repeatable for up to 9 credits.
- ENGL 358. Form and Technique in Playwriting 3 cr.  
Literature course designed for playwrights, especially those English majors in the Creative Writing emphasis. The course combines the study of published plays and performances with the study of craft. Some of the assignments will require the student to write original plays based on exercises provided by the instructor. Repeatable up to 9 credits.
- ENGL 363. Literature for Children and Young Adults 3 cr.  
A comparative, historical survey of literature for young (K to 12th grade) readers. Emphasis on critical evaluation. Prerequisite: junior or above standing.
- ENGL 380V. Women Writers 3 cr.  
Introduction to multicultural women's traditions through intensive study of works by women writers. Crosslisted with: W S 380V.
- ENGL 390V. The Arthurian Tradition 3 cr.  
Introduction to Arthurian Legends and literature. Intensive study of works by the originators of the tradition as well as nineteenth and twentieth century re-tellings. Multidisciplinary approach to literary analysis including perspectives from history, psychology, cultural, and gender studies.
- ENGL 392V. Mythology 3 cr.  
Greek and Roman mythology and its impact on European and English literature. Readings in myths, classical plays, and other literature with mythological interest, including nonclassical myths.
- ENGL 394V. Southwestern Literature 3 cr.  
Introduction to multicultural literature of the Southwest: oral folk literature, literary fiction (classic and contemporary), nonfiction and poetry.
- ENGL 399. Special Topics 3 cr.  
Emphasis on a theme, genre, figure, or technique chosen for study during the semester. Repeatable under different subtitles.
- ENGL 400. Independent Study: Upper Division 1-3 cr.  
For students with demonstrated aptitude for independent work. Approval of instructor required before registration. Repeatable under different subtitles.
- ENGL 405. Chaucer 3 cr.  
Principal works, with emphasis on *The Canterbury Tales*.
- ENGL 406. Early Modern Poetry and Prose 3 cr.  
Survey of the major authors, genres, and themes of non-dramatic English Literature from 1500 to 1700. Emphasis on how writers of the period invented new literary forms and adapted existing ones to convey their experience of a changing world.
- ENGL 407. Milton 3 cr.  
Studies in Milton's works.

- ENGL 408. Shakespeare I 3 cr.  
Principal plays of Shakespeare's first two periods. Crosslisted with: THTR 408.
- ENGL 409. Shakespeare II 3 cr.  
Principal plays of Shakespeare's last two periods. Crosslisted with: THTR 409.
- ENGL 411. Advanced Scientific Research and Writing 3 cr.  
Introduces students to advanced study in research methods and writing in the sciences. Course offered as part of the federally-funded Ronald E. McNair Post Baccalaureate program. Prerequisite: Students must be a McNair Scholar.
- ENGL 412. Writing in the Workplace 3 cr.  
Study of workplace writing practices, including a focus on research-based, theoretical, and pedagogical approaches to professional communication.
- ENGL 413. Advanced Creative Writing: Prose Workshop 3 cr.  
Imaginative writing, chiefly the narrative. Repeatable for a total of 12 credits. Prerequisite(s): ENGL 304 or consent of instructor.
- ENGL 414. Advanced Creative Writing: Poetry Workshop 3 cr.  
For advanced writers of poetry. Repeatable for a total of 12 credits. Prerequisite(s): ENGL 306 or consent of instructor.
- ENGL 415. Advanced Creative Writing: playwriting Workshop 3 cr.  
Technique of full-length playwriting, and analysis of dramatic structure. Consent of instructor required. Prerequisite(s): ENGL 308. Crosslisted with: THTR 309 and CMI 309
- ENGL 416. Approaches to Literature 3 cr.  
Understanding, appreciation, techniques of instruction in the high school. Prerequisite: at least 6 credits in upper-division English courses.
- ENGL 417. Advanced Study in Critical Theory 3 cr.  
Advanced study of one or more major trends in theoretical inquiry within English studies. Some prior study of theory, such as English 301-303, strongly recommended. Repeatable under different subtitles.
- ENGL 418. History of Rhetoric 3 cr.  
Investigation of crucial writings that have shaped Western attitudes towards and practice of rhetoric. Will examine key concepts from the Greeks through the Enlightenment, especially as they have influenced contemporary rhetorical theory.
- ENGL 419. Modern Rhetorical Theory 3 cr.  
Major figures in rhetorical theory, with particular emphasis on developments in rhetorical theory in the twentieth century.
- ENGL 421. Advanced Study in a Literary Period or Movement 3 cr.  
Close study of a historical or theoretical topic in a particular literary period or movement. Repeatable under different subtitles.
- ENGL 422. Advanced Study in a Literary Form or Genre 3 cr.  
Close study of a topic in a particular literary form or genre. May be repeated under different subtitles.
- ENGL 423. Advanced Study in a Major Author 3 cr.  
Close study of selected works by a major author. May be repeated under different subtitles.
- ENGL 424. Advanced Study in a Major Text 3 cr.  
Close study of a major text. Course subtitled in the Schedule of Classes. Repeatable under different subtitles.
- ENGL 425. Advanced Study in Comparative Literature 3 cr.  
Close study of a selection of non-English literary works read in translation. English-language works from a similar literary period or genre may also be read. Repeatable under different subtitles.
- ENGL 426. Special Topics in Critical Theory 3 cr.  
Study of a specific historical or theoretical topic, trend, or movement in Critical Theory. Repeatable under different subtitles.
- ENGL 427. Advanced Study in Film and Digital Media 3 cr.  
Offers close study of a form or genre, a major figure or style, an historical period or movement, or a major theme or text. Topics vary from semester to semester. Repeatable under different subtitles.
- ENGL 428. Drama from the Renaissance to the Restoration 3 cr.  
Survey of the major authors, genres, and themes of sixteenth- and seventeenth-century drama in England, with particular emphasis on Renaissance revenge tragedy, marriage comedy, and city comedy, and on Restoration comedy of manners.
- ENGL 429. British Romanticism 3 cr.  
Intensive study of major writers and critical topics from the Romantic period. Repeatable under different subtitles.
- ENGL 430. Online Publishing 3 cr.  
This three-credit course provides a theoretical background for online publishing and design as well as hands on experience publishing an online arts magazine.
- ENGL 431. Technical Editing 3 cr.  
Uses workshops, readings, hands-on projects, and discussion to improve skills in gathering, writing, designing, and editing technical information. For students interested in technical communication as well as students interested in developing strengths in communicating in scientific and technical fields.
- ENGL 432. Gothic Literature 3 cr.  
Intensive study of gothic literature in particular historical, aesthetic, cultural, or intellectual contexts, such as American Gothic, Female Gothic, Dark Romanticism, or Vampire Literature. Repeatable under different subtitles.
- ENGL 433. Victorian Literature 3 cr.  
Intensive study of major writers and critical topics from the Victorian period. Repeatable under different subtitles.
- ENGL 437. Advanced Study in Film and Digital Media Theory and Criticism 3 cr.  
Course offers reading, research, and discussion of advanced problems in theory and criticism of film and digital media. Topics will vary from semester to semester. May be repeated under different subtitles.
- ENGL 438. Literature of the American Renaissance 3 cr.  
Intensive study of topics critical to the development of nineteenth century American literature before and during the Civil War, and the work of authors such as Emerson, Thoreau, Poe, Hawthorne, Melville, Whitman and Dickinson. Repeatable once under a different subtitle.
- ENGL 439. American Realism and Naturalism 3 cr.  
Key works of literary realism and naturalism, Civil War to World War One. Course readings vary, but will normally include works of Henry James, Edith Wharton, Willa Cather, Theodore Dreiser, as well as others. Repeatable once under a different subtitle.
- ENGL 440. Harlem Renaissance and Modernism 3 cr.  
Reading and study of key works of the flowering of African American literature known as the Harlem Renaissance of the 1920s and 1930s. Consideration of the literary context of the Harlem Renaissance, which includes both African American and non-African American writers of the early modern and modern periods.
- ENGL 441. Modern and Contemporary American Fiction 3 cr.  
Studies the development of American fiction from World War I to the present. Repeatable once under a different subtitle.
- ENGL 442. Modern and Contemporary American Poetry 3 cr.  
Studies the development of American poetry from World War I to the present. Repeatable once under a different subtitle.
- ENGL 444. Modern British Fiction 3 cr.  
Study of the fiction produced in the British Isles in the 20th and 21st centuries. Repeatable once under a different subtitle.
- ENGL 445. Postmodern Fiction 3 cr.  
Study of the various forms of formally innovative experimental fiction produced since 1945, with a focus on the relationship between literary history and its sociohistorical contexts. Some texts will be read in translation. Repeatable once under a different subtitle.
- ENGL 447. Rhetorical Invention 3 cr.  
Various theories and means of invention, including practical applications for the writer.
- ENGL 448. Advanced Study in Empirical Research 3 cr.  
Introduction to empirical research methods in composition, professional communication, and rhetoric.
- ENGL 449. Advanced Study in Writing 3 cr.  
Close study of a topic in composition, rhetoric and/or technical and professional communication. Repeatable for a maximum of 6 credits with permission of department.
- ENGL 451. Practicum in the Grammar of American English 3 cr.  
Studies of formal grammar of the English language in preparation for the teaching of the English language and/or advanced linguistic analysis.
- ENGL 452. History of the English Language 3 cr.  
This course examines the history of the English language from its Indo-European origins through its development into an international language. The aim is to describe the English language formally and to trace linguistic change over time. Samples of written English will illustrate various stages in the development of English. Also considered are contemporary social and political issues related to language, including the problem of 'standard English' and the uses of language in advertising, the media, and politics.



- ENGL 453. World Literatures 3 cr.  
Study of one or more literary traditions exclusive of those originating in Europe and the United States. Readings will include texts in translation. Repeatable once under a different subtitle.
- ENGL 454. Postcolonial Literature 3 cr.  
Study of the transformations of literature and theory produced in the context of decolonization and its aftermath, from the twentieth century to the present. Some texts will be read in translation. Repeatable once under a different subtitle.
- ENGL 456. Ethnic Studies in US Literature and Culture 3 cr.  
Concentrates on comparative study of literary and cultural production by two or more U.S. ethnic populations. Incorporates both literary and socio-cultural readings of texts. Repeatable under different subtitles.
- ENGL 457. American Indian Literatures 3 cr.  
Intensive study of selected topics and genres from American Indian Literatures, such as American Indian oral tradition, the Native American Trickster figure, the development of American Indian fiction, and contemporary American Indian literature. Repeatable once under a different subtitle.
- ENGL 458. Latino/a Literature and Culture 3 cr.  
Focuses on established and emergent Latino/a literary and cultural production. Incorporates both literary and sociocultural readings of texts. Repeatable once under a different subtitle.
- ENGL 459. Black Literature and Culture in the United States 3 cr.  
Focuses on established and emergent Black U.S. literary and cultural production. Incorporates both literary and sociocultural readings of texts. Repeatable once under a different subtitle.
- ENGL 460. Proposal Writing 3 cr.  
Developing proposals and grants in a workshop setting.
- ENGL 462. Interdisciplinary, Client-Based Project Practicum 3 cr.  
Hands-on experience in designing projects within interdisciplinary teams for organizational clients. Taught with ENGL 562.
- ENGL 463. Advanced Study in English Literature 3 cr.  
Covers selected works for a particular period of English literary history. Repeatable under different subtitles.
- ENGL 465. Intercultural Professional Communication 3 cr.  
Examines rhetorical traditions in intercultural profession, technical, academic, and government contexts.
- ENGL 469. Advanced Study in American Literature 3 cr.  
Covers selected works for a particular period of American literary history. Repeatable under different subtitles.
- ENGL 470. Approaches to Composition 3 cr.  
Theory and practice of teaching writing. Discussion and application of classroom practices, definition of standards, and evaluation of student writing.
- ENGL 478. Document Design 3 cr.  
Advanced study in writing, with an emphasis on the computer as a tool for designing visually informative text. Includes theory and research in document design and the use of page composition and graphics software.
- ENGL 479. Computers and Writing 3 cr.  
Examines how computers change the nature of writing and the teaching of writing.
- ENGL 480. Screenwriting II 3 cr.  
Students will write two short scripts, 10-15 pages each. Focus will be on learning how to take notes and rewrite. Script analysis will be in a workshop format. Scripts will be read and discussed, scenes performed and reactions analyzed to consider effect of dialog, character development, etc. Prerequisite(s): ENGL 309 or CMI 309 or THTR 306 or consent of instructor. Crosslisted with: CMI 480
- ENGL 481. Women's Literature 3 cr.  
Intensive study of literature by women, in particular historical, aesthetic, cultural, or intellectual contexts. Repeatable under different subtitles. Crosslisted with: W S 484
- ENGL 482. Gender and Popular Culture 3 cr.  
Intensive study of the representations of gender in popular culture. Examines the historical, aesthetic, and cultural contexts of these representation and the various critical and theoretical lenses we use to understand them. Repeatable under different subtitles. Crosslisted with: W S 482
- ENGL 483. Gender and Language 3 cr.  
Overview of current and historical approaches to the critical study of gender and language: how gender theoretically manifests in linguistic, social, cultural, academic, and professional texts and contexts.
- ENGL 484. Gender and Literature 3 cr.  
Intensive study, critical and theoretical, of intersections between literature and gender. Examines representations or constructions of gender in literary discourse, as well as the gendering of literary activity in different cultural contexts. Repeatable under different subtitles.
- ENGL 486. Hollywood Film 3 cr. (3+3P)  
Intensive study of Hollywood film in its artistic, cultural, or historical contexts. Repeatable under different subtitles.
- ENGL 487. Modernist and Experimental Film 3 cr.  
Explores the variety of film aesthetics that depart to some degree from the conventions of classical cinema. Focuses on how film form relates to modernist, postmodernist, experimental, and avant-garde tendencies in the arts. Special attention will be paid to the implications of radical formal experimentation for cultural politics, in particular in the context of modern and contemporary history. Repeatable once under a different subtitle.
- ENGL 488. Film and Literature 3 cr.  
Intensive study of literary and film texts in particular historical, generic, or cultural contexts, such as Film Adaptation, Religion in Literature and Film, or The American West in Fiction and Film. Repeatable under different subtitles.
- ENGL 489. Cultural Studies: Literature and Theory 3 cr.  
Examines the theory and practice of cultural studies in relation to the variety of discourse describable as literary, including autobiography, avant-garde writing, nonfiction prose, the essay, online writing, folklore, and popular genre fiction (such as mystery, romance, thriller, or horror). Repeatable once under a different subtitle.
- ENGL 491. Advanced Screenwriting 3 cr.  
Students will prepare a feature-length screenplay. Script analysis will be in an advanced workshop format. Scripts will be read and discussed, scenes performed and reactions analyzed to consider effect of dialogue, character development, etc. Aimed at preparing writers for the professional market. Consent of instructor required. Crosslisted with: CMI 490
- ENGL 492. Old English 3 cr.  
An introduction to the language, literature, and culture of Anglo-Saxon England, including Beowulf.
- ENGL 493. Middle English Textual Cultures 3 cr.  
Intensive study of cultures of reading, writing, and literary production in late-medieval England, situating Middle English literature in its manuscript contexts. No prior experience with Middle English required.
- ENGL 494. Shakespeare for Educators 3 cr.  
In-depth study of selected plays by Shakespeare designed for present and future teachers of literature. Dual emphases on increasing knowledge of Shakespeare's plays in context and on developing effective strategies for teaching them.
- ENGL 497. Internship 3-6 cr.  
Supervised technical and professional communication internship in business, industry, government, or the university. Repeatable for a total of 6 credits. Consent of instructor required.
- ENGR- ENGINEERING**
- ENGR 100. Introduction to Engineering 3 cr. (2+3P)  
An introduction to the various engineering disciplines, the engineering approach to problem solving, and the design process. Projects emphasize the importance of teamwork, written & oral communication skills, as well as ethical responsibilities.
- ENGR 111. Matlab Programming 3 cr.  
An introduction to the MATLAB computing environment. Emphasis on basic input/output and the programming skills needed to perform elementary data manipulation and analysis. Prerequisite(s): C S 110.
- ENGR 198. Special Topics in Engineering 1-3 cr.  
Directed individual study of topics in engineering. Written reports covering work required. Prerequisite: consent of academic dean. May be repeated for a maximum of 6 credits. Restricted to engineering majors. Graded S/U.
- ENVE- ENVIRONMENTAL ENGINEERING**
- ENVE 455. Solid and Hazardous Waste Systems Design 3 cr.  
Design of processes and facilities used in the transport, storage, treatment, and disposal of solid and hazardous wastes. Prerequisite: C E 356 or consent of instructor.
- ENVE 456. Environmental Engineering Design 3 cr. (2+3P)  
Design of chemical, physical and biological operations and processes involved in water and wastewater treatment. Prerequisite: C E 356.



ENVE 462. Sampling and Analysis of Environmental Contaminants 3 cr. (1+6P)  
Theory, application, methodology, and instrumentation used in the sampling and analysis of environmental contaminants. Prerequisites: C E 256 and E S 256. Same as E S 462.

ENVE 487. Air Pollution Control Systems Design 3 cr.  
An introduction to sources and nature of air pollution, regulations, and risk analysis. Detailed study of air pollution control technologies and design of air pollution control equipment. Prerequisite: senior or graduate standing. Restricted to C E, CH E, or M E majors. Main campus only.

#### EPWS- ENTOMOLOGY, PLANT PATHOLOGY AND WEED SCIENCE

EPWS 100. Introduction to Pest Management 3 cr.  
Introduction to applied biology including recognition and control of major pest problems of crops, livestock, native vegetation, and homes. One-hour lab is optional.

EPWS 100 L. Pest Management Lab 1 cr.  
Laboratory to study and observe insect, disease, and weed problems in various agricultural and horticultural environments. Corequisite: EPWS 100.

EPWS 111. Freshmen Orientation 1 cr.  
Orientation to university life, including available resources and methods to promote success at NMSU. General exposure to fields in agriculture and home economics. Open to all freshmen and transfer students. Graded S/U.

EPWS 200. Special Topics 1-4 cr.  
Specific subjects and credits to be announced in the Schedule of Classes. Maximum of 4 credits per semester and a grand total of 9 credits.

EPWS 300. Special Topics 1-4 cr.  
Specific topics and credits to be announced in the Schedule of Classes. Maximum of 4 credits per semester and a grand total of 9 credits.

EPWS 301. Agricultural Biotechnology 3 cr. (2+2P)  
The principles of molecular biology will be introduced and used to explore the past, present, and future applications of biotechnology in agriculture. Specific topics include methodologies for making transgenic plants with increased pest resistance, the use of biotechnology in pest detection, and improving nutritional value. The laboratory will provide students with hands-on experience with equipment used for biotechnology research. Prerequisites: CHEM 112G, BIOL 111G, or BIOL 211G.

EPWS 303. Economic Entomology 4 cr. (3+2P)  
Identification and life cycles of insects of economic significance, their relationship to humans and agriculture including biological interactions and controls. Prerequisite(s): Either BIOL 111G or BIOL 211G.

EPWS 310. Plant Pathology 4 cr. (3+2P)  
Causes and methods of prevention and treatment of diseases in plants. Prerequisite(s): Either BIOL 111G or BIOL 211G.

EPWS 311. Introduction to Weed Science 4 cr. (3+2P)  
Principles of weed science, with emphasis on characteristics of invasive plants, methods of integrated weed management, and current issues impacting weed management. Identification of local weeds. Prerequisite(s): Junior standing or consent of instructor; and CHEM 111G, and BIOL 211G. Same as AGRO 311. Crosslisted with: AGRO 311

EPWS 314. Plant Physiology 3 cr.  
Overview of photosynthesis, respiration, water relations of plants, minerals and organic nutrition, growth and development. Prerequisites: BIOL 211G, CHEM 112G. Same as BIOL 314.

EPWS 314 L. Plant Physiology Lab 2 cr.  
Examination of and laboratory techniques for measurement of plant-water relations, solute transport, mineral nutrition, photosynthesis, enzyme activity, gene expression, nitrogen metabolism, hormone content and function, and growth/development. Prerequisite: BIOL/EPWS 314 or concurrent enrollment recommended. Same as BIOL 314L.

EPWS 325V. Insects, Humans, and the Environment 3 cr.  
Overview of the interactions of the world's largest group of organisms with humans. Emphasizing the role of insects in the development of human cultures, including health, food and fiber production, art, music, and environmental issues; with discussions of historic, present day, and future impacts in underdeveloped, developing, and developed civilizations.

EPWS 373. Fungal Biology 3 cr. (2+2P)  
Introduction to the taxonomy, morphology, physiology, and ecology of fungi. Prerequisites: EPWS 310 or BIOL 311, or consent of instructor. Same as BIOL 373.

EPWS 380V. Ecosystem Earth: The Impact of Human Activities 3 cr.  
Analysis and evaluation of how human activities affect the earth's environment or ecosystems. Several examples, from global issues to local issues in the tropics and temperate latitudes, will be studied in detail. World population, agricultural productivity, loss of biodiversity, deforestation, and future prospects for the environment.

EPWS 390. Internship 1-3 cr.  
Professional work experience under the joint supervision of the employer and a faculty member. A written report is required. Maximum of 3 credits. Prerequisite: consent of instructor. Graded S/U.

EPWS 435. Aquatic and Immature Insects 4 cr. (3+3P)  
Life histories, adaptations, ecology, and identification of immature insects, with emphasis on aquatics. Prerequisite: BIOL 433 or EPWS 303 or consent of instructor.

EPWS 447. Seminar 1 cr.  
Organization and techniques for the oral presentation of research information. Restricted to: Main campus only.

EPWS 449. Special Problems 1-3 cr.  
Individual investigation in specific areas of entomology, plant pathology or plant physiology. Maximum of 3 credits per semester and a grand total of 6 credits.

EPWS 451. Special Topics 1-4 cr.  
Specific subjects and credits to be announced in the Schedule of Classes. Maximum of 4 credits per semester and a grand total of 9 credits. Prerequisite: consent of instructor.

EPWS 452. Applied Pesticide Toxicology 3 cr.  
Classification, mode of action, and use of insecticides and related pesticides.

EPWS 455. Advanced Integrated Pest Management 3 cr.  
Examination of factors affecting the biology and ecology, population evaluations, and control of insect, disease, and weed pests with an emphasis on integrating management practices. Credit cannot be given for both EPWS 455 and EPWS 505. Prerequisite: either EPWS 303, EPWS 310, EPWS 311, or consent of instructor.

EPWS 456. Biological Control 3 cr.  
Principles of plant and animal suppression using living organisms. Interaction of biological control organisms with biotic and abiotic factors will be stressed. Credit cannot be given for both EPWS 456 and EPWS 506. Prerequisite: introductory course in entomology.

EPWS 462. Parasitology 3 cr.  
Introduction to classification, biology, ecology and management of the major parasites of human, domestic animals and wildlife.

EPWS 462 L. Parasitology Lab 1 cr.  
Methods of collecting and identifying the major parasites of humans, domestic animals and wildlife. Concurrent enrollment in EPWS 462 is desirable.

EPWS 471. Plant Mineral Nutrition 3 cr.  
Same as HORT 471 and AGRO 471.

EPWS 481. Plant Nematology 3 cr. (2+2P)  
Biology, ecology and basic identification of soil-inhabiting nematodes, with emphasis on host-parasite relationships and management principles for plant-parasitic genera.

EPWS 486. Plant Virology 3 cr.  
An overview of viral pathogens associated with infectious plant disease. Includes pathogens, replication, genetics, transmission, and movement of plant viruses.

EPWS 491. Insect Physiology 3 cr.  
Metabolism of carbohydrates, amino acids, lipids, and vitamins. Physiology of development, reproduction, pheromone and sensory reception. Prerequisites: EPWS 303 or BIOL 433, CHEM 211, or consent of instructor.

EPWS 492. Diagnosing Plant Disorders 3 cr. (2+3P)  
Systematic diagnosis of the physiological, pathological, and entomological causes of plant disorders. Prerequisites: EPWS 303, EPWS 310. Same as AGRO 492 and HORT 492.

#### FCS- FAMILY AND CHILD SCIENCE

FCS 121. Financial Fitness for College Students 1 cr.  
An introduction to personal financial practices in post high school and or college lives. Emphasis is placed on budgeting, savings, investment, college debt, student loans, credit cards, scams and consumer protection.

FCS 181. Interpersonal Skills in Intimate Relationships 3 cr.  
Developing social skills within friendships, dating relationships, marriage, parenting, and families.

- FCS 300. Special Topics 1-4 cr.  
Specific subjects and credits announced in the Schedule of Classes. Maximum of 4 credits per semester and a grand total of 9 credits.
- FCS 380. Family Dynamics 3 cr.  
The dynamics of family relationships and changes influencing contemporary families. Interaction between the family and other social systems will be examined. Open to nonmajors.
- FCS 381. Middle Childhood Development in the Family 3 cr.  
Research and theory relevant to the physical, mental, social, and emotional development of the child from age five to age twelve. Attitudes, knowledge, and skills related to working with school-age children in the family system. Observation in a variety of settings may be required.
- FCS 383. Parenting and Child Guidance 3 cr.  
Theories, principles, and skills essential for parents and professionals in guiding children within the family system. Problem prevention techniques are stressed. Prerequisite: either PSY 201G, SOC 101G or C EP 110G or consent of instructor.
- FCS 424. Field Experience: Issues and Ethics 4 cr.  
Supervised work experience in community agencies providing services to family systems. Discussion of professional issues and ethical dilemmas. A total of 8 credits must be taken. Consent of instructor required. Prerequisite(s): FCS 380 or equivalent, junior standing, and an overall GPA of at least 2.5 and consent of instructor. Restricted to: Main campus only. Restricted to FCS majors.
- FCS 446. Adolescent Development and the Family 3 cr.  
Research and theory relevant to the physical, mental, social, and emotional development of the child from age 12 to age 18. Attitudes, knowledge, and skills related to working with adolescents in the family system. Observation in a variety of settings may be required. Prerequisites: either 6 credits of social science or consent of instructor.
- FCS 447. Infancy and Early Childhood in the Family 3 cr.  
Research and theory relevant to prenatal development and the physical, mental, and socio-emotional development of the child from birth to age five. Attitudes, knowledge, and skills needed for working with young children and their families. Prerequisite: either 6 credits of social science or consent of instructor. Open to nonmajors.
- FCS 448. The Aging Family 3 cr.  
Research and theory related to the physical, mental, social, and emotional development of older adults. Attitudes, knowledge, and skills related to working with older adults in the family system, including normative, and nonnormative transitions. Prerequisites: either 6 credits of social science and FCS 380, or consent of instructor.
- FCS 449V. Family Ethnicities and Subcultures 3 cr.  
Comparative study of American family subsystems with respect to selected social, economic, and cultural backgrounds. Interaction of these subsystems in American society. Differentiated assignments for graduate students.
- FCS 450. Equine Assisted Learning 3 cr.  
Covers the complex relationship between horses and humans. Students are introduced to human psychological theories and methods of how people and horses can work together and the application of such structured learning settings using horses to achieve learning outcomes. Students will also be introduced to horsemanship including proper use and maintenance of equipment, safety, handling, basic care, behavior of horses and benefits of the horse. Consent of instructor required. Crosslisted with: ANSC 450
- FCS 492. Special Problems 1-4 cr.  
Individual research in a selected subject area of family and consumer sciences. Maximum of 4 credits per semester and a total of 6 credits.

### FCSC-FAMILY AND CONSUMER SCIENCE

- FCSC 111. Freshmen Orientation 1 cr.  
Orientation to university life, including available resources and methods to promote success at NMSU. General exposure to fields in agriculture and family and consumer sciences. Open to all freshmen and transfer students. Graded S/U.
- FCSC 400. Research Methods in Family and Consumer Sciences 3 cr.  
Introduction to research design and methodology in Family and Consumer Sciences. Overview of common research designs and data collection strategies. Prepares students to critique published research and perform basic skills including hypotheses development and conducting a literature search. Prerequisite: overall GPA of at least 2.5, junior or senior standing and consent of instructor. Restricted to HNDS, FSTE, FCS, FCSE, CTFM majors.

### FCSE- FAMILY AND CONSUMER SCIENCE EDUCATION

- FCSE 245. Overview of Family and Consumer Sciences Teaching 3 cr.  
Overview of planning and teaching skills. Supervised experiences in observing and directing the learning of secondary family and consumer sciences students. Philosophy and history of the profession.
- FCSE 345. Management Concepts in Family and Consumer Sciences Teaching 3 cr.  
Incorporation and application of management concepts in family and consumer sciences subject matter. Practical experience teaching management and ways to use management skills to plan, implement, and evaluate the teaching-learning transaction.
- FCSE 348. Teaching in Informal Family and Consumer Sciences Settings 3 cr.  
Learning principles and theories with application in informal family and consumer sciences education situations. Includes supervised experience in use of teaching strategies. Prerequisite: overall GPA of at least 2.5 or consent of instructor.
- FCSE 408. Field Experience Extension 1-9 cr.  
Experience in program planning and implementation with 4H groups, homemaker groups, and other community groups in extension programs. Practical experience with supervision by resident faculty as well as supervisor at the work site. Performance at work site will be graded in accordance with university standards. Attendance at one weekly class session required. Prerequisite: overall GPA of at least 2.5, C or better in FCSE 446 or consent of instructor. May be repeated for a maximum of 9 credits.
- FCSE 445. Vocational Programs for Youth and Adults 3 cr.  
History and development of vocational education programs. Ancillary functions of family and consumer sciences teachers. Experiences in extension programs and teaching.
- FCSE 446. Teaching Methods I for Family and Consumer Sciences 3 cr.  
Objectives, content, and organization of family and consumer sciences curriculum in high schools; materials and methods of teaching. Prerequisites: FCSE 245 and FCSE 345 and an overall GPA of at least 2.5, or consent of instructor. Restricted to majors.
- FCSE 447. Teaching Methods II for Family and Consumer Sciences 3 cr.  
Planning, preparation, and strategies for teaching family and consumer sciences in the secondary schools. Preparation for employment. Prerequisites: FCSE 245, FCSE 345, FCSE 445, FCSE 446 and an overall GPA of at least 2.5, or consent of instructor. Restricted to majors.
- FCSE 448. Supervised Teaching in Family and Consumer Sciences 9 cr.  
Seventy (70) days of full-time supervised teaching in selected high schools. Experience in community activities. Prerequisite: FCSE 446, an overall GPA of at least 2.5, and consent of instructor.
- FCSE 492. Special Problems 1-4 cr.  
Individual research study in a selected subject area of family and consumer sciences. Maximum of 4 credits per semester and 6 credits toward degree.

### FIN- FINANCE

- FIN 206. Introduction to Finance 3 cr.  
Theory and techniques of financial management for business firms. Includes application of financial analysis tools and techniques needed for business financial administration and decision making. Prerequisites: either ACCT 202 and ECON 251, or ECON 252 and MATH 120G, or consent of instructor. Community Colleges only.
- FIN 210. Financial Planning and Investments 3 cr.  
Individual financial planning and related financial markets and institutions. Community Colleges only.
- FIN 303V. Personal Financial Planning and Investing in a Global Economy 3 cr.  
Provides a framework for successful personal financial planning within an individual's career and income. Covers personal money management, federal and state taxation, the mathematics of finance and credit, housing, inflation, insurance, savings, and investments. Majors and minors may not use this course to satisfy their finance requirements.
- FIN 311. Financial Futures Markets 3 cr.  
Same as AG E 311.
- FIN 322. Principles of Insurance 3 cr.  
Theory and practice of insurance and its economics and social significance; review of the major lines of insurance including life, health, and property liability insurance.

- FIN 323. Life/Health/Employee Benefits 3 cr.  
Approaches to problems of employee security from the perspective of businesses. Topics including pensions, profit-sharing plans, 401(k) plans, group life and health plans, and flexible benefit programs. The course also addresses individual life, health, and annuity contracts within a financial planning context. Prerequisite: FIN 322.
- FIN 324. Property and Liability Insurance 3 cr.  
Analysis of property and liability insurance with emphasis on handling of commercial exposures. Review of property and liability company operations including rate making and insurance accounting. Prerequisite: FIN 322
- FIN 325. Real Estate Principles and Law I 3 cr.  
Real estate law and the fundamental aspects of the real estate purchase transaction and the real estate lease agreement. Topics include real estate brokerage, marketing of real estate, fundamental legal aspects of real estate, present and future interests, air and water rights, methods of transfer, basics of financing and liens, and real estate leases. Same as BLAW 325.
- FIN 326. Business Risk Management 3 cr.  
The operational risks faced by firms and the study of various methods of handling these risks, including loss prevention, risk retention, self-insurance, corporate insurance programs, and capital markets. Prerequisites: FIN 322
- FIN 341. Financial Analysis and Markets 3 cr.  
Financial analysis for business financing and investing decisions. Prerequisites ACCT 252, ECON 251, ECON 252, MATH 121G or 230, EST 251 or EST 311 or STAT 251G.
- FIN 355. Investments 3 cr.  
Analysis of investment risks and rewards and of the problems of portfolio selection and management. Operation of the securities market. Prerequisite(s): FIN 341 with a grade of C or better.
- FIN 360. Financial Information Technology 3 cr.  
Integrated use of electronic financial information resources with spreadsheet and word processing applications in investigating financial issues and solving financial problems. Prerequisites: FIN 341 or consent of instructor.
- FIN 385. Analysis of Financial Markets and Institutions 3 cr.  
Analysis of the financial system, emphasizing its institutions and instruments. Prerequisite(s): FIN 341 with a grade of C or better.
- FIN 391. Finance Internship and Cooperative Education I 1-3 cr.  
Introduction and application of finance principles in a work environment. Open only to students in the finance major or minor who will be working with an approved employer in a finance related position, over a period of 12 weeks or at least 300 work hours. Consent of instructor required.
- FIN 392. Insurance Internship and Cooperative Education I 1-3 cr.  
Introduction and application of insurance principles in a work environment. Open only to students in the finance major or insurance minor who will be working with an approved employer in an insurance related position, over a period of 12 weeks or at least 300 work hours. Consent of instructor required. Restricted to Finance majors.
- FIN 406. Theory of Financial Decisions 3 cr.  
Contemporary financial theory. Firm valuation, investments and financing decisions, risk analysis. Prerequisite(s): FIN 341 with a grade of C or better.
- FIN 421. Personal Financial Planning for Professionals 3 cr.  
Introduction to personal financial planning, including goal setting and fact finding, cash management, credit, housing, retirement planning, taxation and estate planning. This course is intended for those planning careers in personal financial advising in one of the various financial services environments. Prerequisite(s): FIN 341, or consent of Instructor.
- FIN 435. Investment Analysis 3 cr.  
Efficiency of capital markets, modern portfolio management, special topics of current interest to investment analysts. Prerequisite: FIN 355.
- FIN 436. Applied Security Analysis and Portfolio Management 1-3 cr.  
Application of analytical tools to security selection and portfolio management Prerequisite(s): FIN435.
- FIN 456. Real Estate Investments and Financing 3 cr.  
Basic considerations for real estate investment and financing in local, state, and national markets. Prerequisite: FIN 325 or BLAW 325 or consent of instructor.
- FIN 466. Financial Policy Decisions 3 cr.  
Application and integration of financial theory, concepts, and practice using the case method. Prerequisite: FIN 406 or consent of instructor.
- FIN 470. Real Estate Appraisal 3 cr. (2+2P)  
This course addresses issues influencing the value of real estate with some emphasis upon rural properties. Topics include courthouse records, property taxes, appraisal methodology, expert courtroom testimony, condemnation, and legal issues. Students will take field trips and write appraisals. Course material is relevant to student in Finance, Accounting, and Pre-Law, as well as Agriculture. Accredited for hours to apply to both pre-licensing and continuing education requirements of the New Mexico Real Estate Commission for both Appraisers and Real Estate Brokers. Prerequisite(s): Junior or above standing. Crosslisted with: AG E 470.
- FIN 475. International Managerial Finance 3 cr.  
International aspects of financial transactions, decision-making, banking and financial markets. Prerequisite: FIN 341. Same as I B 475.
- FIN 480. Management of Financial Institutions 3 cr.  
Asset and liability management of financial institutions; emphasis on commercial bank management. Prerequisite: FIN 385 or consent of instructor.
- FIN 490. Selected Topics 1-3 cr.  
Current topics in finance. Prerequisites: vary according to the seminar being offered.
- FIN 491. Finance Internship and Cooperative Education II 1-3 cr.  
Advanced application of finance techniques to the work environment. Prerequisite: consent of instructor. Restricted to finance majors.
- FIN 498. Independent Study 1-3 cr.  
Individual studies directed by consenting faculty with the prior approval of the department head. Prerequisites: junior or above standing and consent of instructor. A maximum of 3 credits may be earned.
- FIRE- FIRE SCIENCE**
- FIRE 101. Basic Firefighter 8 cr. (6+6P)  
Basic concepts and methodologies of fire suppression. Meets or exceeds NFPA standards. Community Colleges Only.
- FIRE 102. Fire Fighter IB 4 cr. (3+3P)  
Continuation of basic concepts and methodologies of fire suppression. Meets or exceeds NFPA standards. Prerequisite: OEFS 101.
- FIRE 104. Firefighter II 8 cr. (6+6P)  
Advances concepts and methodologies of fire suppression. Meets and exceeds NFPA standards. Prerequisites: OEFS 101, OEFS 114, OEFS 115, OEFS 126, OEFS 202, OEFS 216, OEFS 223, OEFS 224, OEFS 225, OEFS 251, OEFS 252, OEEM 115 or OEEM 120/121, Basic Firefighter Certification and approval of instructor.
- FIRE 112. Principles of Emergency Services 3 cr.  
This course provides an overview to fire protection and emergency services; career opportunities in fire protection and related fields; culture and history of emergency services; fire loss analysis; organization and function of public and private fire protection services; fire departments as part of local government; laws and regulations affecting the fire service; fire service nomenclature; specific fire protection functions; basic fire chemistry and physics; introduction to fire protection systems; introduction to fire strategy and tactics; life safety initiatives. Restricted to: Community colleges.
- FIRE 114. Fire Behavior and Combustion 3 cr.  
This course explores the theories and fundamentals of how and why fires start, spread, and are controlled. Restricted to: Community colleges.
- FIRE 115. Hazardous Materials Responder 4 cr.  
Training for personnel expected to respond to and handle defensively, emergencies involving hazardous materials in order to protect people, property and the environment from as much exposure as possible. Preparation for Awareness Level I and Operations Level II. Meets or exceeds NFPA 471, 472, 473, OSHA 1910.120 part Q, HMER plan. Restricted to: Community Colleges only.
- FIRE 120. Fire Protection Hydraulics and Water Supply 3 cr.  
This course provides a foundation of theoretical knowledge in order to understand the principles of the use of water in fire protection and to apply hydraulic principles to analyze and to solve water supply problems. Restricted to: Community colleges.
- FIRE 126. Fire Prevention 3 cr.  
This course provides fundamental knowledge relating to the field of fire prevention. Topics include: history and philosophy of fire prevention; organization and operation of a fire prevention bureau; use and application of codes and standards; plans review, fire inspection; fire and life safety education; and fire investigation. Restricted to: Community colleges.



- FIRE 127. Rescue Operations** 3 cr.  
A course designed to acquaint the student with the equipment and procedures employed in search and rescue operations to safely remove persons from burning structures, automobile accidents, and natural disasters. Prerequisite: consent of instructor. Restricted to majors.
- FIRE 128. Apparatus and Equipment** 3 cr.  
Fire apparatus specifications design, construction features, performance factors, and field hydraulics as related to operation and maintenance. Prerequisite: MATH 115 or consent of instructor.
- FIRE 130. Principles of Fire and Emergency Services Safety and Survival** 3 cr.  
This course introduces the basic principles and history related to the national firefighter life safety initiatives, focusing on the need for cultural and behavior change throughout the emergency services. Consent of instructor required. Restricted to: Community colleges.
- FIRE 142. Fire Fighter Training S-130** 3 cr.  
Wildland Fire Training FFT2: A field course providing entry-level fire fighting skills through 13 instructional units of study. May also serve as refresher training for returning fire fighters and a means of testing personnel with undocumented prior experience. Instructed in accordance to NWCG standards.
- FIRE 200. Special Topics** 1-3 cr.  
Specific subjects to be announced in the Schedule of Classes. Course may be repeated for credit as topics change.
- FIRE 201. Independent Study** 1-3 cr.  
Research on an approved topic to meet graduation requirements. Meets or exceeds NFPA standards. Prerequisite: consent of instructor. May be repeated for total of 9 credits.
- FIRE 202. Wildland Fire Control** 1-3 cr.  
Focuses on factors affecting wildland fire control and prevention, fire behavior, control techniques, command structure and other operations including Standards for Survival I-100, S-130 and S-190 Meets or exceeds NWCG Training Curriculum and NFPA 1051 standards. Community Colleges Only.
- FIRE 203. Fire and Emergency Services Administration** 3 cr.  
This course introduces the student to the organization and management of a fire and emergency services department and the relationship of government agencies to the fire services department and the relationship of government agencies to the fire service. Emphasis is placed on fire and emergency service, ethics, and leadership from the perspective of the company officer. Restricted to: Community colleges.
- FIRE 205. Fire Chemistry** 3 cr.  
Theories of combustion and extinguishment, including the analysis of flammable materials, the nature of extinguishing agents, and the properties of matter affecting fire behavior. Prerequisite: CHEM 110G.
- FIRE 210. Building Construction for Fire Protection** 3 cr.  
This course provides the components of building construction related to firefighter and life safety. The elements of construction and design of structures are shown to be key factors when inspecting buildings, preplanning fire operations, and operating at emergencies. Restricted to: Community colleges.
- FIRE 214. Hazardous Materials Technician** 3 cr.  
Knowledge and skills about hazardous materials mitigation needed to certify as a Hazardous Materials Technician Level III. Meets or exceeds NFPA 471, 472, 473 standards, and OSHA 1910.102 part Q, and New Mexico HMER plan. Prerequisite(s): OEFS 115. Restricted to: Community Colleges only.
- FIRE 216. Hazardous Materials Chemistry** 3 cr.  
This course provides basic chemistry relating to the categories of hazardous materials including recognition, identification, reactivity, and health hazards encountered by emergency services. Restricted to: Community colleges.
- FIRE 217. Operations in the Wildland-Urban Interface S-215** 3 cr.  
Provides training for initial attack incident commanders and company officers confronting wildfire presenting a threat to life and property. Instructional units include: size-up, initial strategy and action plan, structure triage, tactics, action plan, assessment, public relations and follow up, and safety. Presented in a classroom environment. Instructed in accordance to NWCG standards. Prerequisite: qualified as any Single Resource Boss or OEFS 231.
- FIRE 220. Cooperative Experience I** 1-3 cr.  
Supervised cooperative work program. Student is employed in an approved occupation and rated by the employer and instructor. Prerequisite: consent of instructor. May be repeated for a maximum of 6 credits. Graded S/U.
- FIRE 221. Cooperative Experience II** 3 cr.  
Apply advanced firefighting knowledge and skills while working with fire protection agencies. Meets or exceeds NFPA standards. Consent of instructor required. Graded: S/U. Prerequisite(s): OEFS 220. Restricted to: Community Colleges only.
- FIRE 222. Aircraft Fire Control** 3 cr.  
Provides a broad understanding of airport operations required to effectively perform aircraft firefighting and other emergencies. Meets or exceeds NFPA 402, 403, 405 standards. Restricted to: Community Colleges only.
- FIRE 223. Fire Investigations I** 3 cr.  
This course is intended to provide the student with the fundamentals and technical knowledge needed for proper fire scene interpretation, including recognizing and conducting origin and cause, preservation of evidence and documentation, scene security, motives of the firesetter, and types of fire causes. Restricted to: Community colleges.
- FIRE 224. Strategy and Tactics** 3 cr.  
This course provides the principles of fire ground control through utilization of personnel, equipment, and extinguishing agents. Restricted to: Community colleges.
- FIRE 225. Fire Protection Systems** 3 cr.  
This course provides information relating to the features and design and operation of fire alarm systems, water-based fire suppression systems, special hazard fire suppression systems, water supply for fire protection and portable fire extinguishers. Restricted to: Community colleges.
- FIRE 226. Fire Investigations II** 3 cr.  
This course is intended to provide the student with advanced technical knowledge on the rule of law, fire scene analysis, fire behavior, evidence collection and preservation, scene documentation, case preparation and court-room testimony. Restricted to: Community colleges.
- FIRE 230. Fire Service Instructor** 3 cr.  
Provides the instructor candidate with methods and techniques of instruction including oral communications, preparing lesson plans, writing performance objectives, use of audio and other training aids, and the selection, evaluation and preparation of performance tests. Meets and exceeds NFPA 1041 Level I standards. Restricted to: Community Colleges only.
- FIRE 232. Firefighter Internship** 3 cr.  
Application of knowledge, skills and abilities in a fire service department, as a firefighter intern and integrated member of a fire affiliated agency. Prerequisites: OEFS 101, OEFS 102, OEFS 115, OEFS 202 and EMT-B and consent of instructor. Restricted to majors.
- FIRE 233. Practical Approach to Terrorism** 3 cr.  
Gives responder an overall safety approach in recognizing and responding to incidents involving terrorism. Presents an overview in types of harm, explosive weapons, chemical weapons, biological weapons and radiological weapons. Restricted to: Community Colleges only. Crosslisted with: LAWE 233
- FIRE 251. Incident Command System-NIMS 700** 3 cr.  
NIMS provides a consistent nationwide Homeland Security template to enable all government, private-sector, and nongovernmental organizations to work together during domestic incidents. Community Colleges only.
- FIRE 252. Vehicle Extrication** 2 cr. (1+3P)  
Course provides students with information on the newest types of air bags, restraint systems and latest tools and techniques used in vehicle extrication; course meets or exceeds NFPA standards. Restricted to: Community Colleges only.
- FREN- FRENCH**
- FREN 111. Elementary French I** 4 cr.  
French language for beginners.
- FREN 112. Elementary French II** 4 cr.  
French language for beginners. Prerequisite: C or better in FREN 111.
- FREN 211. Intermediate French I** 3 cr.  
Speaking, reading, and writing. Prerequisite: C or better in FREN 112.
- FREN 212. Intermediate French II** 3 cr.  
Speaking, reading, and writing. Prerequisite: C or better in FREN 211.
- FREN 301. Readings in French** 3 cr.  
Experience in reading and appreciation of a wide selection of French texts; a bridge between intermediate and advanced courses and a guide from excerpts to complete works. Prerequisite(s): FREN 212 or consent of instructor.
- FREN 302. Introduction to Literature** 3 cr.  
How to read and analyze French literature in all genres. Prerequisite(s): FREN 212 or consent of instructor.



- FREN 305. Topics in Francophone Civilization 3 cr.  
Selected topics focusing on Francophone culture and civilization. Topics identified in the Schedules of Classes. Prerequisite: FREN 212 or consent of instructor. May be repeated for a maximum of 6 credits. Only 3 credits will be accepted from study abroad.
- FREN 306. Topics in French Culture and Civilization 3 cr.  
Selected topics focusing on French culture and civilization. Topics identified in the Schedule of Classes. May be repeated for a maximum of 6 credits. Prerequisite: FREN 212 or consent of instructor.
- FREN 313. Composition and Grammar I 3 cr.  
Exercises in written French with emphasis on grammatical features. Prerequisite: FREN 212.
- FREN 314. Composition and Grammar II 3 cr.  
Advanced exercises in written French with emphasis on grammatical features. Prerequisite: FREN 313.
- FREN 325. Intermediate Conversation 3 cr.  
French conversation through intensive oral practice with emphasis on vocabulary acquisition and pronunciation. Prerequisite: FREN 212 or consent of instructor.
- FREN 352. French Phonetics 3 cr.  
Systematic description of modern French pronunciation. Corrective exercises for foreign learners. Formal study of spelling/pronunciation relationships. Prerequisite(s): FREN 212 or consent of instructor.
- FREN 360. French Cinema 3 cr.  
The evolution of contemporary French cinema. A critical understanding of film as an art form and as cultural expression. Prerequisite: FREN 212 or consent of instructor.
- FREN 362. Contemporary French Culture 3 cr.  
Institutions, life styles and popular attitudes in modern France. Prerequisite(s): FREN 212 or consent of instructor.
- FREN 365V. Perspectives in French Culture 3 cr.  
Examines components of French culture through literature, films, and other sources. Taught in English. Does not satisfy Arts and Sciences second language requirement. Does not satisfy French major or minor requirements.
- FREN 378. Studies in Francophone Cultures 3 cr.  
Studies of representative Francophone cultures through their history, literature, music, and films. Prerequisite(s): FREN 212 or consent of instructor.
- FREN 381. Survey of French Literature I 3 cr.  
Literary movements, authors, and selected texts of the Middle Ages through the eighteenth century. Prerequisite(s): FREN 212 or consent of instructor.
- FREN 382. Survey of French Literature II 3 cr.  
Literary movements, authors, and selected texts of the nineteenth and twentieth centuries. Prerequisite(s): FREN 212 or consent of instructor.
- FREN 385. French Civilization 3 cr.  
A detailed study of important events in French civilization from its origins to the twentieth century through the study and discussion of history, literature, fine arts and politics. Prerequisite(s): FREN 212 or consent of instructor.
- FREN 386. Contemporary Women Writers in French 3 cr.  
Exploration of literary texts by contemporary women writers in France and the Francophone world; emphasizes the cultural contexts that have defined women's relationship to writing. Selections will vary from year to year. Prerequisite(s): FREN 212 or consent of instructor.
- FREN 408. The Art of Translation 3 cr.  
Explores the theory and practice of translation from French to English and English to French through a variety of texts. Prerequisite(s): FREN 212 or consent of instructor.
- FREN 410. Paris: History and Cultures 3 cr.  
An in-depth look at history and culture of Paris from its origins to the present. Prerequisite(s): FREN 212 or consent of instructor.
- FREN 425. Advanced Conversation 3 cr.  
Advanced conversation through intensive oral practice. Prerequisite: FREN 212 or consent of instructor.
- FREN 449. Special Problems 1-3 cr.  
Directed reading for graduate students in specific field to satisfy language requirement for master's or doctoral programs.
- FREN 451. Special Topics in French 1-3 cr.  
Selected topics relating to the cultures or literatures of the countries where French is spoken will be announced in the Schedule of Classes. Prerequisite: consent of instructor. May be repeated for a maximum of 12 credits.
- FREN 453. Independent Studies in French 1-3 cr.  
Individualized, self-paced, projects for advanced students. Prerequisite: consent of instructor. May be repeated for a maximum of 6 credits.
- FREN 462. Advanced Contemporary French Culture 3 cr.  
Advanced study of institutions, lifestyles and popular attitudes in modern France. Emphasis on everyday life rather than prestigious monuments in civilizations. Prerequisite: FREN 212 or consent of instructor.
- FREN 471. The French Novel 3 cr.  
Development of the novel and analysis of selected texts with emphasis on the nineteenth and twentieth centuries. Prerequisite(s): FREN 212 or consent of instructor.
- FREN 472. The French Short Story 3 cr.  
Study and discussion of French short stories through the ages. Prerequisite(s): FREN 212 or consent of instructor.
- FREN 478. Studies in Francophone Cultures Around the World 3 cr.  
Advanced studies of representative Francophone cultures through their history, literature, music, and films. Prerequisite(s): FREN 212 or consent of instructor.
- FREN 485. Advanced French Civilization 3 cr.  
Advanced study of important events in French civilization from its origins to the twentieth century through the study and discussion of history, literature, fine arts and politics. Prerequisite(s): FREN 212 or consent of instructor.
- FREN 486. Advanced Contemporary Women Writers in French 3 cr.  
Advanced study of literary texts by contemporary women writers in France and the Francophone world; emphasizes the cultural contexts that have defined women's relationship to writing. Selections will vary from year to year. Prerequisite(s): FREN 212 or consent of instructor.
- FRMG- FAMILY RESOURCE MANAGEMENT**
- FRMG 330. Personal and Family Finance 3 cr.  
Principles, processes and procedures involved in effective utilization and management of financial resources to meet the needs of individuals and/or families. Open to nonmajors.
- FRMG 331. Management of Family Life and Resources 3 cr.  
Concepts, principles, and processes of management applied to family living and the optimal utilization of family resources. Open to nonmajors.
- FRMG 333. Consumer Practices and Problems 3 cr.  
Consumer issues related to social, political, and economic components of the larger social system. Focuses on consumer rights and responsibilities within the marketplace.
- FRMG 335. Housing and Interior Design 3 cr.  
Investigation of types of housing and factors impacting housing decisions for families. Selection, planning, and arrangement of interior components of homes to meet the needs of the family. Prerequisite: ART 101G or ART 110G.
- FRMG 450. Special Topics 1-4 cr.  
Special subjects and credits to be announced in the Schedule of Classes. May be taken for a maximum of 4 credits per semester and a total of 9 credits toward a degree.
- FSTE- FOOD SCIENCE AND TECHNOLOGY**
- FSTE 164G. Introduction to Food Science and Technology 4 cr. (3+2P)  
An introductory course in the scientific study of the nature and composition of foods and their behavior during all aspects of their conversion from raw materials to consumer food products.
- FSTE 175. ACES in the Hole Foods I 1-4 cr. (2P)  
Food production activities related to operation of ACES in the Hole Foods, a student-run food company that will give FSTE majors hands-on experience in all aspects of developing, producing and marketing food products. Prerequisite(s): FSTE 164G. Restricted to: Main campus only. Restricted to FSTE majors.
- FSTE 200. Special Topics 1-4 cr.  
Specific topics and credits to be announced in the Schedule of Classes. Maximum of 4 credits per semester and a grand total of 9 credits.
- FSTE 210G. Survey of Food and Agricultural Issues 3 cr.  
Same as AG E 210G.
- FSTE 263G. Food Science I 4 cr. (4+3P)  
The scientific study of the principles involved in the preparation and evaluation of foods.

- FSTE 275. ACES in the Hole Foods II** 1-4 cr. (2P)  
Food production activities related to operation of ACES in the Hole Foods, a student-run food company that will give FSTE majors hands-on experience in all aspects of developing, producing and marketing food products. Prerequisite(s): FSTE 175. Restricted to: Main campus only. Restricted to FSTE majors.
- FSTE 320. Food Microbiology** 3 cr. (2+3P)  
Detrimental and beneficial microbiological aspects of food products. Methods of quantification and identification of microorganisms associated with food spoilage and preservation. Prerequisite: BIOL 111G and BIOL 111L, or BIOL 211G and BIOL 211L, or BIOL 190, or consent of instructor.
- FSTE 325. Food Analysis** 3 cr.  
Basic chemical and physical techniques used in establishing nutritional properties and overall acceptance of food products. Prerequisite: CHEM 111G or consent of instructor.
- FSTE 328. Introduction to Food Engineering** 4 cr. (3+2P)  
Basic engineering principles including mass and energy balances, fluid flow, heat transfer and chemical kinetics and their application to food processing unit operations. Video and laboratory participation are used to enhance course content and relevance. Prerequisite(s): MATH 142G or consent of instructor.
- FSTE 331. Food Preservation** 3 cr. (2+3P)  
Processes used in home and commercial food preservation, including canning, freezing, drying, and irradiation. Prerequisite: FSTE 263G.
- FSTE 375. ACES in the Hole Foods III** 1-4 cr. (2P)  
Food production activities related to operation of ACES in the Hole Foods, a student-run food company that will give FSTE majors hands-on experience in all aspects of developing, producing and marketing food products. Prerequisite(s): FSTE 275. Restricted to FSTE majors.
- FSTE 415. Food Safety and Sanitation** 3 cr.  
Biological, chemical and physical factors that affect the safety of food products. Basic aspects of food sanitation. Hazard analysis critical control points (HACCP). Laws and regulations influencing food safety. Prerequisites: BIOL 110G or BIOL 190 or BIOL 211G, and CHEM 110G or CHEM 111G, or consent of instructor.
- FSTE 421. Food Chemistry** 3 cr.  
Comprehensive study of the chemical and physiochemical properties of food constituents. Chemical changes involved in the production, processing, and storage of food products and basic techniques used to evaluate chemical and physiochemical properties of foods. Prerequisites: CHEM 111G, CHEM 112G, and CHEM 211, or consent of instructor.
- FSTE 423. Food Processing Technologies** 4 cr. (3+2P)  
Common food processing unit operations such as raw material preparation, separation, concentration, fermentation, pasteurization, sterilization, extrusion, dehydration, baking, frying, chilling, freezing, controlled atmosphere storage, water, waste and energy management, packaging, materials handling and storage and process control. Application of principles to processing food in a laboratory setting. Prerequisite(s): FSTE 328.
- FSTE 425. Sensory Evaluation of Foods** 3 cr. (2+2P)  
Principles and procedures involved in the sensory evaluation of foods. Physiological, psychological and environmental factors affecting the evaluation of sensory properties. Analysis and interpretation of sensory data. Prerequisite(s): FSTE 263G and A ST 311 or STAT 251.
- FSTE 426. Dairy Products Manufacturing** 3 cr.  
Physical, chemical, microbiological and sensory properties of milk and dairy products. Capstone course which includes a variety of techniques used in previous classes to evaluate milk and dairy products. Prerequisites: HNFS 320, HNFS 325, and HNFS 421, or consent of instructor.
- FSTE 427. Food Industry Research Problems I** 3 cr.  
In coordination with the instructor, students choose a food-industry problem and design a research project aimed at solving that problem. Prerequisites: HNFS 263, HNFS 320, HNFS 325, and HNFS 447, or consent of instructor. Restricted to majors.
- FSTE 428. Food Industry Research Problems II** 3 cr.  
Students conduct the research project designed in HNFS 427 and complete a journal article on the project following a specified format. Prerequisite: HNFS 427. Restricted to majors.
- FSTE 429. Product Development** 0-3 cr. (2+2P)  
Application of chemical, physical, nutritional and psychological principles and experimental methods to the development and evaluation of a food product for a specified food product development competition. Prerequisite(s): FSTE 320 and FSTE 425.
- FSTE 430. Designing and Brewing Great Beers of the World** 3 cr. (2+2P)  
The science and technology of brewing unit operations and the ingredients used in beer brewing. That knowledge is then applied to designing and brewing classic world beer styles. Styles investigated change every semester but typically include India Pale Ale, Pale Ale, Stout, Porter, Hefeweizen, Scottish Ale, and Black IPA. Comprehensive evaluation of the product relative to style guidelines completes the design-brew-evaluate cycle. Students must be at least 21 years of age on the first day of class.
- FSTE 447. Experimental Foods** 3 cr.  
Application of chemical, physical, nutritional and psychological principles and experimental methods to the development and evaluation of foods. Prerequisite: FSTE 263G.
- FSTE 450. Special Topics** 1-4 cr.  
Specific subjects and credits to be announced in the Schedule of Classes. Maximum of 4 credits per semester and a grand total of 9 credits towards a degree. Consent of instructor required.
- FSTE 475. ACES in the Hole Foods IV** 1-4 cr. (2P)  
Food production activities related to operation of ACES in the Hole Foods, a student-run food company that will give FSTE majors hands-on experience in all aspects of developing, producing and marketing food products. Prerequisite(s): FSTE 375. Restricted to FSTE majors.
- FSTE 492. Special Problems** 1-4 cr.  
Individual research study in a selected subject of Family and Consumer Sciences. Maximum of 4 credits per semester and a grand total of 8 credits towards a degree. Consent of instructor required.
- FWCE- FISHERY, WILDLIFE AND CONSERVATION ECOLOGY**
- FWCE 110. Introduction to Natural Resources Management** 3 cr.  
Introduction to managing natural resources with an emphasis on historical and current issues affecting the management of renewable natural resources.
- FWCE 111. Freshman Orientation** 1 cr.  
Orientation to university life, including the understanding and utilization of resources that promote University success. Designated to promote success in achieving a career objective and perseverance for degree completion. Promotes a recognition of changes required in moving from high school to the University. Eight weeks in length, required for all freshmen in the College of Agriculture and Home Economics.
- FWCE 255. Principles of Fish and Wildlife Management** 3 cr.  
Basic principles of fish and wildlife management including history, ecology, economics, and policy. Emphasis on wildlife and fisheries. Uses an ecosystem approach integrating living and nonliving resources.
- FWCE 261. Special Topics** 1-4 cr.  
Specific subjects and credits to be announced in the Schedule of Classes. Maximum of 4 credits per semester and a grand total of 9 credits. Field trips may be required.
- FWCE 301. Wildlife Ecology** 3 cr.  
General ecological theory with emphasis on concepts including biogeography, species interactions, population dynamics and disease ecology as they relate to the management and conservation of vertebrates. Prerequisite(s): BIOL 111G or BIOL 190.
- FWCE 330. Natural History of the Vertebrates** 4 cr. (3+2P)  
Evolution, ecology, and diversity of vertebrates. Topics include comparative anatomy and physiology, biogeography, community ecology, behavior, and conservation. Laboratory emphasizes identification of local taxa. Field trips required. Prerequisite(s): BIOL 111G and BIOL 111L. Pre/Corequisite(s): BIOL 322 Zoology.
- FWCE 353. Management of Wildlife Enterprises** 3 cr.  
Management of game ranches, shooting preserves, and commercial sport fisheries. Integration of wildlife management with agricultural and other uses. Field trips required. Prerequisite: senior standing in wildlife or fishery science, or consent of instructor.
- FWCE 359. Advanced Studies in Fishery and Wildlife Sciences** 3 cr.  
Preparation for competing in the Western Regional Quiz Bowl. Consent of instructor required. Pre/Corequisite(s): FWCE 330. Restricted to FWCE majors.
- FWCE 360. Introduction to Wildlife Behavior** 3 cr.  
Behavior of wild vertebrates and management implications. Topics include social organization, marking, territoriality, environmental influences, mother-offspring relationships, and field procedures. Prerequisite: junior standing or above.
- FWCE 385. Special Topics** 1-4 cr.  
Specific subjects and credits to be announced in the Schedule of Classes. Maximum of 4 credits per semester and a grand total of 9 credits.

- FWCE 391. Internship 1-3 cr.  
Professional work experience under the joint supervision of the employer and a faculty member. A written report is required. No more than 3 credits toward a degree. Prerequisite: consent of instructor. Graded S/U.
- FWCE 393. Professional Experience 3 cr.  
Professional work experience under the supervision of employer and/or a faculty member. Written report and presentation is required. Consent of instructor required. Pre/Corequisite(s): FWCE 255.
- FWCE 402. Seminar in Natural Resource Management 1 cr.  
Review of current topics in natural resource management. Oral and written report required. Prerequisite: senior standing or above.
- FWCE 409. Introduction to Population Ecology 3 cr.  
Quantitative analysis of vital statistics and mechanisms affecting dynamics of wild populations. Patterns of growth, age structure, survival, and natality. Population theories and life tables. Prerequisites: MATH 142G and FWCE 255.
- FWCE 430. Avian Field Ecology 4 cr. (3+3P)  
Principles of avian ecology and management with an emphasis on taxonomy, physiology, behavior and field studies. Includes weekly field trips focusing on identification and behavior of Southwest birds. Pre/Corequisite(s): FWCE 330.
- FWCE 431. Mammalogy 3 cr. (3+2P)  
Classification, identification, anatomy, physiology, life history, and ecology of mammals. Field trips required. Prerequisite(s): FWCE 255 and FWCE 330.
- FWCE 432. Environmental Biology of Fishes 4 cr. (3+3P)  
What makes a fish, a fish. Mechanisms of circulation, gas exchange, osmotic and ionic regulation, swimming, migration, reproduction, and chemoreception. Prerequisite: senior standing or consent of instructor. Same as FWCE 532.
- FWCE 434. Aquatic Contaminants and Toxicology 4 cr. (3+3P)  
Basic principles and methodologies of aquatic toxicity testing. Routes of exposure and modes of action. Environmental legislation and ecological risk assessment. Prerequisite: senior standing or consent of instructor. Same as FWCE 534.
- FWCE 437. Wildlife Damage Management 3 cr.  
Introduction to basic need and appropriate methods for management of animal damage. Socioeconomic, ecological, and political factors. Prerequisite(s): BIOL 111G/FWCE 255.
- FWCE 448. Problems 1-3 cr.  
Individual investigations in fishery or wildlife science. Maximum 3 credits per semester and a grand total of 6 credits. Consent of instructor required. Prerequisite(s): 18 credits in FWCE.
- FWCE 450. Special Topics 1-4 cr.  
Specific subjects and credits as announced in the Schedule of Classes. Maximum of 4 credits per semester and a grand total of 9 credits. Consent of instructor required.
- FWCE 455. Environmental Risks and Decisions 3 cr.  
Risk assessment and decision analysis in the context of environmental and conservation issues. Concepts of risk perception and uncertainty; precautionary principle; the roles of experts and stakeholders; the use of conceptual and probabilistic models in risk assessment. Pre/Corequisite(s): MATH 142 or MATH 191G, A ST 311, FWCE 301.
- FWCE 457. Ecological Biometry 3 cr.  
Use of ecological data to test scientific hypotheses. Stochastic and statistical models for environmental data, data visualization, likelihood-based and information-based model selection. Emphasis on open-source software tools. Prerequisite(s): MATH 142G or 191G, A ST 311, FWCE 301.
- FWCE 459. Aquatic Ecology 4 cr.  
Plant and animal communities in aquatic ecosystems with emphasis on chemical and physical properties, productivity, species interactions, population dynamics, and concepts for diagnosing problems and restoring aquatic ecosystems. Prerequisite(s): FWCE 301 or BIOL 301, CHEM 112G, MATH 142G.
- FWCE 462. Conservation Biology 3 cr.  
An examination of the patterns of biological diversity, the processes that generate and maintain it, as well as the forces that are eroding it. Aspects will include the value of biodiversity, factors driving extinction, national and international law and policy. Prerequisite(s): BIOL 111G and BIOL 111L. Pre/Corequisite(s): FWCE 301.
- FWCE 464. Management of Aquatic and Terrestrial Ecosystems 4 cr. (3+2P)  
Principles and methods for managing aquatic and terrestrial ecosystems and their fish and wildlife resources. Emphasis on quantitative techniques, data collection and analysis for management of systems at a landscape spatial scale. Prerequisite(s): BIOL 301 or FWCE 301, FWCE 330, A ST 311.

- FWCE 466. Advanced Wildlife Management of Mammals 3 cr.  
Ecological principles, production and harvest, habitat management, and techniques of mammal management.
- FWCE 482. Ichthyology 4 cr. (3+2P)  
Classification, morphology, identification, life history, and ecology of fishes. Prerequisite(s): FWCE 330 or consent of instructor.
- FWCE 488. Conservation Genetics 3 cr.  
Application of evolutionary theory and biotechnologies used in conservation of populations including concepts in population structure, gene flow, inbreeding, hybridization, and forensics. Consent of instructor required. Prerequisite(s): BIOL 305 or AGRO 305.

### GENE- GENETICS

- GENE 110. Experimental Systems in Genetics 1 cr.  
Survey of molecular, biochemical, organismal, and computer science based approaches to investigate how genes determine important traits. Historical development and topics of current interest will be discussed.
- GENE 305 L. Genetic Techniques 1 cr. (3P)  
Experimental procedures used in genetic research including: sexual transmission genetics, eukaryotic DNA isolation, DNA marker development and genotyping, polymerase chain reaction, and cytogenetics. Pre/Corequisite(s): GENE 315, or AGRO/ANSC/BIOL/HORT 305.
- GENE 315. Molecular Genetics 3 cr.  
Covers fundamental principles of DNA structure and replication, transcription, translation, gene regulation, recombinant DNA technology, and a survey of genomics and bioinformatics. Prerequisite(s): CHEM 111 and BIOL 211.
- GENE 320. Hereditary and Population Genetics 3 cr.  
Covers fundamental principles of reproduction, variation, and heredity in plants and animals including: Mendelian inheritance, mitosis, meiosis, genetic linkage, random mating, genetic drift, natural selection, inbreeding, migration, mutation, interrelationships between individuals, populations and communities and the environment. Prerequisite(s): CHEM 111 & BIOL 211.
- GENE 440. Genetics Seminar 1 cr.  
Organization, preparation, and presentation of genetic studies in model microorganism, plant, or animal systems that have been used to solve problems in molecular, cellular, and developmental biology. Consent of instructor required. Prerequisite(s): Seniors only; GENE 315 & GENE 320.
- GENE 449. Special Problems 1-3 cr.  
Research problem, experience training, or other special study approved by a faculty advisor. Maximum of 3 credits per semester and a grand total of 3 credits toward a degree. Consent of instructor required.
- GENE 450. Special Topics 1-3 cr.  
Specific subjects to be announced in the schedule of classes. Maximum of 3 credits per semester and a total of 3 credits toward a degree. Consent of instructor required.
- GENE 452. Applied Bioinformatics 3 cr.  
Survey and application of publicly available bioinformatic tools that treat genomic DNA, cDNA, and protein sequences, RNA abundance, as well as tools that allow inference based on phylogenetic relationships. Prerequisites: AGRO/ANSC/BIOL/HORT 305 or GENE 315 and GENE 320, and BCHE 341, or BCHE 395.
- GENE 486. Genes and Genomes 3 cr.  
Extensive coverage of nuclear and organelle genome structure in plants and animals, genome restructuring including duplication, aneuploidy, chromosome translocations and inversions, comparative genomics, and molecular systematics. Prerequisites: AGRO/ANSC/BIOL/HORT 305 or GENE 315, and GENE 320.
- GENE 488. Gene Regulation 3 cr.  
Extensive coverage of signal transduction processes and approaches used to monitor large scale changes in gene regulation and protein synthesis that occur during development and in response to environmental changes. Prerequisites: AGRO/ANSC/BIOL/HORT 305 or GENE 315.

### GEOG- GEOGRAPHY

- GEOG 110. The Biosphere and Lithosphere 3 cr. (2+3P)  
Introduction to physical forces that shape the environment: unique spatial characteristics of flora and fauna; soil development and classification; geomorphic processes and landform development. Completion of both GEOG 109 and GEOG 110 will substitute for GEOG 111G. Community Colleges only.



- GEOG 111G. Geography of the Natural Environment** 4 cr. (3+3P)  
Introduction to the physical processes that shape the human environment: climate and weather, vegetation dynamics and distribution, soil development and classification, and geomorphic processes and landform development.
- GEOG 112G. World Regional Geography** 3 cr.  
Overview of the physical geography, natural resources, cultural landscapes, and current problems of the world's major regions. Students will also examine current events at a variety of geographic scales.
- GEOG 120G. Culture and Environment** 3 cr.  
Study of human-environmental relationships: how the earth works and how cultures impact or conserve nature. Introduction to relationships between people and natural resources, ecosystems, global climate change, pollution, and conservation.
- GEOG 257. Introduction to Weather Science** 4 cr. (3+3P)  
Introduction to Earth's atmosphere and the dynamic world of weather as it happens. Working with current meteorological data delivered via the Internet and coordinated with learning investigations keyed to the current weather; and via study of select archives. Prerequisite(s): None. Cross-listed with: SOIL 257 and AGRO 257
- GEOG 259. Introduction to Oceanography** 4 cr. (3+3P)  
Introduces the origin and development of the ocean and marine ecological concepts. Examines physical processes such as waves, tides, and currents and their impact on shorelines, the ocean floor, and basins. Investigates physical processes as they relate to oceanographic concepts. Includes media via the Internet and laboratory examination of current oceanic data as an alternative to the actual oceanic experience. Students will gain a basic knowledge and appreciation of the ocean's impact on the world's ecology.
- GEOG 281. Map Use and Analysis** 3 cr. (2+3P)  
Exploration of the cartographic medium. Development of critical map analysis and interpretation skills, and map literacy. Comprised of traditional lecture, labs, and map use projects.
- GEOG 291. Special Topics** 1-3 cr.  
Specific subjects to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits.
- GEOG 295. Introduction to Climate Science** 4 cr. (3+3P)  
Examines fundamentals and related issues of Earth's climate system, climate variability, and climate change. Develops solid understandings of Earth's climate system framed in the dynamic, Earth system based approach to the science.
- GEOG 315V. World Agriculture and Food Problems** 3 cr.  
Same as AG E 315V.
- GEOG 325V. New Mexico and the American West** 3 cr.  
Examination of the cultural and historical patterns, economic activities and physical characteristics of New Mexico with comparisons made with other western states.
- GEOG 326. U.S. National Parks** 3 cr.  
Exploration of origins, landscapes, ecosystems, management issues, and conflicts in U.S. National Parks. The regional geography of the United States as seen through the creation and protection of biologically and culturally significant lands.
- GEOG 328V. Geography of Latin America** 3 cr.  
Explores Latin America from a geographical perspective, integrating environmental, cultural and socioeconomic factors in an in-depth study of the development of the region and contemporary issues and challenges facing the region.
- GEOG 331V. Europe** 3 cr.  
Focus on the cultural continent of Europe, from Iceland to the Ural Mountains and from Archangel, Russia., to Malta. An overview of climate, geology, topography, soils, and vegetation, as well as a brief historical geography of the continent. Current environmental, social, and political issues of Europe will be discussed. A series of regional studies is also offered.
- GEOG 351. Fundamentals of Biogeography** 3 cr.  
Floristic and physiognomic characteristics of the Earth's major ecosystems and their distributions; ecosystem dynamics, evolution, and physical environment; field and laboratory techniques including remote sensing.
- GEOG 353. Geomorphology** 3 cr. (2+3P)  
Examination of the principle theories and concepts of landform creation; exploration of the roles of structure, processes, climate, and time in the formation of various types of landforms. Prerequisite(s): GEOL 111G and GEOG 111G. Restricted to: Main campus only. Crosslisted with: GEOG 553
- GEOG 357. Climatology** 3 cr.  
Elements and controls of climate. Energy and hydrologic cycles, general circulation, climate classification, distribution of climate types, microscale effects, applications. Prerequisites: MATH 120. Same as AGRO 357, SOIL 357.
- GEOG 361V. Economic Geography** 3 cr.  
The geographic relationships of supply and demand resources, population, and transportation. Site analysis and decision-making in different economic systems and cultures and how these decisions affect the environment and the location of economic activities.
- GEOG 363V. Cultural Geography** 3 cr.  
The world's diverse cultural landscapes. Emphasis on the connections between social, political, religious, and agricultural patterns and the impact of societies on the natural environment.
- GEOG 365V. Urban Geography** 3 cr.  
The global historical development of urban areas, as well as the changing functions of today's cities. A comparison between the North American city system and cities in Europe, Asia, and South America, including the development of the city form, the internal spatial organization of commercial, residential, and industrial areas, and socio-economic and political factors.
- GEOG 373. Introduction to Remote Sensing** 3 cr. (3+2P)  
Introduction to the theory, techniques, and applications of remote sensing. Topics include electromagnetic radiation; remote sensing systems; remote sensing of the biosphere, hydrosphere, atmosphere, lithosphere, and cultural landscapes. Course includes lectures and also labs focused on the basic analysis and interpretation of remote sensing products. Prerequisite(s): GEOG 381.
- GEOG 374V. The European City: History and Culture** 3 cr.  
Course presents the rich, complex history and cultures of European cities from ancient to modern times, linking these cities to crucial issues in European history.
- GEOG 381. Cartography and Geographic Information Systems** 4 cr. (3+3P)  
Design and construction of thematic maps. Introduction to cartographic principles in lecture. Emphasis on map-making using GIS software in the labs. Prerequisite(s): GEOG 281.
- GEOG 382. Aerial Photo Interpretation** 3 cr. (2+3P)  
Introduction to use and analysis of aerial photographs. Emphasis on physical features and cultural patterns.
- GEOG 401. Internship/Co-op** 1-3 cr.  
Provides an opportunity whereby students work with a local, regional, or federal agency, or private sector firm on applied geographic work, under the supervision of an agency or firm professional and a geography faculty member. Consent of instructor required.
- GEOG 441. GIS Design** 3 cr.  
A critical aspect of GIS is its ability to provide the necessary products within the organization within which it is implemented. This is an in-depth analysis of currently accepted planning methodologies designed to create a successful implementation of GIS inside organizations. Prerequisite(s): GEOG 481 or consent of instructor.
- GEOG 452. Landscape Ecology** 3 cr.  
Analysis of the structure, function and change of natural and anthropogenic landscapes. Patches, corridors, matrix and network, spatial organization, landscape dynamics, and role of disturbance in overall functioning of landscapes. Role of landscape heter. Prerequisite(s): Either GEOG 351, BIOL 301, or other basic ecology course or consent of instructor.
- GEOG 455. Southwestern Environments** 3 cr.  
The U.S. Southwest: physical and human geography, coupled human-environment interactions, causes and consequences of environmental issues, and implications for sustainable development. Prerequisite(s): GEOG 281, physical geography class, human geography class, or equivalents, or consent of instructor.
- GEOG 461. U.S. Mexico Border Development** 3 cr.  
Analysis of the socioeconomic development of the U.S.-Mexican border region, including perspectives and issues from both sides of the border. Opportunities for individualized study of contemporary issues in the region. Prerequisite: GEOG 361 or consent of instructor.
- GEOG 467. Transportation Geography** 3 cr.  
Nature and distribution of land, air and water transport facilities and their importance in regional development. Prerequisite: GEOG 120G or consent of instructor.
- GEOG 472. Soil Morphology and Classification** 4 cr. (2+2P)  
Same as SOIL 472.



- GEOG 473. Advanced Remote Sensing** 4 cr. (3+3P)  
Introduction to advanced topics in digital image processing, analysis, interpretation, and visualization. Topics include geometric and radiometric correction, image enhancement, image classification, change detection, and accuracy assessment. Lectures focus on the discussion of advanced remote sensing concepts, techniques, and applications; labs are applications-oriented. Prerequisite(s): GEOG 373, Intro to Remote Sensing or consent of instructor.
- GEOG 481. Fundamentals of Geographic Information Systems** 4 cr. (3+3P)  
Fundamentals of computer-based systems which organize, analyze, and present spatially referenced data. Prerequisite: GEOG 281 or GEOG 381.
- GEOG 482. Geodatabase Design** 3 cr. (2+3P)  
A practical introduction to designing geodatabases. The course takes you through the eleven steps of geodatabase design divided into four stages: thematic characterization; developing the database elements, relationships and properties; capture and collection; and finally, implementation and documentation. Prerequisite(s): GEOG 481 or consent of instructor.
- GEOG 483. Field Explorations in Geography** 3 cr. (6P)  
A field-based class where students complete exercises in physical, human, and environmental geography in the Southwest. May be offered as a two-week intensive class where students are away from Las Cruces and camping; or may be offered with weekend field trips depending on the instructor. A lab fee for transportation and other expenses is required. Prerequisite(s): Geography 281, physical geography class, human geography class, or equivalents, or consent of instructor.
- GEOG 487. GIS & T Capstone** 3 cr. (2+3P)  
A capstone course in geospatial analysis. Demonstration of competence in the use of geospatial tools, techniques, and concepts for the solution of applied geographic problems. Software may change from semester to semester. Prerequisite(s): GEOG 373 and GEOG 481.
- GEOG 491. Special Topics** 1-3 cr.  
Specific subjects to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits. Consent of instructor required.
- GEOG 492. GIS Applications and Modeling** 3 cr.  
Group oriented class in which students conduct an applied research project in GIScience application or modeling area of choice and conduct focused library research. Prerequisite(s): GEOG 481 or consent of instructor.
- GEOG 493. Special Problem Research** 1-3 cr.  
For advanced and exceptional students. Research, and preparation of a paper in some phase of geography. A maximum of 6 credits may be earned. Consent of instructor required.
- GEOG 495. Directed Readings** 1-3 cr.  
Individual study through selected readings. A maximum of 6 credits may be earned. Consent of instructor required.
- GEOL- GEOLOGY**
- GEOL 111G. Survey of Geology** 4 cr. (3+3P)  
Covers the fundamental principles of physical geology, including the origin of minerals and rocks, geologic time, rock deformation, and plate tectonics.
- GEOL 212G. The Dynamic Earth** 4 cr. (3+3P)  
Introduction to earth systems. Geology and the solid earth, geologic time and earth history, water and the world oceans, atmosphere and weather, the solar system. Community Colleges only.
- GEOL 216. Geology of the Colorado Plateau** 3 cr.  
Seminar style investigation of the geologic history of the Colorado Plateau, culminating in a 10-day field trip to choice geologic localities in Arizona and Utah. Preference given to freshmen and sophomores. Prerequisite: GEOL 111G.
- GEOL 220. Special Topics** 1-3 cr.  
Specific subjects to be announced in the Schedule of Classes. Community Colleges only. May be repeated for a maximum of 12 credits.
- GEOL 250. Hiking the Geology of Southern NM** 3 cr. (1+6P)  
A hiking exploration of the geologic history of southern New Mexico. Moderately strenuous Saturday hikes accompanied by background lecture material. Prerequisite(s): GEOL 111G or HON 219G. Restricted to: Main campus only.
- GEOL 295. Environmental Geology** 3 cr.  
Earth processes that affect humans and their works, properties of rocks and soils, use and application of environmental geologic data.
- GEOL 305V. Fossils and the Evolution of Life** 3 cr.  
Examination of the fossil record within the context of geologic time. Special emphasis on critical evaluation of possible terrestrial and extra-terrestrial causes for the evolution of plants and animals and for periods of mass extinction.
- GEOL 310. Mineralogy** 3 cr. (2+3P)  
Crystallography and the physical and chemical aspects of minerals. Prerequisite(s): GEOL 111G and CHEM 111.
- GEOL 312. Optical Mineralogy** 3 cr. (2+3P)  
Principles of optical mineralogy as applied to the identification and characterization of rock-forming minerals. Prerequisite or Corequisite: GEOL 310.
- GEOL 315V. The Geology of National Parks** 3 cr.  
The geologic features in national parks of the United States and the processes responsible for their formation.
- GEOL 320. Special Topics** 1-3 cr.  
Specific subjects to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits.
- GEOL 335V. Earthquakes, Volcanoes, Hurricanes, and Floods: The Role of Natural Hazards in Civ Past and Present** 3 cr.  
This class will provide an introduction to geologic hazards and natural disasters, their effects on society, and the attempts at preparation and mitigation for these events. Hazards to be covered include earthquakes, volcanic eruptions, floods, landslides, hurricanes, tsunamis, and others. There will be one Saturday field trip during the semester.
- GEOL 353. Geomorphology** 3 cr.  
Same as GEOG 353.
- GEOL 360. General Geochemistry** 3 cr.  
The chemistry of the earth and its parts, with emphasis on geochemical systems and cycles, distribution of the elements, and mineral equilibria. Prerequisite(s): CHEM 111 or CHEM 110G. Crosslisted with: CHEM 360
- GEOL 399. Igneous and Metamorphic Petrology** 3 cr. (2+3P)  
Mineralogical composition, classification, and genesis of igneous and metamorphic rocks. Prerequisite(s): GEOL 312 for geology majors, GEOL 310 for majors other than geology.
- GEOL 420. Stratigraphy and Sedimentology** 3 cr. (2+3P)  
Identification and interpretation of sedimentary rocks with emphasis on classification, deposition, and stratal geometry. Prerequisite: GEOL 310.
- GEOL 424. Soil Chemistry** 3 cr.  
Same as SOIL 424, CHEM 424.
- GEOL 441. Tutorial Geology** 2 cr. (1+3P)  
Participation in teaching lower-division laboratories and conducting tutorial sessions. Prerequisite: junior or above standing and nomination by faculty. May be repeated for a total of 4 credits.
- GEOL 449. The Geological Profession** 1 cr.  
Investigation of graduate school and employment opportunities, writing the resume, conduct at interviews, and ethics of the profession. For graduating seniors only.
- GEOL 452. Geohydrology** 3 cr.  
Origin, occurrence, and movement of fluids in porous media assessment of aquifer characteristics. Development and conservation of ground water resources, design of well fields. Prerequisite(s): GEOL 111G and C E 231. Crosslisted with: C E 452 and E S 452
- GEOL 454. Advanced Stratigraphic Concepts** 3 cr.  
Geometry and origin of strata, emphasizing techniques for correlation and interpretation. Prerequisite: GEOL 420 or equivalent.
- GEOL 455. Applied Geology** 1-3 cr.  
Geological research and field projects for the advanced student. May be repeated for a total of 6 credits. Prerequisite: consent of instructor.
- GEOL 465. Isotope Geochemistry** 3 cr.  
Geochemistry of stable and radiogenic isotopes and its application to a wide range of problems in the earth and planetary sciences. Prerequisite(s): CHEM 112G, GEOL 360, GEOL 399.
- GEOL 470. Structural Geology** 3 cr. (2+3P)  
Deformation of rocks of the earth. Prerequisite: GEOL 310
- GEOL 474. Ground Water Geology** 3 cr.  
Steady-state and transient ground-water flow in porous media: effects of lithology on hydrologic characteristics of aquifers and confining units; Darcy's Law applied to steady-state flow; distribution of hydraulic head in confined and unconfined aquifers; recharge and discharge in regional and local ground-water flow systems; ground-water surface-water interaction; steady-state and transient flow to wells; aquifer testing and evaluation of safe yields. Introduction to numerical flow modeling. Prerequisite: GEOL 111G.

- GEOL 475. Geology of Mineral Resources 3 cr. (2+3P)  
Introduction to ore deposits and industrial rocks and minerals; genesis, mining methods, estimation of reserves, exploration, and economic aspects of selected commodities. Prerequisite: GEOL 399.
- GEOL 476. Marine Paleocology 3 cr. (2+3P)  
Paleontological and sediment logic analysis of the fossil marine record to reconstruct past ecosystems by interpreting the life habits of past organisms, their association in communities and their relationship to the environments in which they lived.
- GEOL 477. Special Problems 1-3 cr.  
Selected advanced topics of current interest or importance. May be repeated for a total of 6 credits. Prerequisite: consent of instructor.
- GEOL 478. Petroleum Geology 3 cr. (2+3P)  
Stratigraphy, tectonics, and sedimentation in relation to occurrence of and exploration for hydrocarbons. Prerequisite: GEOL 420.
- GEOL 479. Environmental Soil Chemistry 3 cr.  
Same as SOIL 479.
- GEOL 480. Seminar 1-3 cr.  
Supervised study of a subject not covered by regular courses. For organized group meetings treating selected advanced topics. Prerequisite: consent of instructor. May be repeated for a maximum of 6 credits.
- GEOL 490. Field Geology 3 cr. (9P)  
Mapping, instrumentation, and interpretation of geology in the field. Prerequisites: either GEOL 420 and GEOL 470.
- GEOL 491. Tectonic Evolution of North America 3 cr.  
Current ideas regarding the plate-tectonic evolution of North America from Archean through Holocene time, emphasizing the use of regional stratigraphy and structural geology to interpret mountain building, magmatism, and basin development. Prerequisites: GEOL 111G, GEOL 399, GEOL 420 and GEOL 470.
- GEOL 495. Geology Field Camp 4 cr. (12P)  
Three week intensive summer course. Geologic mapping in a site-based setting, emphasizing spatial relations, cross-section construction, and preparation of geologic reports. Prerequisite: GEOL 490
- GEOL 499. Senior Thesis 1-3 cr.  
Writing a formal paper describing original geologic research conducted under supervision of a faculty advisor. Prerequisite: consent of instructor. Restricted to majors.
- GER- GERMAN**
- GER 111. Elementary German I 4 cr.  
German for beginners. Stress on speaking skills.
- GER 112. Elementary German II 4 cr.  
German for beginners and students with one year of high school German. Stress on speaking skills. Prerequisite: C or better in GER 111.
- GER 211. Intermediate German I 3 cr.  
Speaking, reading, and writing. Prerequisite: C or better in GER 112.
- GER 212. Intermediate German II 3 cr.  
Speaking, reading, and writing. Prerequisite: C or better in GER 211.
- GER 305. Topics in German Culture 3 cr.  
Group study of selected topics focusing on German-language culture (including Austria and Switzerland). Topics identified in the Schedule of Classes. Prerequisite: GER 212 or high school German III. May be repeated for a maximum of 6 credits.
- GER 313. Intermediate Composition and Grammar 3 cr.  
Exercises in written German with emphasis on advanced grammatical features. Preparation for Zertifikat Deutsch. Prerequisite: GER 212, or high school German 3, or consent of instructor.
- GER 325. German Conversation I 3 cr.  
Spoken German with emphasis on everyday situations. Prerequisite: GER 212, or high school German 3, or consent of instructor.
- GER 331. German Lyric Poetry 3 cr.  
Seminar. Lyric poetry from Minnesang to contemporary poetry. Prerequisite: either GER 313, GER 325, or GER 343, or consent of instructor.
- GER 333V. German Culture through Cinema 3 cr.  
Events, values, and issues in German culture as reflected in motion pictures made in Germany between 1913 and 1990. Familiarization with cinema as art form. Taught in English. Does not satisfy Arts and Sciences second language requirement.
- GER 341. German Folklore and Culture 3 cr.  
Customs, traditions, mythology, folk literature and art; everyday culture of German-speaking Europe. Prerequisite: GER 212 or equivalent or consent of instructor.
- GER 343. Building Reading Skills 3 cr.  
Practice in improving reading skills with a wide variety of texts. Discussion in German also enhances oral skills. Prerequisite: GER 212 or high school German 3, or consent of instructor.
- GER 362. German Studies 3 cr.  
Geography, demography, institutions, lifestyles, popular attitudes, issues, and problems in modern Germany. Special emphasis on events leading to the 1990 unification.
- GER 363. German Studies: Austria and Switzerland 3 cr.  
Geography, demography, institutions, life-styles, popular attitudes, issues, and problems in modern Austria and Switzerland, with historical overview.
- GER 391. History of the German Language 3 cr.  
Seminar. Development of the German language from its origins. Prerequisite: any course above GER 212 or consent of instructor.
- GER 399. Intermediate Independent Study in German 1-3 cr.  
Supervised independent study projects in GER for majors and minors with good time-management skills. Consent of instructor required. Prerequisite(s): GER 212 plus consent of instructor.
- GER 410. Practicum in Conversational German 1-3 cr.  
Intensive oral practice as language monitor. Prerequisite: two upper division German courses or consent of instructor. May be repeated for a maximum of 6 credits.
- GER 413. Advanced Composition and Grammar 3 cr.  
Exercises in written German with emphasis on stylistic features. Prerequisite: GER 313 or consent of instructor.
- GER 449. Special Problems 1-3 cr.  
Directed reading for graduate students in their specific fields to satisfy language requirements for master's or doctoral programs. May be repeated for a maximum of 6 credits.
- GER 451. Special Topics in German 1-3 cr.  
Selected topics in German language, literature, or area studies, announced in Schedule of Classes. May be repeated for credit when topic changes. Prerequisite: consent of instructor. May be repeated for a maximum of 12 credits.
- GER 453. Independent Studies in German 1-3 cr.  
Individualized, self-paced projects, for advanced students. Prerequisite: consent of instructor. May be repeated for a maximum of 6 credits.
- GER 466. Theatre Workshop in German 3 cr.  
Seminar. Practical exercise in dramatic interpretation, also play production. Prerequisite: GER 212 or consent of instructor. May be repeated for a total of 6 credits.
- GERO- GERONTOLOGY**
- GERO 415. Introduction to Gerontology 3 cr.  
Social, psychological, and physiological aspects of aging, with an interdisciplinary emphasis on health promotion. Demographic characteristics of the aging population. Taught with MPH 515.
- GERO 450. Health Promotion for the Older Adult 3 cr.  
Common health concerns and lifestyle issues relevant to older adults. Facts about the content area, health behaviors, and practices to promote health and prevent disease; program development strategies applicable to a variety of settings. Same as MPH 557.
- GERO 451. Aging and Public Policy 3 cr.  
Exploration of public policies relating to elders, historical development, current status and trends in public policy for this age group. Impact of political behavior of elders on policy making and implementing processes.
- GERO 456. Biological Aspects of Aging 3 cr.  
Aging, the developmental process of the body determined by cellular changes influenced by lifestyle, genetics, and environment. Investigates these changes, how health promotion influences them, and when they are considered a disease. Same as MPH 556.
- GERO 493. Adulthood and Aging 3 cr.  
Normal transitions in later life; those occurring from 40 years of age to the end of life are discussed. Changes in interpersonal relationships and adaptations commonly made by individuals and meeting those alterations are presented through research findings, case studies, and autobiographies. Same as MPH 593.
- GERO 494. Aging in a Multicultural Society 3 cr.  
Study and comparison of aging in the southwestern multicultural society with emphasis on health care. Same as MPH 594.

GERO 495. International Aging and Intellectual Disabilities 3 cr.  
Graduate course for policy planners and staff trainers working in the field of Intellectual Disabilities. The course content will be relevant to service provision in developed and developing countries with emphasis on diverse cultures. The consequences of increased longevity for both social and health provision and family careers are covered.

GERO 498. Independent Study 1-3 cr.  
Individual studies with prior approval of health science department head. Prerequisite: senior standing and consent of instructor. May be repeated for maximum of 6 credits.

### GOVT- GOVERNMENT

GOVT 100G. American National Government 3 cr.  
U.S. constitutional system; legislative, executive and judicial processes; popular and group influence.

GOVT 101. Introductory Government Seminar 1 cr.  
Introduction to the government major. Designed to assist students in planning college experience and preparing for professional or advanced educational opportunities upon graduation. Graded: S/U. Restricted to: Main campus only.

GOVT 110G. Introduction to Political Science 3 cr.  
This class covers fundamental concepts such as justice, sovereignty and power; political theories and ideologies; and government systems that range from democratic to authoritarian.

GOVT 150G. American Political Issues 3 cr.  
Major contemporary problems of American society and their political implications.

GOVT 160G. International Political Issues 3 cr.  
Current developments and issues in world politics.

GOVT 201. Special Topics 3 cr.  
Specific topics to be announced in Schedule of Classes. Community Colleges only. May be repeated for a maximum of 12 credits.

GOVT 300. Political Research Skills 3 cr.  
Introduction to methods of political analysis and fundamentals of research design, including basic methods for the collection and analysis of political data.

GOVT 308. Prepping for Law School Admissions Test 1 cr.  
This workshop helps students prepare to take the Law School Admissions Test and apply for law school. Graded: S/U.

GOVT 313. Model United Nations 3 cr.  
Issues related to the United Nations and international law/organizations through simulations, discussions and research projects. Prerequisites: GPA of 2.5 or better and consent of instructor.

GOVT 314. Advanced Model UN 3 cr.  
Advanced topics, research and preparation for Model United Nations activities. Consent of instructor required. Prerequisite(s): GOVT 313, minimum GPA 2.5. Restricted to: Main campus only.

GOVT 315. Politics and Film 3 cr.  
Exploration of political themes, images, and representation in film and other media. May be repeated for a maximum of 6 credits under different subtitles.

GOVT 320. Domestic Policy 3 cr.  
The course examines how U.S. public policy is made, including the players, politics, issues and power critical to the policy process. An interactive class that bridges theory and political action. Restricted to: Main campus only.

GOVT 321. Topics in Public Policy 3 cr.  
Course examines issues in public policy. May be repeated under different subtitles.

GOVT 324. Environmental Policy 3 cr.  
This introductory course explores environmental policy issues. Students study perspectives of policy-makers, political activists and policy analysts, and apply policy models to solve pressing environmental problems. Focus may be on U.S. or global concerns.

GOVT 325. Education Policy and Politics 3 cr.  
Overview of current pressing policy issues and political debates on education in the U.S., including school choice, vouchers, accountability, and affirmative action. Multiple topics and perspectives covered, with political economy as the main approach.

GOVT 330. Introduction to Public Administration 3 cr.  
What is public administration? Course examines public service, focusing on federal and state government. Issues include management and leadership, personnel, bureaucratic politics, organizational theory, personnel, budgeting and administrative law. Restricted to: Main campus only.

GOVT 331. Special Topics in Public Administration 3 cr.  
Special topics in public administration. May be repeated for a maximum of 6 credits under different subtitles.

GOVT 335. Management of Nonprofit Organizations 3 cr.  
This course provides an overview of a range of nonprofit management concerns and practices. Students will be challenged to assess their own theories of nonprofit accountability and excellence, while confronting critical issues facing the sector. Activities are designed to expand the management skills of students by offering analytical tools and knowledge, and providing opportunities to test the application of these skills.

GOVT 340. American State and Local Government 3 cr.  
Development, structure, functions, and contemporary problems.

GOVT 341. Special Topics: American Politics 3 cr.  
Course examines contemporary issues and trends in American government and politics. May be repeated under different subtitles.

GOVT 343. Congress and the Legislative Process 3 cr.  
This class reviews the history, structure, membership, operation, power and culture of the American Congress. Restricted to: Main campus only.

GOVT 344. The American Presidency 3 cr.  
A comprehensive overview of the U.S. presidency, including powers, electoral politics, decision-making styles, domestic and foreign policy, and relations with Congress, courts, media and interest groups.

GOVT 345. The Supreme Court 3 cr.  
This class studies the history and operation of the Supreme Court, as well as landmark cases that have shaped American government and the Court.

GOVT 346. New Mexico Government and Politics 3 cr.  
Political and governmental institutions in the state of New Mexico.

GOVT 348. Political Parties and Interest Groups 3 cr.  
Organization, principles, and functions of political parties and interest groups in the U.S.

GOVT 350. Special Topics in American Government 3 cr.  
Special topics in American government. May be repeated for a maximum of 6 credits under different subtitles.

GOVT 351. Campaigns and Elections 3 cr.  
Dynamics of campaigns and electoral politics, and their relationship to the formulation of public policy.

GOVT 352. Campaign Strategies and Techniques 3 cr.  
Emphasis on the practice of political campaigns, including targeting, media, polling, and other campaign techniques and strategies.

GOVT 353. Women, Politics and Administration 3 cr.  
An examination of women's participation in U.S. electoral politics as voters, candidates, and officeholders; political activism in issue-based movements and strategies for affecting public policy; leadership as administrators and managers in public service agencies. Also explores the influence of feminism in changing women's roles socially, legally, and politically. Crosslisted with: W S 453

GOVT 354. American Indian Politics 3 cr.  
Introduction to American Indian tribal governments, politics, policy, and administration; historical and contemporary leadership of Indian Nations; and the history and current status of American Indian-U.S. relations. Students learn about Native peoples' cultural responses, forms of resistance, and adaptations to colonization. Restricted to: Main campus only.

GOVT 360. International Relations 3 cr.  
Introduction to world politics; fundamental international issues and problems.

GOVT 361. Special Topics in International Relations 3 cr.  
Course examines contemporary issues in international relations. May be repeated under different subtitles.

GOVT 362. International Political Economy 3 cr.  
Political factors in international economic relations; theories of political economy.

GOVT 363. Inter-American Relations 3 cr.  
Relations between nations of the Western Hemisphere; the inter-American system; emerging major powers; the role of the U.S.

GOVT 364. National Security Policy 3 cr.  
Evolution of U.S. national security policy; problems in defining national interests and related allocation of resources.



GOVT 366. American Foreign Policy	3 cr.	GOVT 391. Constitutional Law	3 cr.
Formulation, content and rationale of current foreign policies of the U.S.		The class explores the reasoning and political context of the Supreme Court cases that define the distribution and limits of governmental powers and duties under the U.S. Constitution, including separation of powers and federalism. Restricted to: Main campus only.	
GOVT 367. Terrorism	3 cr.	GOVT 392. Civil Liberties	3 cr.
An introductory course using an interdisciplinary framework to explore definitions, historical roots, contemporary manifestations and future trends in political terrorism.		The course examines the reasoning and political context of major Supreme Court cases defining constitutional rights of free speech, religious liberty, free press and criminal procedural rights.	
GOVT 368. Fundamentals of Intelligence Studies	3 cr.	GOVT 394. Judicial Process	3 cr.
Introductory survey of the major theoretical approaches and substantive issues in intelligence studies.		Class examines the structure, function and purpose of the American judicial system. Restricted to: Main campus only.	
GOVT 369. Nationalism, Ethnic Cleansing, and Genocide in 20th Century	3 cr.	GOVT 395. Law and Society	3 cr.
Same as HIST 377.		Class critically explores the development, role and impact of law on our society, covering different theories of law, conceptions of justice and the values they reflect. These models are then applied to current legal issues. Not a class in legal reasoning, but one where students evaluate their beliefs about the legal system. Restricted to: Main campus only.	
GOVT 370. Comparative Politics	3 cr.	GOVT 396. International Law	3 cr.
Introduction to functional approaches to comparing similarities and differences among political systems.		Nature, growth, and scope of law of nations, rights and obligations of states in peace and war, current issues.	
GOVT 371. Latin American Politics	3 cr.	GOVT 397. Law and Sex	3 cr.
Basic structure of politics in major Latin American countries; role of groups, including church, labor, and parties.		Sex-based discrimination and the impact of constitutional and statutory provisions and their judicial interpretations and executive orders and implementations. Same as W S 397.	
GOVT 372. Special Topics in Comparative Politics	3 cr.	GOVT 399. New Mexico Law	3 cr.
Course examines contemporary issues in comparative politics. May be repeated under different subtitles. Restricted to: Main campus only.		New Mexico legal system, court structure and procedures; legal terms and concepts; constitutional, criminal, mass media, historical and social issues relating to New Mexico. Same as C J 399, HIST 399, JOUR 399, and SOC 399.	
GOVT 373. Resistance Movements in World Politics	3 cr.	GOVT 405. Directed Readings	1-3 cr.
Research on violent and non-violent resistance movements around the world. Focus on their origins, demands, ideologies, strategies and impacts in the post-Cold War context of economic globalization, US military power and new geopolitical dynamics.		Individualized readings. Course subtitled. May be repeated for a maximum of 6 credits. Graded S/U. Consent of instructor required.	
GOVT 374V. The European City: History and Culture	3 cr.	GOVT 406. Independent Study	1-3 cr.
Course presents the rich, complex history and cultures of European cities from ancient to modern times, lining these cities to crucial issues in European history.		Individualized research. Course subtitled. May be repeated for a maximum of 6 credits. Consent of instructor required.	
GOVT 375. Self Determination and Minority Rights	3 cr.	GOVT 407. Workshop	1-6 cr.
Comparative study of ethnic relations, minority rights, identity, citizenship and political representation.		Focus on skills related to careers in government and political science. Specific topics announced in the Schedule of Classes; may be repeated for a total of 6 credits. Only 3 credits apply toward government major or minor requirements. Graded S/U.	
GOVT 378. U.S.-Mexico Border Politics	3 cr.	GOVT 410. Internship	1-12 cr.
Comparative perspectives applied to the problems of the U.S.-Mexican border.		Hands-on experience working with public agencies, political campaigns, elected officials & non-profits. May be repeated for a maximum of 12 credits; only 3 credits apply toward government major or minor requirements. Consent of instructor required. Graded: S/U. Prerequisite(s): Completion of 12 government credits, 2.5 GPA, junior and above standing.	
GOVT 379. Mexican Politics	3 cr.	GOVT 411. Service Learning Experience	3 cr.
Introduction to the politics and government of contemporary Mexico.		Experiential learning through a community service project. May be subtitled to reflect service activity. Prerequisites: completion of 12 government credits, junior or above standing, and consent of instructor. May be repeated for a total of 6 credits; only 3 credits apply toward government major or minor requirements.	
GOVT 380V. Contemporary World Political Ideologies	3 cr.	GOVT 412. Practicum in Student Government	3 cr.
Introduction to the prevailing political ideologies in the modern world and the ways in which modern nations operating under one or more of these ideologies attempt to answer fundamental questions about the allocation and distribution of rights, liberties, and other things of value. In addition, the course work and discussions attempt to address recent political, social, and economic events in various areas of the world.		Research of issues in student government. Consent of instructor required. Graded: S/U. Prerequisite(s): Student government participation, completion of 12 GOVT credits, junior or senior standing.	
GOVT 381. Special Topics in Political Theory	3 cr.	GOVT 415. Senior Seminar	1 cr.
Course explores special topics or theorists in political theory. May be repeated under different subtitles.		Review and integration of political skills acquired in the Government Department. Students will prepare a professional portfolio for entry into the workforce, advanced study, and civic participation. Graded S/U.	
GOVT 382. Classical Political Thought	3 cr.	GOVT 465. Peru: From Incas to Inca Kola	3 cr.
Analysis of main currents in political thought from ancient Greece and Rome to the high Middle Ages.		Explores issues of cultural and national identity in Peru from the Incas to the present, focusing on the modern period. Themes include indigenous resistance and adaptation to colonial rule, nationalism, militarism, terrorism, globalization, and the drug trade. Same as ANTH 459 and HIST 459.	
GOVT 383. Modern Political Thought	3 cr.	GOVT 468. Rebels, Guerrillas, and Terrorists in Modern Latin America	3 cr.
Historical and theoretical examination of political ideas and ideologies from Machiavelli to Nietzsche. Topics include liberalism, conservatism, romanticism, communism, and Nihilism.		Explores history of rebels in Latin America. Examines guerilla struggles attaining national dimension. Focus on modern events, including Peru's Shining Path, Columbia's FARC, and Mexico's Zapatistas. Same as HIST 331.	
GOVT 384. Contemporary Political Thought	3 cr.		
Examination of major currents in political theory from early twentieth century to the present. Includes positivism, fascism, neo-liberalism, and varieties of postmodernism.			
GOVT 385. American Political Thought	3 cr.		
Introduction to major American thinkers and historical currents from colonial time to the present.			
GOVT 386. Political Economy	3 cr.		
Analysis of political ideas concerning the role of the state in management of national economies, in both European and American contexts.			
GOVT 387. Religion and Politics	3 cr.		
Survey of major points of interaction between politics and religion in the U.S., using theoretical, historical, and institutional analysis.			
GOVT 390. Special Topics in Public Law	3 cr.		
Course examines various issues in public law. May be repeated under different subtitles.			



- GOVT 469. Globalization 3 cr.  
Analysis of the globalization process. Covers theories of globalization, the global economy, political globalization, global culture, transnational social movements, transnational migration and world labor market, global cities, and local-global linkages. Same as SOC 489.
- GOVT 473. Germany 3 cr.  
Political, social, and cultural developments from the eighteenth century to the present, with emphasis on the Nazi era. Same as HIST 383.
- GOVT 474. European Politics 3 cr.  
Politics in European countries, European integration, post-communist states, regionalism and border politics.
- GOVT 476. Modern Eastern Europe 3 cr.  
Addresses the diversity of Eastern European political and cultural experiences from the end of the 19th century to the present day. Same as HIST 380.
- GOVT 493. Mass Communications Law 3 cr.  
Same as JOUR 493 and COMM 493.
- GPHY- GEOPHYSICS**
- GPHY 340V. Planet Earth 3 cr.  
Formation and evolution of the Earth. Plate tectonics, volcanoes and earthquakes. Role of geological processes in the origin and evolution of life. Uniqueness of the Earth in the solar system.
- GPHY 450. Selected Topics 1-3 cr.  
Readings, discussions, lectures or laboratory studies of selected areas of geophysics. Prerequisite: consent of instructor. May be repeated for a maximum of 12 credits.
- HIST- HISTORY**
- HIST 101G. Roots of Modern Europe 3 cr.  
Economic, social, political, and cultural development from earliest times to about 1700.
- HIST 102G. Modern Europe 3 cr.  
Economic, social, political, and cultural development from 1700 to the present.
- HIST 110G. Making History 3 cr.  
General introduction to history: how historians carry out research and develop interpretations about the past.
- HIST 111G. Global History to 1500 3 cr.  
Global economic, social, political and cultural developments to 1500. Thematic approach.
- HIST 112G. Global History Since 1500 3 cr.  
Global economic, social, political and cultural developments since 1500. Thematic approach.
- HIST 201G. Introduction to Early American History 3 cr.  
History of the United States to 1877, with varying emphasis on social, political, economic, diplomatic, and cultural development.
- HIST 202G. Introduction to Recent American History 3 cr.  
History of the United States since 1877, with varying emphasis on social, political, economic, diplomatic, and cultural development.
- HIST 211G. East Asia to 1600 3 cr.  
History of China, Korea, Vietnam, and Japan from earliest times through the sixteenth century. Emphasis on cultural and political developments and their social and economic contexts, and the interaction between East Asian societies.
- HIST 212G. East Asia since 1600 3 cr.  
History of China, Korea, Vietnam, and Japan from the sixteenth through the twentieth centuries. Emphasis on internal development of each country, as well as the social and political impact of Western Imperialism, and the emergence of each country's unique version of modern society.
- HIST 221G. Islamic Civilizations to 1800 3 cr.  
History of Islamic civilizations to 1800.
- HIST 222G. Islamic Civilizations since 1800 3 cr.  
History of Islamic civilizations since 1800.
- HIST 261. New Mexico History 3 cr.  
Economic, political, and social development of New Mexico from exploration to modern times. Community Colleges only.
- HIST 269. Special Topics 1-3 cr.  
Specific subjects to be announced in the Schedule of Classes. Community Colleges only. May be repeated for a maximum of 12 credits.
- HIST 275. Introduction to History and Philosophy of Science 3 cr.  
Introduction to the history and philosophy of science. Community Colleges only.
- HIST 300. Special Topics 1-9 cr.  
Specific subjects to be announced in the Schedule of Classes. May be repeated for a maximum of 18 credits.
- HIST 301V. Origins of Modern Science 3 cr.  
The development of scientific thought from Aristotle to Newton. Emphasis will be placed on the social and cultural context of science. ENGL 111G recommended.
- HIST 302V. Science in Modern Society 3 cr.  
The social impact of scientific activity and thought from Newton to the present. The growth of modern scientific institutions; the political and social context of modern science. ENGL 111G recommended.
- HIST 303V. History of Technology 3 cr.  
The development of technology, its impact on society and culture, and the social and ideological responses to the technological change from earliest times to the present. ENGL 111G recommended.
- HIST 305. Twentieth Century Science 3 cr.  
The development of science after 1900. Emphasis will be placed on the "second scientific revolution" in physics and on the emergence of genetics and molecular biology.
- HIST 306. European Thought and Culture 3 cr.  
Culture and ideas in Europe from 1600 to the present, from the Scientific Revolution to Postmodernism, including ideas and their expression in science, art, literature, and politics.
- HIST 307. History of the Book in the West: From Scroll to Scrolling 3 cr.  
Describes the production of written works from papyrus scrolls through codex manuscripts and printed books to digital texts. Looks at how technology has influenced the transmission and presentation of texts and the way these factors affect how people perceive the texts. Studies the physical evidence books provide about their own histories. Crosslisted with: LIB 307
- HIST 309. American Indian History I 3 cr.  
Cultural and social change from before contact with Europeans to 1840.
- HIST 310. American Indian History II 3 cr.  
Federal Indian policy, tribal histories, and the emergence of Pan-Indianism from 1840 to present.
- HIST 311V. Colonial Latin America 3 cr.  
Social, political, and economic development from Columbus to the Wars of Independence. Research paper required.
- HIST 312V. Modern Latin America 3 cr.  
Post-revolutionary developments in the nineteenth and twentieth centuries; the role of Latin America in world affairs and the Inter-American system. Research paper required.
- HIST 313. Making the American West 3 cr.  
Development of the American West from 1803 to 1900 with emphasis on conquest, federal and corporate roles in western development, environmental change, and the Mythic West. Includes meetings outside regular class time to view feature-length films.
- HIST 314. American Southwest to 1900 3 cr.  
Territory included in Texas and the Mexican Cession from its earliest exploration to the close of the nineteenth century.
- HIST 315. From the Wild West to the Atomic West 3 cr.  
Explores the transformation of the West with particular attention to the roles of race, class, gender and culture. Includes meetings outside regular class time to view feature-length films.
- HIST 316. History of Women in the American West 3 cr.  
Experiences and interactions among Native American, Spanish/Mexican, immigrant, and Anglo-American women in the American West from 1500 to the present. Same as WS 316.
- HIST 317. U.S. Foreign Relations to 1919 3 cr.  
Foreign relations from the colonial origins through World War I. Emphasis on diplomacy of the Founding Fathers, continental expansion, and the United States' rise to world power.
- HIST 318. U.S. Foreign Relations since 1919 3 cr.  
Foreign relations from the conclusion of World War I to the present. Emphasis on isolationism, World War II, Soviet-American Relations, Vietnam, and new challenges in a multi-polar world.
- HIST 319. American Urban History 3 cr.  
Social, cultural, economic, and political development of metropolitan communities in the United States from the colonial period to the present.
- HIST 321. History of Korea 3 cr.  
Social, political, and cultural history of Korea from earliest times through twentieth century. Emphasis on the interaction between Korean traditions and influences from China and the West.

- HIST 323. Cultural History of Later Imperial China 3 cr.  
Covers art and literature of China from the Tang Dynasty (618-907) through the eighteenth century. Developments in cultural theory and practice are traced in the context of the social and economic changes fostering an understanding of Chinese cultural history and its legacy in East Asia today.
- HIST 324. History of Modern Terrorism in the Middle East and Europe 3 cr.  
Historical analysis of the motives, methods, organization, and actions of terrorist groups.
- HIST 325. History of the Arab-Israeli Conflict 3 cr.  
History of the causes, course, and consequences of the Arab-Israeli conflict.
- HIST 327. History of the Modern Middle East 3 cr.  
Addresses medieval and early modern periods in the Middle East, including the rise of Islam, the Crusades, the modern Middle East (including North Africa and South Asia, especially Afghanistan and Pakistan) from the nineteenth century to the present; the Palestinian uprising and the war against terrorism.
- HIST 328. History of Iran 3 cr.  
History of ancient, medieval, and especially modern Iran, including the Islamic Republic.
- HIST 329. History of Egypt 3 cr.  
History of Egypt from ancient times to the present.
- HIST 330V. Introduction to Religious Studies 3 cr.  
Provides an overview of old and new methods and theories for the study of religion. Exposure to the ways groups of people in diverse cultural systems construct and change their religious traditions to serve practical and meaningful ends. Same as SOC 330V and ANTH 330V.
- HIST 331. Rebels, Guerrillas, and Terrorists in Modern Latin America 3 cr.  
Explores history of rebels in Latin America. Examines guerilla struggles attaining national dimension. Focus on modern events, including Peru's Shining Path, Colombia's FARC, and Mexico's Zapatistas. Same as GOVT 468.
- HIST 333. Renaissance and Reformation 3 cr.  
Art, thought, and religious, political, and social conflicts in the age of Michelangelo, Machiavelli, and Martin Luther. Prerequisite: HIST 101 or consent of instructor.
- HIST 334. Art and Life in Renaissance Italy 3 cr.  
Examines how Italian Renaissance textual and visual culture offered Europe new ways of seeing and portraying itself, 1350-1550. Topics include: Florence, Venice, Rome, Leonardo, Michelangelo, Titian, humanism, the Medici, and republican and courtly culture. Same as ART 444.
- HIST 335. History of Christianity 3 cr.  
Emphasizes perceptions about Jesus, the changing nature and role of the Bible, especially the new testament, interactions of religion and government, issues of faith and culture, and development of modern Christianity. Same as ANTH 335 and SOC 335.
- HIST 336. Medieval History to 1000 3 cr.  
Emphasis on social and cultural history.
- HIST 337. Medieval History 1000-1400 3 cr.  
Emphasis on social and cultural history.
- HIST 338. World War I 3 cr.  
Cultural, social, and intellectual background and impact of World War I. Military and diplomatic events of the war. Consequences of the war.
- HIST 339. World War II 3 cr.  
Social, cultural and political aspects of World War II, in addition to traditional military events. Emphasis on U.S. involvement.
- HIST 340. American Economic History 3 cr.  
The rise of big business and organized labor, increasing price rigidities, and growing government intervention. Same as ECON 340.
- HIST 341. American Agricultural History 3 cr.  
From Colonial times to the present, with emphasis upon historical development, politics, and legislation, especially in recent times.
- HIST 342. Early American Military History 3 cr.  
Emphasis on American wars up to and including the Civil War, and on the factors contributing to the development of modern military systems.
- HIST 343. Recent American Military History 3 cr.  
Emphasis on American wars since the Civil War, and on factors contributing to the development of modern military systems.
- HIST 344. Colonial America 3 cr.  
Traces social, economic, environmental, and political dimensions of European settlement of North America.
- HIST 345. Revolutionary America 1763-1800 3 cr.  
Development and consequences of the American Revolution, Articles of Confederation, Constitution, and Federalist Period.
- HIST 346. The Jacksonian Era 1800-1840 3 cr.  
Jeffersonian period, War of 1812. Social, political, and economic history of the Jacksonian era.
- HIST 347. Civil War Era 1840-1877 3 cr.  
Mexican-American War, development of secession, American Civil War, Reconstruction.
- HIST 348. Progressive United States, 1877-1920 3 cr.  
Gilded Age through the end of World War I, with emphasis on the Populist movement, progressive reform, the impacts of industrialization, imperialist expansion, and World War I.
- HIST 349. The New Deal, 1920-1960 3 cr.  
Roaring Twenties through the Eisenhower presidency, with emphasis on the Great Depression, Roosevelt's New Deal, World War II, the origins of the Cold War, and the impacts of the postwar baby boom.
- HIST 350. Recent United States, 1960-Present 3 cr.  
Kennedy's New Frontier to the present, with emphasis on the Civil Rights movement, the Great Society program, the Vietnam War, the Reagan Revolution, and new social and economic challenges.
- HIST 353. Colonial Mexico 3 cr.  
Covers major social, political, economic and cultural topics including pre-Columbian civilizations, early European incursions and indigenous responses, economic systems and labor exploitation, religion and spirituality, and resistance to colonial rule. Sixteenth to nineteenth centuries.
- HIST 354. Modern Mexico 3 cr.  
Examines interactions of peasants, women, indigenous peoples, and economically/politically dominant groups within the Mexican state from 1810 to the present. Assesses the contentious relationship between Mexico and the United States, focusing on the Mexican-U.S. border.
- HIST 355V. The American West in Popular Culture 4 cr.  
Explores changing images of the U.S. West in popular culture from the colonial period to the present, including literature, captivity narratives, popular travel narratives, dime novels, nature writing, Wild West shows, tourism, film, television, and advertising.
- HIST 356. The Mexican Revolution 3 cr.  
Examines the history of modern Mexico through the lens of the Mexican Revolution, 1910-1920. Course covers military, political, social, cultural and economic developments that shaped Mexico during and after the Revolution.
- HIST 357. Central America 3 cr.  
Economic, social, and political development of the five Central American countries with emphasis on recent events.
- HIST 358. Argentina 3 cr.  
Economic, social, and political development of Argentina since independence; its influence on international affairs.
- HIST 359V. Latin America and the United States: Uneasy Neighbors 3 cr.  
Covers U.S.- Latin American relations during the nineteenth and twentieth centuries. Assesses interactions between the United States and other nations in the Americas, surveys U.S. interventions in the region, and appraises social challenges facing the Americas as a whole. Research paper required.
- HIST 360. History of United States Intelligence 3 cr.  
U.S. intelligence from George Washington to twentieth century U.S. espionage and counterintelligence agencies, including the FBI, the NSA/CSS, spy satellites, and the CIA.
- HIST 361. Afro-American History I 3 cr.  
African background, slave trade, slavery; Civil War and Reconstruction; free blacks in a white society to about 1900.
- HIST 362. Afro-American History II 3 cr.  
Black Americans in the United States in the twentieth century; segregation; black leaders, organizations, methods and goals; white reaction; the struggle for equality.
- HIST 363. Nineteenth Century Europe 3 cr.  
Rise of Europe to a position of economic and political dominance in the world from the French Revolution to World War I.
- HIST 364. Twentieth Century Europe 3 cr.  
Course will address the foremost events, personalities, developments and ideas which marked the European continent during the twentieth century

- HIST 365. Cold War Europe 3 cr.  
Course deals with the Cold War's bipolar international climate as well as the individual paths charted by each European nation in response. Events, leaders, thinkers, ideas and developments will all be featured.
- HIST 366V. British Imperialism 3 cr.  
Survey of the activities of the British empire from the 16th century through the 20th century, with emphasis on Ireland, North America and India. Assesses the impact of imperial activities on British domestic politics, culture and social history, and the process and impact of decolonization.
- HIST 367. Mexican-Americans in the United States 3 cr.  
Emigration; reception; impact upon society, politics, economics, and culture.
- HIST 368. Teaching History 3 cr.  
Philosophical and practical issues of teaching history are explored. Designed to help prospective teachers at all levels clarify their views about studying history. A variety of pedagogical strategies for teaching history are explored.
- HIST 369. History of Latinos in the United States 3 cr.  
Development of Latino communities since 1500 in what is today the U.S. Emphasis on 1846 to present, and on Mexican Americans, Puerto Ricans, and Cuban Americans. Major themes: race, colonialism, immigration, nationalism, class, culture, gender, and politics.
- HIST 371. Ancient Greece 3 cr.  
Social, cultural, and political history of Greece from the Minoan to Hellenistic periods.
- HIST 372. The Roman World 3 cr.  
Republic and Empire; Rome as a world power; institutional, cultural, and intellectual contributions; decline and fall.
- HIST 373. Islam and the West: Cultural Contacts, Conflicts and Exchanges 3 cr.  
Examines interactions, encounters and cross-fertilization between the Islamic world and the West from the seventh to the twenty-first centuries. Course includes origins of Islam, relationships between Islam, Judaism, and Christianity, and concludes with the post 9/11 present. Prerequisite: C or higher in HIST 221G or HIST 222 or HIST 461; or enrollment in one of these courses at the same time as enrollment in HIST 373.
- HIST 374V. The European City: History and Culture 3 cr.  
Course presents the rich, complex history and cultures of European cities from ancient to modern times, linking these cities to crucial issues in European history. Crosslisted with HON 374V, GEOG 374V, GOVT 374V.
- HIST 376. Great Battles That Shaped Europe 3 cr.  
Considers the most significant battles in the West from the 13th century BCE (Troy) to the 16th century CE (Spanish Armada).
- HIST 377. Nationalism, Ethnic Cleansing, and Genocide in 20th Century Europe 3 cr.  
Key political and social theories of nationalism, the nation, and the nation-state; origins and development of nationalism; current examples of nationalism and ethnic cleansing. Same as GOVT 369.
- HIST 379. History of Italy: Rome to the Twentieth Century 3 cr.  
Analyses the history of Italy from the Etruscan period (600 BCE) through the Roman Empire and Renaissance period to the 21st century CE.
- HIST 380. Modern Eastern Europe 3 cr.  
Addresses the diversity of Eastern European political and cultural experiences from the end of the 19th century to the present day. Same as GOVT 476.
- HIST 381V. Early Russia 3 cr.  
Domestic affairs and international relations from the rise of the Kievan State to the mid-nineteenth century.
- HIST 382V. Modern Russia 3 cr.  
Domestic policies and foreign relations from mid-nineteenth century to the present with emphasis on the Soviet period.
- HIST 383. Germany 3 cr.  
Political, social, and cultural developments from the eighteenth century to the present, with emphasis on the Nazi era. Same as GOVT 473.
- HIST 384. Imperial Russia 3 cr.  
Political, social and cultural history of Russia from 1700 to 1917.
- HIST 385. The Spanish Borderlands 3 cr.  
Examines historical relationships between Native American and Hispanic peoples in northern Mexico, American Southwest and other border regions from 1500s to 1821.
- HIST 386. New Mexico History 3 cr.  
Economic, political and social development of New Mexico from exploration to modern times.
- HIST 387. Spain 3 cr.  
From pre-Roman times to the modern era.
- HIST 388. Women in Europe I 3 cr.  
The roles of women and constructions of gender in medieval and early modern Europe, 1100 - 1550. Examines how conceptions of gender and sexuality both shaped and were shaped by political and social transformations in European history. Same as WS 388.
- HIST 389. Women in Europe II 3 cr.  
The history of women and gender in modern Europe, 1550 to the present. Examines how conceptions of gender and sexuality both shaped and were shaped by political and social transformations in European history. Restricted to: Main campus only. Crosslisted with: W S 389
- HIST 390V. The Holocaust 3 cr.  
The attack upon European Jews by Adolf Hitler and the National Socialist Party in Germany and occupied Europe from his accession to chancellor in 1933 until the end of the Third Reich in 1945.
- HIST 391. Twentieth Century World History 3 cr.  
Includes globalization; imperialism; World Wars I and II and the changing roles of Europe: the Cold War; decolonization; the rise and collapse of Communism; new social and intellectual movements; and the growing roles of East Asia, India, Latin America, Africa and the Middle East. Thematic examples.
- HIST 392. Tudor-Stuart England, 1485-1715 3 cr.  
British history from 1485-1715, including the development of the monarchy and Parliament, the Protestant Reformation, the English Civil War and Restoration, and culture and society.
- HIST 393. Eighteenth-Century Britain 3 cr.  
Initiative and supremacy of Parliament: Cromwell and the Revolution; the Restoration; the Glorious Revolution.
- HIST 394. Victorian and Edwardian Britain, 1815-1914 3 cr.  
Evolution of constitutional monarchy; industrialism and imperialism; repose and reform; increased influence of an intellectual elite and the emergence of the Labor Party.
- HIST 395. From Rule Britannia to Cool Britannia: Twentieth-Century Britain 3 cr.  
Edwardian Era, World War I; Reconversion, the 1926 General Strike; the Great Depression and appeasement; Churchill and the war against Nazi Germany; nationalization and the Welfare State.
- HIST 397. Introduction to Public History 3 cr.  
Surveys how historians do history in museums, archives, government agencies, and in communities. Hands-on experience provides students a better understanding of history and how historians work outside of the classroom. Seminar project required.
- HIST 398. Historians and History 3 cr.  
General historiography and philosophy of history; historical methodology, research, and writing; bibliographical aids and their uses. Prerequisite(s): C or higher grade in ENGL 311G.
- HIST 399. New Mexico Law 3 cr.  
Same as GOVT 399, C J 399, JOUR 399, and SOC 399.
- HIST 400. Special Topics 1-9 cr.  
Specific subjects to be announced in the Schedule of Classes. May be repeated for a maximum of 18 credits.
- HIST 401. Environmental History 3 cr.  
Seminar discusses how the natural environment and people have shaped each other, and how people have perceived and imagined the natural world. May focus upon one specific topic or area. Course includes a field trip outside regular class times.
- HIST 402. Special Topics in European History 3 cr.  
Special topics in European history to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits.
- HIST 403. Special Topics in Middle Eastern History 3 cr.  
Special topics in Middle Eastern history to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits.
- HIST 404. Special Topics in Asian History 3 cr.  
Special topics in Asian history to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits.
- HIST 405. Special Topics in Latin American History 3 cr.  
Special topics in Latin American history to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits.
- HIST 406. Special Topics in United States History 3 cr.  
Special topics in United States history to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits.

- HIST 407. American Social and Cultural History to 1900 3 cr.  
Life and thought in the United States from colonial times to the end of the nineteenth century.
- HIST 408. Cultures of Africa 3 cr.  
Explores the rich history and cultural diversity of the continent of Africa. The course first examines the historical processes that have shaped modern Africa, including the evolution of modern humans in Africa, the origins of agriculture and pastoralism, the formation of indigenous African states, the slave trade, and European colonialism. The course also looks at contemporary African societies, including hunter-gatherer, pastoral, and farming/fishing peoples. In addition, contemporary issues facing modern Africa such as famine and agricultural policy, the status of women, and environmental changes such as deforestation are discussed. Crosslisted with: ANTH 404
- HIST 410. New Mexico History for Educators 3 cr.  
Course provides content and innovative techniques for teachers of New Mexico history. Covers pre-contact Native American history through Spanish Colonial and Mexican periods through the twentieth century.
- HIST 413. Native American History 3 cr.  
Seminar explores the history of Native Americans, including tribal conflicts, interactions with Europeans and Euro-Americans, land loss, degradation of natural resources, federal Indian policy, pan-Indian movements, cultural resistance and revitalization, and modern tribal economies.
- HIST 415. Western American History 3 cr.  
Seminar explores the development of the American West with emphasis on conquest, federal and corporate impact on the West, environmental changes, and the mythic West. Includes extra class meetings to view feature-length films.
- HIST 420. History of Women and Gender 3 cr.  
Seminar discusses the position of women and the roles of both sexes in a specific historical and geographic setting. Course emphasizes the ways in which women and gender were both central to and fundamentally affected by all political and social transformations in history.
- HIST 424. History of Art, Thought and Literature 3 cr.  
Seminar discusses a variety of artistic and literary expressions in their historical contexts and focuses on the ways in which cultural forms both reflect and construct the broader historical trends that surround them.
- HIST 425. History of Magic and Witchcraft in Medieval and Renaissance Europe 3 cr.  
Examines history of popular and scientific beliefs about magic and witchcraft in medieval and early modern Europe. Includes origins of occult Western sciences; Arabic sources of medieval magic; the occult sciences in scholasticism; witchcraft and scholasticism; witchcraft and medieval theology, witch hunts of the 16th and 17th centuries; and the decline of belief in magic and witchcraft. Emphasis on boundaries that defined and separated magic, science, and religion in Western thought from late antiquity through the Scientific Revolution. Prerequisite: HIST 101G
- HIST 426. United States Social and Cultural History to 1877 3 cr.  
Seminar discussions focus on methodological approaches to United States social and cultural history to 1877 in specific historical and geographical contexts. Includes such themes as historical demography, family structure, class formation, community and popular culture.
- HIST 427. Labor History 3 cr.  
Seminar discussions explore labor and working-class history, including such topics as pre-industrial and industrial labor, slavery, debt peonage, indentured servitude, and housework. May explore the history of labor organization, working class culture and leisure activities, and responses to labor issues by the state.
- HIST 428. History of Terrorism in Modern Europe and the Middle East 3 cr.  
Analyzes causes, methods, and consequences of terrorism in Europe and the Middle East from the Reign of Terror in the French Revolution to Al-Qaeda, Hamas and Hezbollah in the contemporary Middle East and beyond.
- HIST 429. Plague, Plunder, and Preservation: American Environmental 3 cr.  
Explores how the natural environment influenced human actions, decisions, and cultural and social development from the colonial period to the present; how people reshaped and reordered the natural environment; and how people perceived or imagined the natural world.
- HIST 431. History of Race and Ethnicity 3 cr.  
Seminar explores the historical social construction of race and ethnicity, and their relationship to other systems of social difference such as class and gender. Course will examine popular and academic theories of race and ethnicity as well as historical concrete effects of racial and ethnic differences in society.
- HIST 432. United States Labor History to 1877 3 cr.  
Seminar discussions explore United States labor and working-class history to 1877, including such topics as pre-industrial and industrial labor, slavery, debt peonage, indentured servitude, and housework. May explore the history of labor organization, working-class culture and leisure activities, and responses to labor issues by the state.
- HIST 433. United States Labor History Since 1877 3 cr.  
Seminar discussions explore United States labor and working-class history since 1877, including such topics as industrial labor, debt peonage, and housework. May explore the history of labor organization, working-class culture and leisure activities, and responses to labor issues by the state.
- HIST 434. Urban History 3 cr.  
Seminar discusses cities as complex catalysts for cultural, political, and scientific development, both within cities themselves and more broadly for their nations and regions. Course deals with such topics as the relationship between social organization and physical space; city development, morphology and dynamics; and the cultural and intellectual history of cities.
- HIST 435. History of War and Revolution 3 cr.  
Seminar covers historical dynamics of violent social, political, and economic transitions. May focus upon a particular war or upheaval, such as World War II or the French Revolution, or may examine more generic characteristics of conflict and radical change across many historical examples. Extensive readings in scholarly literature. Research projects relating to specific course contents.
- HIST 436. Nations and Nationalism 3 cr.  
Seminar examines major theories of nationalism from the nineteenth century to the twenty-first century. Course includes nationalist case studies, from liberal nationalist state-building to ethnic cleansing in the Balkans.
- HIST 437. Empire and Colonialism 3 cr.  
Seminar covers the rise and fall of imperial and colonial systems. May examine the history of the British Empire, the rise of Russian and Chinese imperial orders in Central Asia, Spanish colonies in the New World, or other specific case studies, or may consider comparative patterns and narratives of imperial, colonial and post-colonial experiences. Readings include primary and secondary sources. Individual research projects required.
- HIST 438. Antiquity and Modernity 3 cr.  
Seminar explores links between earlier and more recent historical periods. Examples may include the Renaissance rediscovery of ancient Rome or the early modern Chinese reassessment of its classical Confucian heritage. Readings include ancient sources and the modern reception of such works, and the scholarly assessment of these processes. Individual research projects required in areas of student interests.
- HIST 439. The Scientific Revolution 3 cr.  
Seminar discussions explore scientific thought and practice and technological change in specific historical contexts. Focus will be on the impact of science and technology on society, the development of scientific institutions, and the political and cultural context of science and technology.
- HIST 440. History of Religion and Spirituality 3 cr.  
Seminar examines religion and spirituality in a variety of historical settings. Includes formal religious institutions, popular religion, and heterodoxy. Introduces students to competing theories of religion.
- HIST 443. The Cold War in Latin America 3 cr.  
Seminar discusses Latin American political history during the Cold War. Course focuses on how Latin Americans (individuals, parties, militaries, states) acted in an increasingly politicized arena defined by growing United States concerns over Cuban and Soviet influence in the area.
- HIST 445. History and Memory 3 cr.  
Seminar examines the interplay of memory and history. Explores how various nations and people construct the narratives of their past.
- HIST 448. Nuclear Nation 3 cr.  
Explores post-World War II history and the impact atomic energy has had on the United States and the world.
- HIST 449. Readings 1-3 cr.  
Individual study of selected readings and problems. Prerequisite: consent of instructor. May be repeated for a maximum of 6 credits.
- HIST 453. Cuba: Colony to Castro 3 cr.  
Economic, social, and political development of Cuba and other colonies and nations in the Caribbean with emphasis on recent events.
- HIST 455. Brazil 3 cr.  
Economic, social, and political development of Brazil since independence. The influence of Brazil in the international arena.



- HIST 459. Peru: From Incas to Inca Kola 3 cr.  
Explores issues of cultural and national identity in Peru from the Incas to the present, focusing on the modern period. Themes include indigenous resistance and adaptation to colonial rule, nationalism, militarism, terrorism, globalization, and the drug trade. Same as ANTH 459 and GOVT 465.
- HIST 471. China through the Ming Dynasty 3 cr.  
History of China from origins to Ming dynasty, (1368-1644). Cultural and political development with emphasis on social and economic contexts and long term trends.
- HIST 472. China in the Modern World 3 cr.  
History of China from seventeenth through twentieth centuries. Rise and fall of the Manchu Qing dynasty, internal dynamics of social and political change in nineteenth and twentieth centuries, impact of Western Imperialism, and development of the Peoples Republic since 1949.
- HIST 473. History of Japan 3 cr.  
History of Japan through twentieth century. Political and cultural developments and their social and economic contexts. Chinese influence on early Japan, rise of Samurai and Shogunate, impact of Western Imperialism, and emergence of modern Japan.
- HIST 474. Gender in East Asian History 3 cr.  
Examines the position of women and the social roles of both sexes in traditional China and Japan, and traces the changes taking place in those societies in the course of modernization in the last century and a half. Scholarly literature and works of Chinese and Japanese literature in translation and cinema used. Same as W S 474.
- HIST 475. History of the Global Political Economy 3 cr.  
Traces development of global systems of economic interaction and the rise of European military and political dominance in the 18th and 19th centuries. Emphasis on East and South Asian roles in early modern history, and on challenges to European dominance in the 20th and 21st centuries.
- HIST 479. Oral History 3 cr.  
Oral history through readings, discussions, and interviews. Semester project required that includes an interview and transcript.
- HIST 481. Time Traveling Through New Mexico's Past 3 cr.  
Teaches historians and educators how to make history come alive. Semester project includes role playing characters and activities from a past era with local schools and museums.
- HIST 483. Historic Preservation 3 cr.  
Study of community development, the historic preservation movement, and the built environment. Field project.
- HIST 484. Historical Editing, Theory and Practice 3 cr.  
Readings in historical editing. Projects in editing at the university archives. Includes editing papers and helping to produce a scholarly journal.
- HIST 486. Interpreting Historic Places for the Public 3 cr.  
Explores historic site interpretation, the scholarship and philosophy of historic interpretation, and the nature of heritage interpretation for historic places.
- HIST 489. Projects in History 3 cr.  
Individual projects in history. Prerequisite: consent of instructor. May be repeated for a maximum of 6 credits.

### HIT- HEALTH INFORMATION TECHNOLOGY

- HIT 120. Health Information Introduction to Pharmacology 3 cr.  
Introduction to the principles of pharmacology, including drug terminology; drug origins, forms, and actions; routes of administration; as well as the use of generic name drugs, trade name drugs and categories of drugs to treat multiple and specific body systems.
- HIT 140. Health Information Introduction to Pathophysiology 3 cr.  
Introduction to the nature of disease and its effect on body systems. Disease processes affecting the human body via an integrated approach to specific disease entities will be presented including a review of normal functions of the appropriate body systems. Diseases will be studied in relation to their etiology, pathology, physical signs and symptoms, diagnostic procedures, complications, treatment modalities and prognosis.
- HIT 150. Introduction to Medical Terminology 3 cr.  
The study and understanding of medical terminology as it relates to diseases, their causes and effects, and the terminology used in various medical specialties. Emphasis will be placed on learning the basic elements of medical words, appropriate spelling and use of medical terms, and use of medical abbreviations. Restricted to: Community College campuses only.
- HIT 158. Advanced Medical Terminology 3 cr.  
Builds upon the concepts covered in Introduction to Medical Terminology providing greater understanding of how to properly use and apply medical terminology used in various health fields. Emphasis will be on terminology used in medical records and procedures, medical billing and coding, and medical transcription. Terminology associated with the 11 body system's anatomy and physiology, pathology, diagnostic and therapeutic procedures, pharmacology, and abbreviations will also be introduced. Prerequisite(s): HIT 150. Restricted to: Community College campuses only.
- HIT 221. Cooperative Experience I 1-3 cr.  
Student is employed in an approved work site and is supervised and rated by the employer and instructor. Each requires a specified number of hours of on-the-job work experience. Restricted to HIT and BOT majors. Graded S/U.
- HIT 222. Cooperative Experience II 1-3 cr.  
Continuation of HIT 221. Restricted to HIT and BOT majors. Graded S/U.
- HIT 240. Health Information Quality Management 3 cr.  
Introduction to basic concepts of quality improvement and performance improvement as they apply to health record systems and the health care industry. Quality assessment and improvement standards and requirements of licensing, accrediting fiscal and other regulatory agencies will be presented.
- HIT 248. Medical Coding I 3 cr. (2+2P)  
Comprehensive overview of the fundamentals, coding conventions, and principles of selecting the most appropriate ICD-9-CM and future ICD-10-CM diagnostic and procedure codes. The most recent version of ICD-9-CM and an in depth study of the current Official Coding Guidelines for coding and reporting will be emphasized. Prerequisite(s): BOT 228. Restricted to: Community Colleges only.
- HIT 258. Medical Coding II 3 cr. (2+2P)  
Continuation of Medical Coding I. Comprehensive overview of the coding and reporting guidelines, fundamentals, coding conventions, and principles of selecting the most appropriate CPT and HCPCS procedural codes for all medical specialties. The most recent version of CPT and a continued study of the ICD-9-CM coding conventions and principles will be emphasized. Designed as a medical coding capstone course. Prerequisite(s): HIT 248. Restricted to: Community College campuses only.
- HIT 268. Health Information Systems 3 cr.  
Overview of health data management, work planning, and organization principles; an introduction to health care information systems; and review the fundamentals of information systems for managerial, clinical support, and information systems. Prerequisite(s): BOT 208 and C S 110 or OECS 105. Restricted to: Community Colleges only.

### HL S- HEALTH SCIENCE

- HL S 100. Introduction to Health Science 1 cr.  
An overview of professional career opportunities in the realm of health science as well as the functional roles of practice, education, administration, and research. Some field trips will be required.
- HL S 150G. Personal Health and Wellness 3 cr.  
A holistic and multi-disciplinary approach towards promoting positive lifestyles. Special emphasis is placed on major problems that have greatest significance to personal and community health. Topics to include nutrition, stress management, fitness, aging, sexuality, drug education, and others.
- HL S 275. Foundations of Health Education 3 cr.  
Role and responsibility of the health educator with emphasis on small group dynamics, oral and written communication skills, building community coalitions and an introduction to grant writing. Taught with HL S 375. Cannot receive credit for both HLS 275 and HLS 375. Prerequisite(s): Either HL S 100 or HL S 150G, or consent of instructor.
- HL S 295. Foundations of Public Health, Epidemiology, and Biostatistics 3 cr.  
Principles and major areas of public health, including ecological and total-person concept of health care systems; epidemiological approaches to disease prevention and control; using basic analytical and epidemiological statistics. Taught with HLS 395. May not receive credit for both HLS 295 and HLS 395. Restricted to: Community College campuses only.
- HL S 300. Drugs and Behavior 3 cr.  
A multi-dimensional approach to drugs in society: pharmacology, cultural, legal applications and psychosocial influences on the individual and the environment.
- HL S 301V. Human Sexuality 3 cr.  
Examination of human sexuality from a variety of perspectives: cultural, sociological, physiological and psychological. Issues examined from viewpoints such as gender, individual, family, and professional roles.

- HL S 305V. Global Environmental Health Issues 3 cr.  
Introduction to global environmental health challenges in the 21st century with an emphasis on environmental problems as they affect public health and personal well-being.
- HL S 320. Human Stress Management 3 cr.  
The physiology of stress, stress-related disease processes, and stress reduction through exercise and coping behaviors, and stress reduction techniques. Same as PE P 320.
- HL S 355. Responding to Emergencies 3 cr.  
Concepts of advanced first aid and emergency care. Includes American Red Cross certification.
- HL S 375. Foundations of Community Health Education 3 cr.  
Role and responsibility of the health educator, with emphasis on small-group dynamics, oral and written communication skills, building community coalitions, and an introduction to grant writing. Taught with HL S 275. Cannot receive credit for both HL S 275 and HL S 375. Restricted to: Main campus, Grants campus.
- HL S 380V. Women's Health Issues 3 cr.  
A focus on the unique issues and problems that confront women today and how they affect the health of women.
- HL S 395. Foundations of Public Health 3 cr.  
Principles and major areas of Public Health: ecological concepts and total person concept of health care systems, using basic epidemiological statistics. Taught with HLS 295. May not receive credit for both HLS 295 and HLS 395.
- HL S 450. Epidemiology 3 cr.  
Epidemiologic approaches to disease prevention and control. Factors influencing health status. Restricted to C HL, E S and HNFS majors. Crosslisted with: E S 450
- HL S 451. Biometrics and Health Research 3 cr.  
Critical analysis of community health research and related methodologies. Prerequisite(s): E ST 311G. Restricted to C HL majors.
- HL S 452. Environmental Health 3 cr.  
Introduction to environmental health designed to address public health issues. Prerequisite(s): Junior or Senior standing. Restricted to C HL, HNFS and E S majors. Crosslisted with: E S 454
- HL S 453. Occupational Health 3 cr.  
Identification, control, and prevention of occupational diseases and injuries. Prerequisite(s): Junior or Senior standing. Restricted to C HL and E S majors. Crosslisted with: E S 455
- HL S 454. Environmental Epidemiology 3 cr.  
Covers thematic and research aspects, as well as methodological issues related to environmental health and epidemiology, along with international and national priorities. Prerequisites: HL S 450 and HL S 452.
- HL S 457. Administration of Health Programs 3 cr.  
Covers administrative responsibilities, organizational theory, strategic planning, and systems theory as applied to the administration of a variety of health programs. Prerequisite(s): HL S 395 or HL S 450, or consent of instructor. Restricted to C HL majors.
- HL S 458. Public Health Resources and Policy Analysis 3 cr.  
Covers issues related to U.S.-health policy and allocation of resources. Examination of local, state, and federal public health and health care funding. Assessment of impact of health policy on health education, medical practice, and the workplace. Prerequisite: HL S 457 or consent of instructor. Same as MPH 558.
- HL S 459. Infectious and Noninfectious Disease Prevention 3 cr.  
History, etiology, and prevention of diseases affecting humans. Taught with MPH 559. Prerequisite(s): HL S 395 or HL S 470. Restricted to C HL majors.
- HL S 460. American Indian Health 3 cr.  
Critical health issues facing American Indians in the contemporary world. Course included in the undergraduate American Indian Program minor.
- HL S 461. Health Disparities: Determinants and Interventions 3 cr.  
Investigates: descriptions of health disparities and measurement issues; physical environmental factors, behavioral and emotional variables; impact of aging of the populations, increased racial and ethnic diversity, and technological developments; intervention strategies and evaluation results. Same as MPH 561.
- HL S 462. Hispanic Health Issues 3 cr.  
Cultural differences that aid or hinder communication with Hispanic clients and the application of cross-cultural communication skills. Some field trips may be required. Same as MPH 562.
- HL S 464V. Cross-Cultural Aspects of Health 3 cr.  
An examination of health practices from a variety of cultural perspectives: communication, observation, research, and assimilation. Issues to be addressed will be examined from a number of viewpoints, such as individual, family, community, and professional roles.
- HL S 465. International Health Problems 3 cr.  
Comparison of domestic health programs and problems with those in other parts of the world; emphasis on political parameters and delivery processes. Additional attention is focused on the health issues of the U.S.-Mexico border. Prerequisite: HL S 395 or consent of instructor. Same as MPH 565.
- HL S 466. International Health Practicum 1-3 cr.  
Intensive examination of health practices and beliefs from a cultural perspective. Focus on health structure, index of diseases, morbidity, mortality and epidemiological approaches to planning. Required travel (personal travel, lodging, and related expenses are extra). Same as MPH 566.
- HL S 467. Rural Health Issues 3 cr.  
Comprehensive overview of rural health services with Southwestern United States and New Mexico focus. Prerequisite: HL S 395. Same as MPH 567.
- HL S 468. Coping with Loss and Grief: A Cross-Cultural Perspective 3 cr.  
A cross-cultural perspective to death, loss and grief. Hospice philosophy of caring for the dying will be included. Same as MPH 568.
- HL S 469. U.S.-Mexico Border Health Issues 3 cr.  
Interdisciplinary analysis of the impact of living conditions and health issues of communities along the U.S.-Mexico border and of the strategies and initiatives to address these issues. Problem-based learning, case analysis, lecture, guest speakers, Web-CT based instruction, and field trips. Same as MPH 569.
- HL S 471. Resources and Computer Applications in Health Education 3 cr.  
Health risk appraisal testing and other software applications, information retrieval systems, on-line database literature searches, and other resource identification methodologies. Taught with MPH 571. Prerequisite(s): HL S 395 or consent of instructor. Restricted to C HL majors.
- HL S 473. Health Program Planning 3 cr.  
Planning and development of community health education interventions for behavior change at the individual, family, social network levels of practice. Emphasis on applying program-planning models and designs into a grant-writing project. Restricted to C HL majors.
- HL S 475. Methods of Community Health Education 3 cr.  
Responsibilities of health educators, analysis of social forces affecting health needs, application of wide range of health education methods and instructional media, and program implementation skills. Taught with MPH 575. Prerequisite(s): HL S 275. Restricted to C HL majors.
- HL S 476. Theoretically-Based Interventions 3 cr.  
Identifying and developing interventions to problematic health-related behaviors. Taught with MPH 576. Prerequisite(s): HL S 473. Restricted to C HL majors only.
- HL S 478. Health Program Evaluation and Research 3 cr.  
Covers the application of research and evaluation models for decision-making program and policy development of community health education interventions. Focus on the individual, family, and social network levels of practice. Prerequisite: HL S 473. Restricted to community health majors. Same as MPH 578.
- HL S 480. Communicable Disease Control 3 cr.  
Provide an understanding of the microbiology of pathogenic organisms and a public health approach to the control of disease. Instruction through WebCT. Taught with MPH 580.
- HL S 486. Special Topics 3 cr.  
Specific subjects to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits. Same as MPH 586.
- HL S 490. Independent Study 1-6 cr.  
Individual studies with prior approval of department head. Maximum of 12 credits. Prerequisites: consent of instructor.
- HL S 491. Mind-Body Health and Complementary and Alternative Medicine 3 cr.  
An examination of the multiple dimensions of health from international and cultural views, mind-body interaction, and health promotion assessment and intervention techniques. Same as MPH 591.
- HL S 492. Health Care of the Aged 3 cr.  
General concepts and principles of aging. Introduces students to the aging process and assists them in understanding the various aspects of growing old. Same as MPH 592.

- HL S 496. Community Health Education Field Experience 1-6 cr.  
Senior-standing community health education majors will integrate and apply various concepts related to actual community health education practice. Experience aims to prepare students to integrate the competencies and responsibilities of community health education. Approximately 55 hours at field agency required per credit hour. May be repeated for a maximum of 6 credits. Consent of instructor required. Prerequisite(s): HL S 475 or concurrent enrollment. Corequisite(s): HL S 497. Restricted to C HL majors.
- HL S 497. Senior Seminar in Community Health Education 1 cr.  
Critical analysis of issues in CHE and health care. Readings focus on social, economic, cultural, and political issues as they affect the profession and practice. Emphasis on future, local, national, and international health trends. Prerequisite(s): HL S 475 or consent of instructor. Corequisite(s): HL S 496. Restricted to C HL majors.
- HL S 499. Problems in Health Education 3 cr.  
Provides opportunity for synthesis of program planning, implementation, and evaluation methodologies in the preparation and delivery of health education topics. Some field trips will be required. Prerequisite(s): Either HL S 395, HL S 478, HL S 476, or consent of instructor. Restricted to C HL majors.

### HNDS- HUMAN NUTRITION AND DIET

- HNDS 163. Nutrition for Health 3 cr.  
Nutrition principles and applications to food choices that support health; psychological, economic, and cultural implications of food choices. Open to majors and nonmajors.
- HNDS 201. Seminar 1- Becoming a Nutrition Professional 1 cr.  
Introduction to field experience and to careers and professions in nutrition. Student will complete a series of assignments related to writing a resume, setting short and long term goals, and writing ethics and philosophy statements. They will also complete a segment on developing a portfolio. To enhance potential for success in college, they will complete a series of modules related to using the technology incorporated into college classes, study skills and test taking.
- HNDS 251. Human Nutrition 3 cr.  
Principles of normal nutrition. Relation of nutrition to health. Course contains greater amounts of chemistry and biology than HNDS 163. Open to nonmajors.
- HNDS 300. Special Topics 1-4 cr.  
Specific topics and credits to be announced in the Schedule of Classes. Maximum of 4 credits per semester and a grand total of 9 credits.
- HNDS 350. Nutrition Throughout the Lifecycle 3 cr.  
Relationship of the stages of the human life cycle to changes in nutrient need. Prerequisites: BIOL 254 and (HNDS 163 or HNDS 251), or consent of instructor.
- HNDS 363. Quality Food Production and Service 4 cr. (2+4P)  
Menu planning, preparation, and controls in commercial food operation. Experience and practical application in commercial food service operations. Prerequisite: FSTE 263G or HRTM 263. Same as HRTM 363. Main campus only.
- HNDS 400. Field Experience Commercial Establishments 1-8 cr.  
Experience in the operation and management of commercial food service with cooperating establishments. Practical experience with supervision by resident faculty as well as supervisor at the work site. Performance at work site will be graded in accordance with university standards. Attendance at one weekly class session required. Maximum of 8 credits per semester and a grand total of 8 credits. Prerequisites: overall GPA of at least 2.5 and junior or senior standing or consent of instructor. Restricted to majors.
- HNDS 401. Field Experience- Clinical Dietetics 1-8 cr.  
Experience in various areas of clinical nutrition facilities with emphasis on nutrition care of patients. Practical experience with supervision by resident faculty as well as supervisor at work site. Performance at work site graded in accordance with university standards. May be repeated for a maximum of 8 credits. Consent of instructor required. Prerequisite(s): HNDS 201, overall GPA of 2.5 or higher and junior or senior standing and consent of instructor. Restricted to: Main campus only.
- HNDS 403. Community Nutrition 3 cr.  
Overview of the practice of community nutrition. Includes program planning, needs assessment, program implementation and program evaluation. Role of public and private agencies in nutrition programs that impact on nutrition of individuals and groups in the community. Prerequisite: HNDS 350 or consent of instructor.
- HNDS 404. Maternal, Infant and Child Nutrition 3 cr.  
Nutritional needs and status during pregnancy, infancy, childhood, and adolescence. Applications also made to preschools and day care centers. Prerequisite: HNFS 251 or consent of instructor.
- HNDS 406. Geriatric Nutrition 3 cr.  
Nutritional needs, status, and problems of the elderly. Prerequisite: HNDS 163 OR HNDS 251; and HNDS 350 or consent of instructor.
- HNDS 407. Field Experience Community Nutrition 1-8 cr.  
Experience working with nutritional problems of individual families of all socioeconomic and age levels and with agencies concerned with community nutrition. Practical experience with supervision by resident faculty as well as supervisor at the work site. Performance at work site graded in accordance with university standards. Prerequisites: HNFS 201, overall GPA of at least 2.5 and junior or senior standing or consent of instructor. May be repeated for a maximum of 8 credits. Restricted to majors.
- HNDS 409. Seminar II- Human Nutrition and Food Science Portfolio Development 1 cr.  
Student will put together a portfolio that will include resume, ethics and philosophy statements short and long term goals. It will also include documentation from previous course work related to ethics, written presentation, oral presentation, and research. Students will also complete an application for a supervised practice program, a professional school or a job in the field. Prerequisite: HNDS 201, a GPA of 2.5 or higher and a junior or senior standing.
- HNDS 410. Sports Nutrition 3 cr.  
Role of nutrition in physical performance of competitive and recreational sports participants. Prerequisites: BIOL 254, BCHE 341, and HNDS 251, or consent of instructor.
- HNDS 416. Nutrition and Culture 3 cr.  
Cultural aspects of health, food and nutrition for most ethnic groups of the United States. Traditional versus contemporary food habits addressed along with the history and beliefs that influence such habits.
- HNDS 430. Food Service Organization and Management 3 cr.  
Personnel, financial and general management in institutional and commercial food service operations. Prerequisite: junior/senior standing or consent of instructor.
- HNDS 446. Diet Therapy I 3 cr.  
Special diets and physiological basis for their use. Laws and regulations concerning the practice of dietetics. Prerequisites: BIOL 254, BCHE 341, and HNDS 251, or consent of instructor.
- HNDS 448. Advanced Nutrition 3 cr.  
Application of biochemistry and physiology to nutrition. Prerequisite(s): BIOL 254, BCHE 341, and HNFS 251, or consent of instructor. Restricted to: Main campus only.
- HNDS 449. Diet Therapy II 3 cr.  
Continuation of HNDS 446. Prerequisite: HNDS 446 or consent of instructor.
- HNDS 450. Special Topics 1-4 cr.  
Specific subjects and credits to be announced in the Schedule of Classes. Maximum of 4 credits per semester and a grand total of 9 credits.
- HNDS 492. Special Problems 1-4 cr.  
Individual research study in a selected subject area of family and consumer sciences. Maximum of 4 credits per semester and a total of 8 credits.

### HON- HONORS

- HON 110. Window on the World 1 cr.  
Informal, weekly meetings to discuss works relating to contemporary politics, culture, and the arts. Designed to help students applying for major scholarships and fellowships. Prerequisite: honors eligibility.
- HON 111. Computers and the Information Society 3 cr.  
Evolution and applications of computers; functional overview of hardware and software; concepts of management information systems; economic, ethical, and social implications; programming concepts and introduction to programming on microcomputers; use of microcomputer productivity tools, such as word processing, spreadsheets, and data management software.
- HON 115. Journeys of Discovery 1 cr.  
Weekly conversations among students and a faculty member; organized around a particular subject and a small selection of readings. The seminars illuminate the many paths of discovery explored by the New Mexico State University faculty. Prerequisite(s): Honors eligible.



- HON 200. Cognitive Science 3 cr.  
An interdisciplinary investigation of intelligence. Core disciplines include cognitive psychology, computer science (artificial intelligence), philosophy, and linguistics. Examination of perception, memory, language, reasoning, problem solving, and consciousness from the varying perspectives of the core disciplines.
- HON 203G. Understanding the Science of Human Behavior 3 cr.  
Methods and principles of human behavior are studied within the context of scientific inquiry. Psychology is compared to and contrasted with other sciences, noting commonalities and differences. Recent advances in neuroscience and cognitive science have led to a more interdisciplinary approach to the study of human thought and behavior.
- HON 205G. Life, Energy, and Evolution 4 cr. (3+3P)  
Principles of modern biological science with discussion on the impact of this science in today's world. Selected topics include principles of metabolism, genetics, physiology, evolution, and ecology. Students who pass HON 205G will fulfill the same requirements fulfilled by BIOL 111G and BIOL 111L.
- HON 208G. Music in Time and Space 3 cr.  
Survey of music as it interacts with art, mathematics, science (acoustics), and ideas from exotic cultures through the history of Western civilization.
- HON 210G. The Accidental Mathematician 3 cr.  
The relation between mathematics and our cultural heritage, the role of mathematics in history and the role of history in mathematics, the nature and power of contemporary mathematics, the need of doing mathematics to learn mathematics, the verbalization and reasoning necessary to understand symbolism, and the existence of a large body of interesting writing about mathematics.
- HON 214. Successful Fellowship Writing 1 cr.  
Same as HON 314, for freshmen and sophomores.
- HON 216G. Encounters with Art 3 cr.  
A multicultural examination of the principles and philosophies of the visual arts and the ideas expressed through them.
- HON 218. Women Across Cultures 3 cr.  
Historical and critical examination of women's contributions worldwide with emphasis on the issues of representation that have contributed to exclusion and marginalization of women and their achievements. Restricted to: Main campus only. Crosslisted with: W S 202G
- HON 219G. Earth, Time, and Life 4 cr. (3+3P)  
Covers how the earth's materials form, processes involved in changing the earth's configuration, and extent of people's dependence upon the earth's resources. Includes mineral and energy resources, development of landscapes, environmental problems, evolution of the earth and life forms. May be taken in place of GEOL 111G.
- HON 220G. The World of the Renaissance: Discovering the Modern 3 cr.  
An introduction to the literature and thought of Renaissance Europe. Humanism and the Reformation will be approached through the intensive study of major writers such as Petrarch, Machiavelli, Luther, Erasmus, Montaigne, and Shakespeare.
- HON 221G. Seeking the Way: Spirit and Intellect in Premodern China 3 cr.  
Survey of religious and cultural history of China from earliest times through the eighteenth century. Emphasis on how the Chinese have sought to understand the world around them and their role in it.
- HON 222G. Foundations of Western Culture 3 cr.  
Critical reading of seminal texts relating to the foundations of culture and values in Western civilization, from ancient Greece to about 1700. Focus on the development of concepts of nature, human nature, and the state.
- HON 223. Evolution of Human Sexuality 3 cr.  
Placed in the context of human evolution, sexuality is evaluated from evolutionary and ecological perspectives, and examined in terms of cultural influences on its expression.
- HON 224. God and Nature 3 cr.  
Historical relationship between science and religion (chiefly Christianity) in Western Civilization. The rise of Christianity and its confrontation with pagan philosophy, science and medieval theology, the Reformation and the Scientific Revolution, Darwinism v. Creationism, psychoanalysis and religion.
- HON 225G. History of Ethics 3 cr.  
A critical examination of questions with respect to the meaning and justification of moral judgments and principles. Provides a basic preparation for serious study of contemporary moral problems.
- HON 226G. Puzzles, Paradoxes, and Truth 3 cr.  
Discusses famous paradoxes which lead to philosophical questions about the idea of truth. Considers questions of the nature of mathematics, the nature of knowledge and reasoning, the possibility of omniscience and free will, and the nature of time.
- HON 227G. Plato and the Discovery of Philosophy 3 cr.  
Examines arguments and theories found in the Platonic dialogues with a view to determining the nature and value of philosophy both from Plato's point of view and absolutely.
- HON 228G. Religion and the State 3 cr.  
Moral and political questions that arise in connection with church-state relations, including religious toleration, separation of church and state, the individual's moral duty to ignore religious convictions when performing functions of democratic citizenship, and the extent to which these ideas are embodied in our nation's traditions.
- HON 229G. The New Testament as Literature 3 cr.  
Literature of the New Testament examined from a literary perspective. Emphasis on translation history of the New Testament, generic features of gospel, epistle and apocalypse, precedent literary models, problems of authorship, classification of New Testament texts.
- HON 230G. Bamboo and Silk: The Fabric of Chinese Literature 3 cr.  
Introductory survey of traditional and modern Chinese prose and poetry in translation with emphasis on genre, theme, and social/historical context.
- HON 232G. The Human Mind 3 cr.  
Examination of the current understanding of the intricate relationship between mind and matter, with particular emphasis on the functional organization of the human brain. Evolutionary origins of this functional design and its implications for understanding human emotional and cognitive processes.
- HON 233. Social Problems 3 cr.  
Introduction to contemporary social problems from multiple perspectives. Discussions of definition, impact, and prospective solutions to major social issues, such as crime, drug abuse, social inequality, family, population, environment, and social change.
- HON 234G. The Worlds of Arthur 3 cr.  
Arthurian texts and traditions from medieval chronicle histories to modern novels. Emphasis on both the continuities of the Arthurian tradition and the diversity of genres, media, and cultures that have given expression to the legend.
- HON 235G. The World of Anthropology 3 cr.  
Physical and cultural exploration of humankind as seen through anthropology, human paleontology, and ethnology. Requires excellence in reading, report writing and active class discussion.
- HON 237G. Archaeology: Search for the Past 3 cr.  
A critical evaluation of various approaches to understanding prehistory and history. The methods and theories of legitimate archaeology are contrasted with fantastic claims that invoke extraterrestrials, global catastrophes, transoceanic voyages, and extra-sensory perception.
- HON 239G. Medieval Understandings: Literature and Culture in the Middle Ages 3 cr.  
Intensive, interdisciplinary introduction to the thought and culture of medieval Europe. Core texts will include works by St. Augustine, Marie de France, and Dante, as well as anonymous works such as Sir Gawain and the Green Knight, all supplemented by study of medieval art, architecture, philosophy, and social history.
- HON 240. The Essentials of Relativity 4 cr. (3+3P)  
Essentials of Einstein's theory of relativity and the description of our physical world in four-dimensional space-time.
- HON 241G. Telling American Stories: Society and Culture in Early America 3 cr.  
Survey of social, political and cultural history of British North America and the United States from the colonial period to the Civil War, with an emphasis on the construction of historical narratives. Emphasis on the experiences of men and women of various classes and ethnic backgrounds, and on the way in which historians have interpreted those experiences.
- HON 242G. Claiming an American Past 3 cr.  
Survey of history of the United States in the nineteenth and twentieth centuries, with an emphasis on multicultural social and cultural history. Focus on understanding American history from the point of view of dispossessed, impoverished, and disenfranchised Americans who have fought to claim both their rights as Americans and American past.
- HON 244G. Masterpieces of World Literature 3 cr.  
Introduction to literature through intensive study of masterpieces from a range of cultures. Includes classical and modern works as well as non-Western literature. Genres include poetry, fiction and drama.



- HON 245. Chemistry: Experiments, Laws, and Theories 4 cr. (3+3P)  
Examination of the experimental methods and results, and mental processes used by chemists in our modern understanding of chemistry.
- HON 248G. The Citizen and the State: Great Political Issues 3 cr.  
The fundamental questions of politics: why and how political societies are organized, what values they express, and how well they satisfy those normative goals and the differing conceptions of citizenship, representation, and freedom.
- HON 249G. American Politics in a Changing World 3 cr.  
American politics and policies examined from a historical and global perspective. Philosophical underpinnings of American national government, the structure of government based on that philosophy, and the practical implications of both the philosophical and structural base. How American government influences and is influenced by the world community.
- HON 265G. Principles of Human Communication Honors 3 cr.  
Study and practice of interpersonal, small group, and presentational skills essential to effective social, business, and professional interaction.
- HON 270G. Theatre: Beginnings to Broadway 3 cr.  
Intercultural and historical overview of live theatre production and performance, including history, literature and professionals. Students attend and report on stage productions.
- HON 275G. Spirit and Evolution of Mathematics 3 cr.  
Spirit and development of major branches of mathematics over two millennia through original mathematical sources. Supplemented with related cultural, biographical, and mathematical history, placing mathematics in a broad human context. Prerequisite: Math ACT score of 25 or better, or meet placement for entry into MATH 190G, or consent of instructor. Same as MATH 275G.
- HON 283. From Counting to Coding 3 cr.  
Covers important ideas in elementary number theory and applications. Historical development of number theory emphasized, from the ancient Greeks to the present day. Exciting recent applications, such as the secure transmission of data over the Internet also explored. HON Honors Certificate Program  
Students with at least a 3.2 cumulative grade-point average are eligible to enroll in the following honors courses: HON 301V. Mass Media and Society 3 cr. Introduction to the characteristics of mass media and their integration and impact on a global society.
- HON 301V. Mass Media and Society 3 cr.  
Introduction to the characteristics of mass media and their integration and impact on a global society.
- HON 304V. Dilemmas of War and Peace 3 cr.  
A multi-disciplinary introduction to war, peace, and world order studies. The origins of war and the foundations of peace are explored in the context of a rapidly changing world order.
- HON 305V. Global Environment 3 cr.  
Covers global environmental problems with focus on causes and possible solutions.
- HON 306V. Science, Ethics and Society 3 cr.  
Investigation of the ethical issues related to scientific investigation and the ethical implications of scientific discoveries for society. Emphasis on discussion of case studies about specific ethical issues in science, and readings by both scientists and non-scientists.
- HON 307V. The Political World of Women 3 cr.  
Covers the historical experiences, issues of concern, and political accomplishments of women in various cultures around the world. Study of the political socialization of children, women's past and present participation in the public sphere, and gender-related policy issues from a cross-cultural perspective. Application of feminist theory to a variety of topics.
- HON 308V. Into the Final Frontier 3 cr.  
Exploration of space; a brief review of the history of space flight, the Apollo program, joint U.S.-Soviet space missions, and unstaffed exploration of the planets. Emphasis on knowledge gained through these efforts. Includes new space initiatives.
- HON 310. Languages of the World 3 cr.  
This course provides as a framework an in-depth study of three major fields of theoretical linguistics with the addition of the applied field of second language acquisition. Using this framework, students will develop the ability to apply linguistic knowledge to description and analysis of languages of the world.
- HON 311V. Intercultural Communication 3 cr.  
Exploration of cultural differences from social science perspectives. Topics include the cultural systems of selected societies, as well as ethnocentrism, prejudice, stereotyping, intercultural communication, intercultural relations, and culture shock.
- HON 313. Research and Writing 3 cr.  
Workshop format designed to prepare students for research and writing associated with production of an honors thesis or a major research assignment. Does not count for general education or honors certification credit.
- HON 314. Successful Fellowship Writing 1 cr.  
Provides scholars with hands-on skills to complete proposals for scholarships and fellowships, such as the Truman, Rhodes, Marshall, Goldwater, Udall, and others. Other skills include how to write resumes, develop general research skills, and find grant and foundation sources.
- HON 317V. Cultural Lessons of Nazism 3 cr.  
Examination of the values and cultural manifestations of fascism in the period 1918-45 with multidisciplinary emphasis on European forms of fascism, particularly German Nazism. Course features a survey of literary, dramatic, poetic, cinematic, and artistic treatments of human behavior leading up to fascism, living under fascist rule, and coming to grips with the consequences of war and genocide.
- HON 318V. The World of Cinema 3 cr.  
Appreciation of the art of motion pictures as world-wide medium specific to national cultures. Refinement of cinematic literacy and critical viewing skills. Historical and thematic overview emphasizes collaborative nature of medium in various genres from 1895 to present. Selected films from different periods and different countries. Substantial library research projects.
- HON 319V. The Natural World of Thomas Jefferson 3 cr.  
Thomas Jefferson's impact on agriculture, food, and the ecology both during his lifetime and today.
- HON 320V. Food and Humanity: World in Crisis 3 cr.  
In spite of great advances in food production technology, famines affecting millions continue to occur in the world. Focus on the interrelationship between food production, hunger, and population growth. Covers brief introduction to the culture, history and geography of food production; the dynamics of population growth and the prospects of control; the evolution and structure of the American food system, the politics of food, the development of technology, and the impacts of natural resource and environmental issues.
- HON 321V. Agriculture in an Urban World 3 cr.  
Study of the impact of agriculture on cultural and social systems, with special emphasis on twentieth century urban development.
- HON 322V. Science and Public Policy 3 cr.  
Explores the interaction between science and public policy. Introduces process of science with explicit development of its power and limitations. Statistical inference, cause and effect, and chaotic processes. Economic impacts of public policies and current issues of agricultural and environmental policies.
- HON 323V. Cultural Perspectives on Dress 3 cr.  
Interdisciplinary and cross-cultural perspectives on dress. Focus on diversity and social change, the influence of cultural ideals and standards of appearance, and the evolution of dress in response to society's needs, values, and technology. Cultural perspectives of European, African, North and South American, Pacific, Asian, and Middle Eastern countries.
- HON 324V. Science and the Arts: Theatre and Story 3 cr.  
This course examines present day relations between the sciences and the representation and communication of science, especially in connection with theatre, narrative fiction, and autobiography.
- HON 325V. Contemporary International Literature 3 cr.  
Introduction to contemporary literature through intensive study of works from a range of cultures around the world.
- HON 326V. Art and Mythology 3 cr.  
Mythological figures, past and present, in the visual arts. Through iconographical studies (attributes and symbols), trace the development of visual traditions that evolved from the literary sources of classical Mediterranean mythology.
- HON 327V. The Novel 3 cr.  
Intensive reading of, as well as discussion and writing about, selected major novels from around the world. Emphasizes the history of the novel in order to help students understand the nature and cultural role of the genre.
- HON 330V. Planetary Exploration 3 cr.  
Study of basic scientific goals and engineering constraints associated with planetary exploration missions with consideration of historical context as well as political, economic factors.

- HON 331V. Using a Telescope: Observation, Technology, and Analysis in Astronomical Research 3 cr.  
Through the use of a telescope, students learn how basic research in astronomy combines observation and analysis. Emphasis on the interplay of technology with research and the limitations that observational errors place on interpretation. Includes fundamentals of stellar astronomy.
- HON 335V. Legal Issues in Modern Society 3 cr.  
Case study approach to contemporary legal problems involving environment, consumer protection, international law, corporate responsibility.
- HON 346V. Perspectives on Violence 3 cr.  
Social construction of violence, its impact on especially urban communities, and strategies to disarm it.
- HON 347V. World Dance 3 cr.  
Examination of dance forms from a cross-cultural perspective, focusing on the role of dance in different cultures around the globe. Same as DANC 451V with differential assignments for Honors students.
- HON 348V. Comparative Mythology: Myth, Ritual, and the Life Cycle 3 cr.  
Exploration of the central myths of several religious traditions and investigation of how each, through ritual, has given meaning to key moments in the journey of the individual through life.
- HON 349V. Islam and the West: Cultural Contacts, Conflicts, and Exchanges 3 cr.  
This course examines interactions, encounters and cross-fertilization between the Islamic world and the West from the 7th -21st century. It begins with the origins of Islam and its relationship to Judaism and Christianity and ends in the post 9/11 present, an era some characterize as dominated by a "clash of civilizations."
- HON 350V. Law, Culture, and Conflict 3 cr.  
Introduction to the ways law is used to order human relationships, as well as ways cultural subgroups seek freedom from law. Course seeks to expose many of the underlying value conflicts which give rise to law and which are reflected in the use of law, and how we might begin to differentiate between valid and invalid laws.
- HON 351V. Interpersonal Relations and the Self 3 cr.  
Course explores the ways in which culture influences interpersonal relations and conceptions of the self. The course considers a variety of issues such as: interpersonal communications, self-awareness, self-disclosure, non-verbal behavior, intimacy, love, trust, jealousy, conflict management, self-management, culturally determined views of the self, self-presentation, and self-identity. Differences between the way the issues are viewed by different groups within our society, as well as between societies, will be considered.
- HON 352V. Crime, Justice, and Society 3 cr.  
An overview of crime as a problem across a variety of contemporary societies. History of the criminal justice system; treatment of crime as a public policy issue; political forces impacting the administration of justice in the United States and other nations.
- HON 353V. Justice without Prejudice 3 cr.  
Exploration of central questions about race, ethnicity, and justice. Students will learn to argue persuasively from different perspectives, both orally and in writing.
- HON 355V. Sexuality in Christianity and Islam 3 cr.  
Analyzes and compares Christian and Muslim views on appropriate sexual behavior, the meaning of sin, and the role of the body in spiritual transformation.
- HON 360V. Working in Teams 3 cr.  
How to productively work in teams. Emphasizes skills of effective team members: problem solving and decision making, communicating, managing conflict, developing appropriate norms, leading and influencing others, understanding group roles, etc.
- HON 363. Indigenous Ways 3 cr.  
This course draws from an array of literature across numerous academic disciplines that are written from, about, and for the purpose of providing a way of knowing the world from an Indigenous/Tribal worldview. Students will gain a greater appreciation of the Indigenous paradigm as they approach their respective fields of study, and will learn to recognize the interrelated relationships between the Western Scientific and Indigenous/Tribal worldviews.
- HON 364V. Jewish Literature and Culture 3 cr.  
Prominent works of Jewish literature from Biblical through contemporary periods. Individual research into works of interest to students for presentation to class. Problems of language and culture translation.
- HON 365V. Contemporary African and Caribbean Fiction 3 cr.  
Selected works shaped by colonial and post-colonial experiences in twentieth-century Africa and the Caribbean. Focus on the ongoing search for alternative identities in the form of a decolonized literature and culture.
- HON 366V. The Gothic Imagination 3 cr.  
Introduction to Gothic literature from its beginnings in the late eighteenth century that focuses on the political, psychological, religious, social, and familial values this literary genre explores and questions.
- HON 370V. Design: The Creative Act 3 cr.  
Explores the nature of design and what it means to design in various diverse media. Included are creative efforts in writing, art, music, and technology. Commonalities and differences are considered.
- HON 374V. The European City: History and Culture 3 cr.  
Historical overview of development, growth, and culture of European cities.
- HON 376V. Latin American Women Writers 3 cr.  
Introduction to modern Latin American women writers through intensive study of works from various countries.
- HON 377V. Freedom of Speech and the Law 3 cr.  
Examination of freedom of speech and of press both in the United States and in other societies. Examines a wide range of laws, court rulings and regulatory schemes covering areas such as defamation, sedition, and regulation of broadcasting and advertising.
- HON 378V. Technology and Policy 3 cr.  
Study of the processes through which society sets goals for science and technology, of the allocation of resources needed to achieve these goals, and of the obligations and conflicts that develop as the goals are realized. International comparisons of public policies.
- HON 379V. Literature as Film 3 cr.  
Considers the various results of literary adaptations to the screen. Participants will read literary texts written or translated into English and watch films from various countries as illustrations of this process.
- HON 380V. Comparative Economic Systems 3 cr.  
A global comparison of economic institutions and problems.
- HON 382V. Contemporary Multicultural Women's Literature 3 cr.  
Introduction to contemporary multicultural women's literature through intensive study of works that explore the impact of ethnic or cultural heritage in American society.
- HON 383V. The Sixties: Society, Culture, and Change 3 cr.  
An examination of social, political, and cultural change in the 1960s in the United States and around the world. Topics include the New Left, the Black Panthers, the Civil Rights Movement, the Women's Liberation Movement, as well as major cultural changes in music, drugs, and interpersonal behavior.
- HON 384V. Ethical Decisions in Organizations 3 cr.  
Examines ethical decisions in business, non-profit, and governmental organizations from a managerial perspective. Topics include ethical principles, recognition and application of principle-based ethics, stakeholders in ethical decisions, and analysis of the consistency between organizational decisions and ethical principles.
- HON 385V. Consumers and the Law 3 cr.  
A study of the multidisciplinary synergism of law, societal concerns, business, and ethics of consumer issues and attendant liability and remedies for the domestic and international markets.
- HON 386V. Women in the Economy 3 cr.  
Overview of women's participation in the U.S. and other economies. Main economic problems, including role and wage differences between men and women and why those differences exist. Economic theory, empirical studies, and the government's economic policies as they relate to gender.
- HON 387V. Comparative Perspectives on Women 3 cr.  
The history, antecedents, and consequences of sex and gender systems around the world from the perspective of sociology, anthropology, and psychology.
- HON 388V. Leadership and Society 3 cr.  
Exploration of the multifaceted nature of leadership in modern society through readings and seminar discussion.
- HON 392V. Vietnam: America's Longest War 3 cr.  
Discussions of causes and effects of the Vietnam conflict on the Vietnamese people, American society, and international affairs, with special emphasis on the diplomatic and military role of the United States.
- HON 393V. Community and Public Service 3 cr.  
Same as NURS 383V.

- HON 394V. Southwestern and Border Literature 3 cr.  
Introduction to the culturally diverse literature of the American Southwest and borderlands region. Class analyzes evolution of the Southwest concept and considers degree to which the existence of a borderlands culture is manifest in literature. Prerequisite: honors eligibility.
- HON 400. Honors Thesis 3 cr.  
Independent-study research and writing project to be carried out under the supervision of a faculty member. Prerequisite: consent of instructor.
- HON 410. Honors Internship 3-6 cr.  
Assignments in departments to be supervised by faculty in the area. A cumulative 3.5 GPA is required. May be repeated for a maximum of 12 credits. Graded S/U.
- HON 411V. Great Theorems: The Art of Mathematics 3 cr.  
Same as Math 411G.
- HON 420. Independent Studies 1-3 cr.  
Directed, individual studies and projects. Prerequisites: consent of instructor and honors eligibility.
- HON 421. Special Topics 1-3 cr.  
Special course offerings, with specific titles listed in Schedule of Classes. May be repeated for a maximum of 6 credits.
- HON 422. Directed Research 3 cr.  
Individual research projects supervised by faculty advisors. Consent of instructor required.
- HON 430V. OASIS: Managing a Community Supported Farm 3 cr.  
The OASIS class is an experiential education class in organic production using the Community Supported Agriculture model. Students gain practical experience in planning, planting, caring for, and harvesting organic vegetables, flowers, and herbs. Students will explore food system issues through an individual project, field trips, guest lectures, class discussions, fieldwork, and videos. Same as AGE/HORT330G (fall) and AGE/HORT 331V (spring) with additional assignment for Honors students.
- HON 450V. The Sundt Honors Seminar 3 cr.  
The Sundt Honors Seminar is a unique, experience-based, interdisciplinary seminar developed and taught by the holder of the Sundt Honors Professorship for the year. The subject of the course will vary according to the discipline of the Sundt Professor. The course may include a travel experience related to the seminar topic, hosting of outside specialists, or other unique activity. Open to students by application. Students selected for the course are named Sundt Scholars. Prerequisite(s): ENG 111G or equivalent.

## HORT- HORTICULTURE

- HORT 100G. Introductory Plant Science 4 cr. (3+2P)  
Introduction to the physical, biological, and chemical principles underlying plant growth and development in managed ecosystems. In the laboratory portion of the class, students perform experiments demonstrating the principles covered in lecture. The course uses economic plants and agriculturally relevant ecosystems to demonstrate basic principles. Appropriate for nonscience majors. Same as AGRO 100G.
- HORT 110. Athletic Field and Golf Course Management 1 cr. (2P)  
Survey of proper management of athletic fields, golf courses and other turfgrass stands. Career opportunities in athletic field and golf course management will be discussed. Course includes field trips to local and regional sports turf facilities.
- HORT 111. Freshman Orientation 1 cr.  
Orientation to university life, including available resources and methods to promote success at NMSU. General exposure to fields in agriculture and home economics. Open to all freshmen and transfer students. Graded: S/U. Restricted to: Main campus only.
- HORT 200. Special Topics 1-4 cr.  
Specific subjects and credits as announced. Maximum of 4 credits per semester and a grand total of 9 credits.
- HORT 205. Introduction to Horticulture 3 cr.  
Principles and practices of horticulture. Basic chemical, physical, and biological principles that govern plant growth in different environments. Economics of plant science as related to the field of horticulture. Online course entirely. Intended for non-majors.
- HORT 210. Ornamental Plants I 4 cr. (3+2P)  
Covers identification, botanical characteristics, culture, and landscape uses of woody plants. Emphasis on deciduous trees, native shrubs, and evergreens.
- HORT 211. Ornamental Plants II 4 cr. (3+2P)  
Identification, botanical characteristics, culture, and landscape uses of woody plants. Emphasis on flowering trees, cacti, and members of the pea and rose families.
- HORT 240. Floral Quality Evaluation and Design 2 cr. (1+2P)  
Critical hands-on evaluation of the quality of cut and potted floral and tropical foliage crops, their specific merits and faults, and fundamentals of floral design.
- HORT 241. Floriculture Field Practicum 1 cr.  
Participation as team member in the National Intercollegiate Floral Quality Evaluation and Design Competition. Intensive week-long travel for competition, networking with industry, academia, and floriculture tours. May be repeated for a maximum of 3 credits. Prerequisite(s): HORT 240 or consent of instructor.
- HORT 250. Plant Propagation 3 cr. (2+2P)  
Practical methods of propagating horticultural plants by seed, cuttings, layering, grafting, division and tissue culture. Examination of relevant physiological processes involved with successful plant propagation techniques. Same as AGRO 250.
- HORT 300. Special Topics 1-4 cr.  
Specific subjects as announced in the Schedule of Classes. Maximum of 4 credits per semester and a grand total of 9 credits.
- HORT 301. Introduction to Landscape Horticulture 3 cr.  
Overview of landscape horticulture including identification and use of selected ornamental plant material and the principles of landscape design, construction, and maintenance. Credit cannot be received for both HORT 301 and HORT 307 or HORT 308.
- HORT 302V. Forestry and Society 3 cr.  
Global study of the development and use of forest resources for production of wood, fuel, fiber, and food products. Climatic, edaphic, cultural, and economic influences on forests of the world evaluated. Same as RGSC 302V.
- HORT 305. Principles of Genetics 3 cr.  
Covers fundamental principles of reproduction, variation, and heredity in plants and animals. Prerequisite(s): BIOL 111G, BIOL 211G and either CHEM 111 or CHEM 115. Crosslisted with: AGRO 305, ANSC 305 and BIOL 305
- HORT 307. Landscape Design 3 cr. (1+4P)  
Design elements, the design process, and contemporary planting design used in the design of residential and small commercial landscapes. Basic drafting, drawing, and landscape plan presentation techniques. Prerequisites: HORT 210 or HORT 211 or concurrent enrollment or consent of instructor.
- HORT 310. Medicinal Herbs 3 cr.  
Introduction to ethnobotany, including plant cultivation, extraction methods, and analysis of active chemistries.
- HORT 315. Crop Physiology 3 cr.  
Whole plant physiological processes as related to growth, development, yield, quality and post harvest physiology of crop plants within the environment of the crop community. Prerequisite(s): EPWS/BIOL 314 or consent of instructor. Crosslisted with: AGRO 315
- HORT 330V. Organic Fall Vegetable Production 3 cr.  
Planning, planting, and harvesting vegetable crops following federal guidelines for certified organic production. Emphasis on planting fall crops, harvesting summer crops, and planning summer and fall crops. Sale of produce through community-supported agriculture system. Distribution; financial management; and fertility, weed, disease, and insect-pest evaluation and management. Evaluation of crop production and financial performance from previous spring. Same as AG E 330V. Same as HON 430G with additional coursework for Honors students.
- HORT 331V. Organic Spring Vegetable Production 3 cr.  
Planning, planting, and harvesting vegetable crops following federal guidelines for certified organic production. Emphasis on planting spring and summer crops, harvesting spring crops, and planning summer and fall crops. Sale of produce through community-supported agriculture system. Distribution; financial management; and fertility, weed, disease, and insect-pest evaluation and management. Evaluation of crop production and financial performance from previous fall. Same as AG E 331V. Same as HON 430G with additional coursework for Honors students.
- HORT 350. Arboriculture 3 cr.  
Establishment, culture, and maintenance of trees, shrubs, and vines in the landscape. Prerequisite: HORT 100G.
- HORT 365. Principles of Crop Production 4 cr. (3+3P)  
Basic principles of crop production including environmental and physiological factors limiting production, plant nutrition and soil science, soil-water management, cropping systems and management, pest management, and economic factors influencing crop production. Prerequisite(s): AGRO/HORT 100, CHEM 111G or equivalent and Math 120 or equivalent. Cross-listed with: AGRO 365



- HORT 377. Introduction to Turfgrass Management** 4 cr. (3+3P)  
Establishment and maintenance of turfgrass with emphasis on seeding methods, soil and water management, mowing, disease insects and turfgrass varieties. Crosslisted with: AGRO 377
- HORT 378. Turfgrass Science** 4 cr. (3+3P)  
Introduction to the scientific fundamentals for turfgrass management cultural practices, pest management, rootzone construction and ecology. Prerequisite(s): HORT 377 or consent of instructor.
- HORT 391. Internship** 1-6 cr.  
Professional work experience under the joint supervision of the employer and a faculty member. A written report is required. No more than 6 credits toward a degree. Consent of instructor required. Graded: S/U. Crosslisted with: AGRO 391 and SOIL 391
- HORT 447. Seminar** 1 cr.  
Review of current literature. Same as AGRO 447 and SOIL 447.
- HORT 449. Special Problems** 1-3 cr.  
Research problem, experience training, or other special study approved by a faculty advisor. Maximum of 3 credits per semester and a grand total of 6 credits.
- HORT 450. Special Topics** 1-4 cr.  
Specific subjects as announced in the Schedule of Classes. Maximum of 4 credits per semester and a grand total of 9 credits.
- HORT 462. Plant Breeding** 3 cr.  
Principles and practices involved with the genetic improvement of plants. Prerequisites: ANSC/AGRO/BIOL/HORT 305. Same as AGRO 462.
- HORT 465. Landscape Construction and Maintenance** 4 cr. (3+2P)  
Application of landscape design and construction principles to build and maintain residential, small commercial and selected public managed landscapes. Prerequisite(s): HORT 307 or consent of instructor.
- HORT 471. Plant Mineral Nutrition** 3 cr.  
Basic and applied aspects of plant requirements for soil-derived minerals and the processes whereby minerals are acquired, absorbed, translocated, and utilized throughout the plant. Prerequisite: EPWS/BIOL 314, or concurrent enrollment, or consent of instructor. Same as AGRO/EPWS 471.
- HORT 479. Advanced Turfgrass Science** 3 cr.  
Extensive reviews of turfgrass sciences including ecology, physiology, entomology, pathology, weed science, and soil science. Prerequisite: HORT 378 or consent of instructor.
- HORT 484. Ornamental Plant Production and Management** 4 cr. (3+3P)  
Covers the principles and practices of greenhouse and nursery crop production and management. Greenhouse irrigation and water quality, fertilization, containers and media, lighting, CO<sub>2</sub> enrichment, growth control, and crop scheduling. Prerequisite: HORT/AGRO 365 or consent of instructor.
- HORT 485. Vegetable Crop Management** 4 cr. (3+2P)  
Physiological, environmental and cultural aspects of vegetable crop production. Corequisite(s): AGRO 365 or HORT 365, or consent of instructor.
- HORT 488. Greenhouse Management** 4 cr. (3+3P)  
Principles and practices involved in greenhouse structures and construction, site considerations, covering materials, heating and cooling systems, greenhouse crop production techniques, and case studies. Prerequisite: HORT/AGRO 365 or consent of instructor.
- HORT 492. Diagnosing Plant Disorders** 3 cr. (2+3P)  
Systematic diagnosis of the physiological, pathological, and entomological causes of plant disorders. Prerequisites: EPWS 303 and EPWS 310. Same as EPWS 492 and AGRO 492.
- HOST- HOSPITALITY AND TOURISM**
- HOST 155. Special Topics** 1-3 cr.  
Specific subjects to be announced in the Schedule of Classes. Restricted to: Community Colleges only.
- HOST 201. Introduction to Hospitality Industry** 3 cr.  
Overview of hospitality industry; organization and operation of lodging, food and beverage, and travel and tourism segments; focus on career opportunities and future trends of hospitality industry. Restricted to: Community College campuses only.
- HOST 202. Front Office Operations** 3 cr.  
Hotel/motel front office procedures detailing flow of business, beginning with reservations and extending to the night audit process. Restricted to: Community College campuses only.
- HOST 203. Hospitality Operations Cost Control** 3 cr.  
Management of Food & Beverage facilities using cost control techniques. Functional training in menu analysis and development with all phases of product flow through a Food & Beverage organization explored. Restricted to: Community Colleges only.
- HOST 204. Promotion of Hospitality Services** 3 cr.  
Organization of hotel marketing functions; developing a marketing plan to sell the varied services of the hotel/motel property. Restricted to: Community College campuses only.
- HOST 205. Housekeeping, Maintenance, and Security** 3 cr.  
Function of housekeeping departments, including personnel, sanitation, maintenance, and materials. A survey of security procedures to include guest protection and internal security of hotel/motel assets. Restricted to: Community College campuses only.
- HOST 206. Travel and Tourism Operations** 3 cr.  
Transportation, wholesale and retail operations, attractions, the traveler, tourism development, and operational characteristics of tourism business. Restricted to: Community College campuses only.
- HOST 207. Customer Service for the Hospitality Industry** 3 cr.  
Concepts of service and the customer, integrating the need for service quality, and the continuing efforts to maximize returns for the operation. Classic service styles as well as more modern service techniques are covered. Students gain in-depth managerial knowledge, planning skills, and hands-on techniques for consistently delivering quality and service in a variety of operations. Restricted to: Community College campuses only.
- HOST 208. Hospitality Supervision** 3 cr.  
Strategies for directing, leading, managing change and resolving conflict. Prepares students to meet expectations of management, guests, employees, and governmental agencies. Restricted to: Community College campuses only.
- HOST 209. Managerial Accounting for Hospitality** 3 cr.  
Prepares students to make effective business decisions based on financial report information; forecasting, budgeting, cost analysis. Prerequisite(s): BOT 120 or ACCT 252. Restricted to: Community College campuses only.
- HOST 210. Banquet Operations** 3 cr.  
Banquet operations, including computer coordination, planning, set up, service, and completion. Restricted to: Community College campuses only.
- HOST 211. Food Production Principles** 3 cr. (2+2P)  
Introduction to kitchen design, workflow, and commercial equipment. Techniques, methods, and application of basic food production principles. Practical experience in cooking processes. Restricted to: Community College campuses only.
- HOST 212. Advanced Food Production** 3 cr. (2+2P)  
Selection and use of ingredients. Demonstrations of classical and modern cooking, preparation techniques, and garde-manger functions. Recipe design and analysis. Prerequisite(s): HOST 211. Restricted to: Community College campuses only.
- HOST 213. Professional Baking Operations** 3 cr. (2+2P)  
Fundamentals of baking, including leavened and yeast productions, breads, cakes, pastries, and cookies. Exposure to commercial equipment and processes. Introduction to commercial alternatives to scratch-preparation methods. Restricted to: Community College campuses only.
- HOST 214. Purchasing and Kitchen Management** 3 cr.  
Technical purchasing concepts, product selection, and specifications. Safety and sanitation as they relate to food service establishments. Prepares student for work with HACCP programs. Prerequisite(s): HOST 203. Restricted to: Community College campuses only.
- HOST 215. Museum Operations** 3 cr. (2+3P)  
Museum operations, including financial, managerial, and display-preservation issues, as well as specimen-display acceptance and setup. Consent of instructor required. Restricted to: Community College campuses only.
- HOST 216. Event, Conference and Convention Operations** 3 cr.  
The ability to successfully plan, organize, arrange, and execute special events is critical to the success of many hospitality organizations. This course gives the student a grounding in the skills necessary to achieve success in this area. A variety of events are discussed and the similarities and differences with conferences and conventions are explored. Students are taught to organize and plan events of varying type and durations. Sales, logistics, and organizing skills are emphasized. Restricted to: Community College campuses only.



- HOST 217. Introduction to Gaming Operations 3 cr.  
A survey of the history of gaming operations (especially Native American gaming), casino regulations, industry trends, and an overview of its impact on tourism. Consent of instructor required. Restricted to: Community College campuses only.
- HOST 218. Advanced Baking Techniques 3 cr. (2+2P)  
Advanced techniques of the pastry chef are explored and developed. Students are exposed to classical forms and techniques. Modern methods of preparing traditional pastry and baked goods will be introduced. Prerequisite(s): HOST 213. Restricted to: Community College campuses only.
- HOST 219. Safety, Security and Sanitation in Hospitality Operations 3 cr.  
It is the responsibility of the manager to provide appropriate security, sanitation, and safety precautions in hospitality operations. Preparation for internal and external disasters is an important task for the Hospitality Manager. This course uses the National Restaurant Association ServSafe training material. Restricted to: Community College campuses only.
- HOST 220. Experiential Travel 3 cr.  
Course provides an opportunity for students to plan, prepare for and experience travel to destinations they might not otherwise have visited. Students experience local culture and peoples. Prerequisite(s): HOST 201 or consent of instructor. Restricted to: Community College campuses only.
- HOST 221. Cooperative Experience 3 cr.  
Student employed in approved work site; supervised and rated by employer and instructor. Each credit requires specified number of hours of on-the-job work experience. Consent of instructor required. Graded: S/U. Restricted to: Community College campuses only. Restricted to HOST majors.
- HOST 222. Cooperative Experience II 3 cr.  
Continuation of HOST 221. Restricted to majors. Graded: S/U. Prerequisite(s): HOST 221. Restricted to: Community College campuses only. Restricted to HOST majors.
- HOST 223. Travel Agency Principles 3 cr.  
Travel agents are called upon to exhibit broad knowledge about many different tourism products. This course prepares students to undertake the challenging job of an agent in a travel agency. Restricted to: Dona Ana campus, Carlsbad campus.
- HOST 224. Travel Agency Booking & Operations 3 cr.  
Course trains students to use the common electronic booking software that is found in travel agencies. Familiarization with operational procedures of travel agencies. Prerequisite(s): HOST 223. Restricted to: Community College campuses only.
- HOST 225. Introductory Cake Decorating 1 cr.  
Introduction to the professional cake decorating techniques used by pastry chefs. Basic skills of piping a variety of icings into different patterns are taught. Restricted to: Community College campuses only.
- HOST 226. Intermediate Cake Decorating 1 cr.  
Introduction to more advanced professional cake decorating techniques used by pastry chefs. Fondant work and more complex decorating schemes are taught. Prerequisite(s): HOST 225. Restricted to: Community College campuses only.
- HOST 227. Chocolate Work 1 cr.  
Introduction to working with chocolate utilizing a variety of methods. Tempering, forming, molding, and other professional techniques will be taught. Restricted to: Community College campuses only.
- HOST 228. Wedding Cake Design and Construction 1 cr.  
Basic skills in designing wedding (or other specialty event) cakes. Includes shaping, icing selection, decorating scheme, presentation, transportation, and remote set up. Restricted to: Community College campuses only.
- HOST 230. Wedding Events Management 3 cr.  
This course will address various issues that could potentially arise in the preparation and management of a wedding or related event. All aspects of planning and attention to details that will ensure that students are prepared to provide services as a professional wedding planner. Restricted to: Community College campuses only.
- HOST 255. Special Topics 3 cr.  
Specific subjects to be announced in the Schedule of Classes. Restricted to: Community College campuses only.
- HOST 266. Group Travel Systems 3 cr.  
The course provides students with the basic skills necessary for developing and packaging tours and itineraries for large and small groups. Methods of marketing the specialized tour packages are explored. Restricted to: Community Colleges only.
- HOST 268. Regional Tour Operations 3 cr.  
Inbound tourists depend on regional tour operators to develop, market, operate and lead tours and activities. The specific skills for receptive tour operators, step-on guides, business agents and tour developers are explored and taught. Restricted to: Community Colleges only.
- HOST 290. Hospitality Service Capstone 3 cr.  
Refines skills and validates courses the student has taken in hospitality program. Business simulations, case studies and projects used to test and improve hospitality business practices. Prerequisite(s): HOST 201, HOST 203, HOST 207, HOST 208, HOST 209 and HOST 221. Restricted to: Community College campuses only. Restricted to HOST majors.
- HOST 298. Independent Study 1-3 cr.  
Individual studies directed by consenting faculty with prior approval of department chair. May be repeated for a maximum of 3 credits. Prerequisite(s): Minimum 3.0 GPA and sophomore standing. Restricted to: Community College campuses only.

## HRTM- HOTEL, RESTAURANT AND TOURISM MANAGEMENT

- HRTM 111. Freshman Orientation 1 cr.  
Orientation to university life, including available resources and methods to promote success at NMSU. Open to all freshmen and transfer students. Graded S/U.
- HRTM 200. Special Topics 1-4 cr.  
Specific subjects and credits to be assigned on a semester basis for both lecture and laboratory assignments. Prerequisite: consent of instructor. May be repeated for a maximum of 4 credits.
- HRTM 201. Introduction to Tourism 3 cr.  
Survey of travel and tourism development and operating characteristics.
- HRTM 210. Colloquium I 1 cr.  
Distinguished industry and professional speakers lecture on current issues. May be repeated for a maximum of 2 credits. Graded S/U.
- HRTM 221. Introduction to Hospitality Management 3 cr.  
Overview of the major segments of the hospitality industry, with a focus on basic management principles.
- HRTM 231. Safety, Sanitation and Health in the Hospitality Industry 2 cr.  
Addresses public health, HACCP, safety and culinary nutrition responsibilities in the hospitality industry. Sanitation certification test allows students to receive national credential.
- HRTM 263. Food Production and Service Fundamentals 3 cr. (1+4P)  
Basic overview of food service systems, including menu management, purchasing and production applied to an operating environment. Includes basic principles of food fabrication and production. Topics include knife skills, culinary terminology, product identification, quality standards, nutritional cooking theory and application of food preparation techniques. Laboratory aspects and demonstration of basic food production techniques, service styles, practice and procedures in food service operation including culinary math. Students will apply this knowledge by developing products for sale in a student run restaurant. Prerequisites: HRTM 221 and HRTM 231.
- HRTM 301. Hotel, Restaurant, and Tourism Marketing 3 cr.  
The development of effective marketing programs for hospitality service organizations. Prerequisites: HRTM 221
- HRTM 302. Hospitality Management Accounting 3 cr.  
Specialized accounting for hotel revenue and expenses; accounting for inventory, property, and equipment; hospitality payroll accounting; hotel departmental financial statements; income statement, balance sheet, and statement of cash flows; the analysis of financial statements; interim and annual reports; budgeting expenses; forecasting sales; budgetary reporting and analysis; and financial decision making. Prerequisite: ACCT 252
- HRTM 304. Hospitality and Travel Law 3 cr.  
Specialized applications of the law to the hospitality and tourism industry. Prerequisite: HRTM 221.
- HRTM 307. Professional Development 1 cr.  
Covers essential elements of career management including preparation for a successful internship. Restricted to majors. Graded S/U.
- HRTM 310. Colloquium II 1 cr.  
Distinguished industry and professional speakers lecture on current issues. Graded S/U. May be repeated for a maximum of 4 credits.
- HRTM 311. Hospitality Leadership Management 3 cr.  
Examines modern leadership theory in the context of the hospitality industry. Connects contemporary leadership topics to their historical antecedents through focused reading, discussion and film. Prerequisites: HRTM 221 and HRTM 201.

- HRTM 331. Hotel Operations I** 3 cr.  
Analysis of hotel systems design, process, and applications for operating areas including guest services, reservations, reception, telecommunications, guest/city ledger, and the night audit. Prerequisites: HRTM 201 and HRTM 221.
- HRTM 363. Quantity Food Production and Service** 4 cr.  
Menu planning, preparation, and controls in commercial food operation. Experience and practical application in commercial food service operations. Prerequisite(s): Human Nutrition Food Science majors: FSTE 263G. Hotel, Restaurant Tourism majors: HRTM 231 and 263, which may be taken concurrently. Same as HNDS 363.
- HRTM 400. Field Experience** 1-6 cr.  
Field experience (Internship) for Hotel, Restaurant, and Tourism Management Program. Prerequisite: consent of instructor. May be repeated for a maximum of 6 credits. Restricted to majors.
- HRTM 404. Gaming Operations and Organization** 3 cr.  
Introduction to the multi-billion-dollar industry, including an historical overview, social and economic impacts of gaming, and casino operations. Prerequisites: HRTM 201 and HRTM 221.
- HRTM 408. Hospitality Internship** 1 cr.  
Hospitality and tourism professional work experience for HRTM majors only. Prerequisites: HRTM 307 and consent of instructor. Restricted to majors.
- HRTM 409. HRTM Internship Seminar** 1 cr.  
A case based approach to analyzing internship experiences. Students will write case studies about specific business issues they encountered during HRTM 408 (Internship) and analyze them. Prerequisites: HRTM 408. Restricted to majors.
- HRTM 410. Hospitality Cost Control** 3 cr.  
Familiarizes students with all aspects of cost control including financial data entry and hospitality accounting practices, financial report production, analysis and problem solving. Students will learn to understand the roles of the various stakeholders (owners, managers, employees and customers.) Provides tools needed to communicate effectively about global financial issues affecting the hospitality business. Prerequisite: HRTM 408.
- HRTM 412. Beverage Management** 3 cr.  
Survey of all aspects of beverage management, including wine/beer/distilled spirits origins and trends, cost control, bar management, beverage purchasing, and wine appreciation. Prerequisite: HRTM 408.
- HRTM 413. Restaurant Operations Management** 4 cr. (1+6P)  
Provides a detailed understanding of the processes of restaurant operations management. Students are expected to increase kitchen technical skills, learn to cook from recipes and develop a personal culinary style. Provides the opportunity to perform a detailed analysis of a food and beverage operation, including running and selectively analyzing the reports from systems. Student must be at least 21 years old. Prerequisites: consent of instructor. Restricted to majors.
- HRTM 414. International Food and Wine** 3 cr.  
An experiential examination of wine through lectures, films, guest speakers and focused tasting of food and wine. Topics include viticulture, wine making varieties, terroir, and food pairings. Student must be at least 21 years old. Prerequisite: consent of instructor.
- HRTM 420. Club Management and Marketing** 3 cr.  
Provides an understanding of the general operational and administrative procedures practiced in private clubs from a marketing perspective with a special emphasis on managing and marketing club food and beverage operations and service. It will provide the professional golf management and hospitality students with the unique sensitivities required in managing and operating in the increasingly lucrative club management market.
- HRTM 421. Tourism Issues** 3 cr.  
Integrated analysis of the hospitality, tourism, and recreation delivery system. Focus is on current issues. Prerequisite: HRTM 201.
- HRTM 422. Tourism Development and Expansion** 3 cr.  
A comprehensive analysis of tourism destination evaluations, along with the planning and development process to accomplish such development. Emphasis on site development and support activities. Prerequisites: HRTM 201 and HRTM 221.
- HRTM 423. Hospitality and Tourism Research and Applications** 3 cr.  
An overview of research techniques utilized by today's hospitality practitioners. Emphasis on team projects conducted on area hospitality or tourism issues. Prerequisites: HRTM 201 and HRTM 221, and either STAT 251G or A ST 311.
- HRTM 430. Hospitality Facilities Management** 3 cr.  
Exploration of the engineering and maintenance requirements specific to the hospitality industry. Emphasis on environmental issues, renovation and management of the physical plant. Prerequisite: HRTM 331.
- HRTM 431. Hotel Operations II** 3 cr.  
The duties and administration of a hotel front office including housekeeping. Additional focus on the procedures of reservations and night audit. Students also gain exposure to property management systems. Prerequisite: HRTM 331.
- HRTM 432. Hotel Revenue and Sales Management** 3 cr.  
Examines methods used for profitably managing capacity, including dynamic pricing and allocation of the rooms inventory across market segments to maximize revenues. Focuses on the integration of revenue management principles with information technology, management, marketing and sales concerns at the property and market level. Prerequisite: HRTM 408.
- HRTM 433. Training for Hospitality Operations** 3 cr.  
Analysis of training needs and methods in hospitality organizations. Prerequisite(s): Mgt 332.
- HRTM 434. Senior Capstone Experience** 3 cr.  
Synthesizes all previous work. Students apply multi-disciplinary principles to the analysis of hospitality business cases and tourism problems. Prerequisite: HRTM 408.
- HRTM 443. Meetings, Conventions and Special Events** 3 cr.  
Examination of the role of the meeting/event planner, including setting objective, site selection, negotiations, design, budgeting, marketing, registration, on-site logistics, and evaluation. Prerequisites: HRTM 408.
- HRTM 450. Special Topics** 1-4 cr.  
Specific subjects to be announced in the Schedule of Classes. Prerequisite: consent of instructor. Maximum of 4 credits per semester and a grand total of 9 credits.
- HRTM 492. Special Problems** 1-4 cr.  
Individual research in a selected subject area of hospitality management. Prerequisite: consent of instructor. Maximum of 4 credits per semester and a total of 6 credits toward a degree.
- HVAC- HEATING/AC/REFRIGERATION**
- HVAC 100. EPA Clean Air Act: Section 608** 1 cr.  
Refrigerant certification preparation to include basics of refrigerant bearing equipment, ozone depletion and the new legislation, technician categories covered and the certification examination.
- HVAC 101. Fundamentals of Refrigeration** 4 cr. (3+2P)  
Refrigeration cycle and the various mechanical components. Use of special tools, equipment, and safety precautions.
- HVAC 102. Fundamentals of Electricity** 4 cr. (3+2P)  
Introduction to electricity theory, OHM's Law, circuits, AC/DC, and practical applications.
- HVAC 103. Electrical and Mechanical Controls I** 4 cr. (3+2P)  
Applications of basic electrical and mechanical controls. Reading and drawing diagrams of simple refrigerating equipment. Safe use of testing equipment. Prerequisites: HVAC 101 and HVAC 102, or consent of instructor.
- HVAC 104. Domestic Refrigeration** 4 cr. (3+2P)  
Installation and maintenance of refrigeration systems. Prerequisites: HVAC 101, and HVAC 102, or consent of instructor.
- HVAC 110. Professional Development and Leadership** 1-3 cr.  
As members and/or officers of various student professional organizations, students gain experience in leadership, team building, and community service. May be repeated for a maximum of 6 credits. Consent of instructor required.
- HVAC 113. Job Shadowing** 1 cr.  
Course will expose students to actual HVAC/R field work and provide them knowledge of the expectations of field work as they shadow an HVAC/R technician. Consent of instructor required. Restricted to: Community colleges.
- HVAC 118. Technical Math for Heating, Air Conditioning, and Refrigeration Technicians** 3 cr. (2+2P)  
Geometry, algebra, and basic arithmetic pertaining to mathematical applications in the heating, air conditioning, and refrigeration trades.
- HVAC 205. Commercial Refrigeration Systems** 4 cr. (3+2P)  
Service and maintenance of commercial refrigeration equipment to include evacuation and charging procedures, electrical diagrams, and compressors and accessories. Prerequisites: HVAC 103 or consent of instructor.

- HVAC 207. Residential Air Conditioning Systems 4 cr. (3+2P)  
Applications and types of equipment used in comfort cooling. Preventive maintenance, service, and repairs common to evaporative coolers and refrigerated air conditioning systems. Air properties and psychometrics. Prerequisite: HVAC 103 or consent of instructor.
- HVAC 209. Residential Heating Systems 4 cr. (3+2P)  
Gas and electric systems used in comfort heating. Maintenance procedures, safety, troubleshooting, and servicing malfunctions in equipment. Prerequisite: HVAC 103 or consent of instructor.
- HVAC 210. Commercial Air Conditioning and Heating Systems 4 cr. (2+3P)  
Covers troubleshooting mechanical and electrical problems associated with HVAC equipment in commercial buildings. Includes gas, electric, and heat pump systems. Prerequisite: HVAC 103 or consent of instructor.
- HVAC 211. Heat Pump Systems 4 cr. (3+2P)  
Reverse cycle refrigeration systems utilized in comfort heating and cooling. Troubleshooting mechanical electrical problems associated with heat pumps. HVAC 103 or consent of instructor.
- HVAC 213. Practicum 3 cr.  
Working in the field with journeymen service technicians. Develop and apply job skills. Consent of instructor required. Prerequisite(s): Consent of instructor. Restricted to: Community colleges.
- HVAC 220. Introduction to Sheet Metal Fabrication 4 cr. (3+2P)  
Introduction to sheet metal fabrication to include hands-on practical laboratory applications, cutting and forming procedures, identifying types and gauges. Design and layout techniques. Prerequisite: OETS 118 or equivalent math or consent of instructor.
- HVAC 225. New Mexico Mechanical Codes: HVAC 1-4 cr.  
Principles and regulations developed for HVAC, sheet metal, and plumbing occupations to include terminology, ventilation air supply, exhaust systems, duct systems, combustion air, chimneys and vents, boilers/water heaters, refrigeration, panel and hydronic panel heating, fuel gas piping, storage systems, solar systems, and workmanship standards. May be repeated for a maximum of 12 credits.
- HVAC 255. Special Topics 1-6 cr.  
Topics to be announced in the Schedule of Classes. Prerequisite: consent of instructor. May be repeated for a maximum of 12 credits.
- HVAC 290. Special Problems 1-4 cr.  
Individual studies related to heating, air conditioning, and refrigeration. Prerequisites: HVAC 101, HVAC 102, and consent of instructor.
- HVAC 291. Field Experience 1-6 cr.  
Supervised on-the-job training/field experience at an approved work site. Student is supervised and evaluated by the sponsor and instructor. Student will meet with the regularly scheduled class. Prerequisite: consent of instructor.

### I B- INTERNATIONAL BUSINESS

- I B 317. International Marketing 3 cr.  
Same as MKTG 317.
- I B 351. International Business 3 cr.  
The various aspects of international business, and identification and analysis of problems encountered by multinational companies. Prerequisite: junior standing or consent of instructor.
- I B 398. International Business and Economic Environments 3 cr.  
Description and analysis of various world regions, e.g., Pacific Rim, Eastern Europe, South Asia. Region will vary from semester to semester.
- I B 450V. International Economics 3 cr.  
Same as ECON 450V.
- I B 458. Comparative International Management 3 cr.  
Cultural influences on management are examined in a global business environment with a particular emphasis on human behavior in multinational organizations and the management of human resources. Same as Mgt. 458.
- I B 475. International Finance 3 cr.  
Same as FIN 475.
- I B 489. Senior Seminar in International Business 3 cr.  
Capstone class for I B majors. Integration of previous classwork via the examination of case studies and completion of a major project. Prerequisite: I B core.

### I E- INDUSTRIAL ENGINEERING

- I E 110. Industrial Engineering Orientation 1 cr.  
Introduction to Industrial Engineering Department, Facility Research and Resources. Overview of where industrial engineering fits into larger view of all of engineering. Introduction to university resources for industrial engineering students. Restricted to majors.
- I E 151. Computational Methods in Industrial Engineering 3 cr.  
History, social implications, and application of computers and an introduction to computer programming, word processing, and database management systems. Satisfies General Education computer science requirement. Prerequisite: MATH 121G.
- I E 152. Introduction to Industrial Engineering 2 cr.  
Historical development of industrial engineering, present practice and trends. Prerequisite: MATH 120.
- I E 200. Special Problems-Sophomore 1-3 cr.  
Directed individual projects. Prerequisite: consent of faculty member. May be repeated for a total of 3 credits.
- I E 217. Manufacturing Processes 2 cr.  
Manufacturing methods and industrial processes which include casting, forming and machining. Prerequisite(s): MATH 121G. Corequisite(s): I E 217L. Crosslisted with: ET 217
- I E 217 L. Manufacturing Processes Laboratory 1 cr. (3P)  
Laboratory associated with I E 217.
- I E 300. Special Problems-Junior 1-3 cr.  
Directed individual projects. May be repeated for a total of 3 credits. Prerequisite: consent of faculty member.
- I E 310V. Continuous Quality Improvement 3 cr.  
Deming's philosophy, Malcolm Baldrige national quality award, probability theory, discrete and continuous distributions, parameter estimation, hypothesis testing, control charts, design of experiments, analysis of variance, factorial experiments. Prerequisite: MATH 192G.
- I E 311. Engineering Data Analysis 3 cr.  
Methodology and techniques associated with identifying and analyzing industrial data. Prerequisite: MATH 192G.
- I E 316. Methods Engineering 3 cr. (2+3P)  
Methods analysis and design. Work measurement techniques. Job evaluation and wage incentive methods. Prerequisite: I E 311.
- I E 330. Environmental Management Seminar I 1 cr.  
Survey of practical and new developments in hazardous and radioactive waste management provided through a series of guest lectures and reports of ongoing research. Restricted to: Main campus only. Crosslisted with: C E 330, CH E 330, E E 330, E S 330, E T 330, M E 330 and WERC 330
- I E 351. Applied Problem Solving in Industrial Engineering 3 cr.  
Application of computational techniques to engineering problems including the use of commercial programs in statistics and applied mathematics. Corequisite: I E 311. Restricted to majors.
- I E 365. Quality Control 3 cr.  
Statistical analysis of quality in manufacturing. Acceptance sampling and control charts. Prerequisite: I E 311 or equivalent.
- I E 375. Manufacturing Processes II 3 cr.  
Review of basic manufacturing processes. Advanced topics in casting, forming, machining and joining; major process parameters; economics of processes. Prerequisite: I E 217 or ET 217.
- I E 382. Business for the Practicing Engineer 3 cr.  
Business tools and skills, including technology commercialization, patent applications, preparing a technology-oriented business plan, reading and constructing financial documents, modeling and understanding markets, e-commerce, QFD, concurrent engineering, engineer's role in the global economy, and engineer's impact on product design and cost. Prerequisite: engineering major, junior level or above.
- I E 400. Undergraduate Research 1-3 cr.  
May be repeated for a maximum of 6 credits. Prerequisite: consent of faculty member.
- I E 411. Occupational Safety 3 cr.  
Practical methods to improve safety in the workplace. Topics include OSHA and other regulations, hazard recognition, assessment and control, industry standards, risk assessment and safety management. Material is applicable to a variety of workplace settings. This course is intended for College of Engineering students who have completed their lower-division requirements in mathematics, engineering, technology, and basic science. Same as IE 561 with differential assignments. Prerequisite: Junior standing



- I E 413. Engineering Operations Research I 3 cr.  
Deterministic operations research modeling including linear and integer programming. Prerequisite: MATH 192G.
- I E 423. Engineering Operations Research II 3 cr.  
Probabilistic operations research modeling, including queuing systems and their optimization; Markov chains. Prerequisite: I E 311.
- I E 424. Manufacturing Systems 3 cr.  
Organization and functions of manufacturing planning and control systems including forecasting, MRP, capacity planning, JIT systems, scheduling, and inventory control. Prerequisite: I E 311.
- I E 430. Environmental Management Seminar II 1 cr.  
Survey of practical and new developments in environmental management field, hazardous and radioactive, waste management, and related health issues, provided through a series of guest lectures and reports of ongoing research. Restricted to: Main campus only. Crosslisted with: C E 430, CH E 430, E E 430, E S 430, E T 430, M E 430 and WERC 430
- I E 451. Engineering Economy 3 cr.  
Discounted cash flows, economics of project, contract and specifications as related to engineering design. Same as CH E 451.
- I E 453. Leadership and Motivation 3 cr.  
Theories of leadership and motivation. Motivational programs for complex organizations. Relationships between organizational power, authority, and management styles. Prerequisite: MGT 309 or consent of instructor. Same as MGT 453.
- I E 460. Evaluation of Engineering Data 3 cr.  
Analysis of engineering systems possessing variability, employing regression, analysis of variance, distribution theory, and experimental design methods. Prerequisite: I E 311 or equivalent.
- I E 466. Reliability 3 cr.  
Application of statistical theory to engineering reliability estimation, reliability improvement, and the analysis of reliability test data. Prerequisite: I E 311 or equivalent.
- I E 467. Discrete-Event Simulation Modeling 4 cr.  
Basic modeling concepts, organizations of simulations, input data analysis, random variate generation, simulation design and analysis, model validation, output analysis, and management of simulations. Differentiated graduate assignments. Prerequisite: I E 311 or equivalent. Same as I E 567.
- I E 468. Advanced Discrete-Event Simulation Applications 3 cr.  
Semester long project involving development and application of advanced simulation skills. Prerequisite: I E 467. Same as I E 568.
- I E 477. Ergonomics in Manufacturing Systems 3 cr.  
Ergonomic analysis applied to manufacturing engineering environment. Covers: task analysis, workplace assessment and design, computer-integrated manufacturing, and legal/regulatory issues in manufacturing task and workplace design.
- I E 478. Facilities Planning and Design 3 cr.  
Plant location methods, total process analysis, process integration, materials handling analysis, and traditional and computerized plant layout methodologies. Prerequisite: I E 316. Corequisite: I E 424.
- I E 479. Integrated Manufacturing 3 cr.  
Automated process planning as a link between CAD and CAM. Emphasis on information flows and modeling concepts, design data analysis, feature recognition and generative planning. Prerequisite: knowledge of a programming language or consent of instructor. Same as I E 579.
- I E 480. Senior Design 3 cr. (2+3P)  
Multi-disciplinary team design project for external clients. Involves semester long activities including major design report and presentation. Prerequisites: senior standing, I E 467.
- I E 490. Selected Topics 1-3 cr.  
Prerequisite: consent of the head of the department. May be repeated for a maximum of 9 credits.
- ICT- INFORMATION AND COMMUNICATION TECHNOLOGY**
- ICT 300. Special Topics 3 cr.  
Directed study or project. Consent of Instructor required.
- ICT 320. Applications Software for Technologists 3 cr.  
Use of existing software packages for technology application. Prerequisite(s): junior standing.
- ICT 339. Computer Forensics 3 cr.  
The legal, regulatory, and technical aspects of computer forensics. Topics include: current law; privacy legislation; chain of evidence; creating a computer incident response team (CIRT); and the extraction, preservation, analysis, and presentation of computer-related evidence. Prerequisite(s): Junior standing.
- ICT 345. Computer Hardware Fundamentals 3 cr.  
Computer hardware fundamentals including architecture, interfacing, peripherals, troubleshooting, system upgrades, and maintenance. Prerequisite(s): junior standing.
- ICT 352. Software Programming for Information and Communication Technology 3 cr.  
Computer programming techniques for information and communication technology topics.
- ICT 360. Operating Systems for ICT 3 cr.  
Command Line interface, File systems, File manipulations, remote login. For information and communication technologists.
- ICT 362. Software Technology II 3 cr.  
A continuation of topics from ICT 262 that are directed toward more advanced software development. Topics include problem analysis, object oriented, structured logic, and development concepts. Prerequisite(s): ET 262 or ICT 352.
- ICT 377. Computer Networking I 3 cr.  
Topics presented from the point of view of the network administrator include computer network design and applications from LAN to WAN to the Internet, office LANs, cable certification, switches, routers, Windows server, TCP/IP networks, network protocols, network diagnostics, campus network and Internet routing, the OSI layers from physical to transport. Prerequisite(s): junior standing.
- ICT 435. Senior Project 3 cr.  
Advanced ICT Project. Normally taken during last semester of the program. Prerequisite(s): ICT 462 and ICT 377 and ICT 458.
- ICT 450. Advanced Topics in Information and Communication Technology 3 cr.  
Addresses the latest advances and topics in information and communication technology. Prerequisite(s): (ICT 362 or E T 362) and ICT 360.
- ICT 456. Analysis of Physical Security Systems 3 cr.  
The design, analysis and implementation of security systems and subsystems including threat detection and response, information and communications, security, and physical protection. Prerequisite(s): junior standing.
- ICT 457. Introduction to Information Security Technology 3 cr.  
Practical techniques of Data Encryption Technology, Steganography for Information Technology, Intrusion Detection and Countermeasures. Use of Python to write system tools for detecting anomalies in data flow. Design of physically secure data housing. Techniques of Industrial Espionage. Hiding and finding of secrets in the field. Dead drops, design of Fake ID's. Use of PGP and other public encryption methods. Using DNS tools to track down hackers. Hiding of information in music and other audio files. Prerequisite(s): Junior Standing.
- ICT 458. Database Design and Applications 3 cr.  
Using SQL in a Tomcat (Java Servlet oriented) environment. Data conversion using Python and line editing for Engineering Technology departments. Methods of transferring data from electronic boards and data feeds, into databases. Use of SQL in java programming. Remote programming of Computers for running database systems in a mixed OS environment. Generation of web pages directly from Database queries. Prerequisite(s): ICT 360.
- ICT 460. Advanced Topics in Multimedia Technologies 3 cr.  
Addresses the latest multimedia technology advances and how they apply to the information and communication technology fields. Prerequisite(s): ICT 360.
- ICT 462. Remote Access Operating Systems 3 cr.  
Concepts relating to operating systems applications and interfacing with an introduction to systems administration. Setup and control of web servers and all common UNIX tasks. Prerequisite(s): (ICT 362 or E T 362) and ICT 360.
- ICT 463. Computer Systems Administration 3 cr.  
A continuation of topics in computer systems administration from ICT 462. Prerequisite(s): ICT 462 or E T 462.
- ICT 477. Computer Networking II 3 cr.  
Advanced concepts in computer network design and applications including managing the campus networks, virtual LANs (VLAN), network security, wireless networks, high-speed optical networks, voice over IP, and Linux networking. Prerequisite(s): ICT 377 or E T 377.



**JOUR- JOURNALISM AND MASS COMMUNICATION**

- JOUR 102. Grammar for Journalists** 1 cr.  
Grammar, spelling, and punctuation instruction for journalism majors seeking to take and pass the departmental Grammar-Spelling-Punctuation (GSP test). Offered as a mini-course with GSP test serving as the final examination.
- JOUR 105G. Media and Society** 3 cr.  
Functions and organization of the mass media system in the United States; power of the mass media to affect knowledge, opinions, and social values; and the impact of new technologies.
- JOUR 110. Introduction to Mass Media Writing** 3 cr. (2+2P)  
Preparation of copy for broadcasting, print, advertising, and public relations. Introduction to Web applications. Prerequisite(s): JOUR 102, ACT English score above 25 or SAT Verbal above 570.
- JOUR 210. Newswriting for Print and Internet** 3 cr. (2+2P)  
Intensive laboratory practice in writing news for print media as well as Internet news sites. Prerequisite(s): GSP, ACT score of 25+ or SAT score of 570+ and JOUR 110.
- JOUR 300. Introduction to Advertising** 3 cr.  
Role of advertisements and commercials in marketing of goods, services, and organizations. Creative process, strategic planning media, message design, consumer behavior, and social issues of advertising.
- JOUR 302. Video Production** 3 cr.  
Classroom instruction on basic studio and single camera video productions, focusing on practical aspects of news production. Web video basics. Lab experience in camera basis, studio functions and basic video editing. Includes practical experience through crew assignments at KRWG-TV. a PBS station.
- JOUR 305. Visual Media** 3 cr.  
How one sees, perceives, interprets, creates and applies visual language. Explores the history, techniques, application and practice of the various visual media.
- JOUR 306. Feature Writing for magazines and Newspapers** 3 cr.  
The preparation of feature stories for newspapers and magazines. How to develop a variety of stories, research topics, interview sources, polish writing and market work. May be repeated for a maximum of 6 credits. Prerequisite(s): JOUR 210 or consent of instructor.
- JOUR 307. Television Studio Directing** 3 cr.  
Television studio production techniques from Director's point of view. Extensive practice directing actual TV productions. Prerequisite(s): JOUR 302 or permission of instructor.
- JOUR 310. Intermediate Print Reporting** 3 cr.  
News writing and field reporting for print and Web applications. Instruction in community coverage, reporter responsibility, ethics and news values. Prerequisite(s): JOUR 210.
- JOUR 312. Advertising/Copywriting** 3 cr.  
Creative process, strategic thinking, and principles of advertising in execution of copy, storyboards, and layouts for clients. Prerequisite(s): JOUR 110 or consent.
- JOUR 313. Radio Reporting** 3 cr.  
Writing, editing, and announcing radio news; introduction to basic radio production. Prerequisite(s): JOUR 210.
- JOUR 314. Broadcast Reporting** 3 cr. (2+2P)  
Writing, editing, producing, announcing and reporting of TV and radio news. Prerequisite(s): JOUR 210.
- JOUR 317. News Editing** 3 cr.  
Extensive, directed practice in various aspects of computer editing for printed publication. Headline writing, copy editing, design, and layout. Prerequisite(s): JOUR 210.
- JOUR 319. Intro Photography** 3 cr.  
Basic camera operation, photojournalistic techniques, picture page production, and black and white darkroom experience. Thirty-five millimeter or equivalent camera needed.
- JOUR 320. Photojournalism** 3 cr.  
Practical news and magazine photography. Wet darkroom and digital applications and techniques. Student provides camera system with flash. Prerequisite(s): JOUR 319. Corequisite(s): JOUR 210.
- JOUR 321. Media Graphic Design** 3 cr.  
Concepts and design skills useful for all aspects of journalism - print media and newsletters, basics of Photoshop and introduction to Web design. Prerequisite(s): JOUR 210.
- JOUR 330. Electronic News Gathering** 3 cr. (2+4P)  
Overview of technical and aesthetic skills and journalism basics needed for shooting and editing on-location news productions. Single camera videography and nonlinear/digital editing. Prerequisite(s): JOUR 302 or permission of instructor.
- JOUR 350. History of Mass Media** 3 cr.  
Historical overview of mass media with emphasis on roots of journalism, technological developments, and American role in international media.
- JOUR 374. Principles of Public Relations** 3 cr.  
Communication techniques and public relations applications. Preparation of material by public relations professionals for mass media use. Prerequisite: JOUR 210.
- JOUR 377V. Mass Media Ethics** 3 cr.  
Philosophical and moral examination of problems relating to mass media. Use of case study method to analyze media situations; development of framework for media professionalism.
- JOUR 380. Women and the Mass Media** 3 cr.  
Portrayal and participation of women in mass media from colonial to contemporary times. Same as W S 450.
- JOUR 399. New Mexico Law** 3 cr.  
Same as C J 399, GOVT 399, HIST 399, and SOC 399.
- JOUR 407. Media Internship** 3 cr.  
Paid supervised work with a mass communications organization. Students who take JOUR 407 may not take JOUR 408. Prerequisite: consent of internship coordinator.
- JOUR 408. Media Practicum** 1-3 cr.  
Unpaid supervised work with a mass communications organization. May be repeated for a maximum of 3 credits. Prerequisite: consent of internship coordinator.
- JOUR 412. Documentary Photojournalism** 3 cr.  
Production of documentary photography for print, Web, exhibition and books through storytelling techniques. Consent of instructor required. Prerequisite(s): JOUR 319.
- JOUR 414. RTV Scriptwriting/Performance** 3 cr.  
Writing and delivery of news scripts for radio and television. Focus on anchoring announcing, voice technique and performance. Prerequisite(s): JOUR 210, 313 or 314 or consent of instructor.
- JOUR 422. Visual Convergence** 3 cr.  
Exploration of visual imaging for use on the Web. Still Photography, Video and Writing converge and are applied in Web applications. Students learn Slideshow production, basic Video capture and editing, audio skills, Blog site creation and maintenance. Prerequisite(s): JOUR 319 & JOUR 320.
- JOUR 423. Computer-Assisted News Reporting** 3 cr. (2+2P)  
Advanced news reporting techniques, utilizing sources such as computerized databases. Development of in-depth multiple-source stories. Prerequisite: JOUR 310.
- JOUR 425. Media Planning and Buying** 3 cr.  
Covers the principles of media planning for an ad campaign and procedures for purchasing ad time or space. Prerequisite(s): JOUR 300 or consent of instructor.
- JOUR 427. Multimedia Publishing** 3 cr.  
Writing-based course stresses the online telling of a story in many ways: text, photography, slide shows, audio and video news gathering, editing and posting. Prerequisite(s): JOUR 210.
- JOUR 460. Public Relations Promotion in Sports** 3 cr.  
Examination of sports as a business and how public relations promotion is executed in professional sports franchises.
- JOUR 476. Public Relations Cases and Problems** 3 cr.  
The study and solving of problems in the mass media industry. Prerequisite: JOUR 374.
- JOUR 482. Broadcast Business and Regulation** 3 cr.  
Station organization and management of commercial and public radio and television; FCC regulations; programming, sales, ratings.
- JOUR 484. Public Opinion** 3 cr.  
Seminar on forces which help form public opinion; individual projects in attitude measurement; measuring effectiveness of mass communication.
- JOUR 489. Mass Media Research** 3 cr.  
Examination of the role of empirical research in solving mass communication problems. Survey techniques, field studies, content analysis, data analysis.

- JOUR 490. Advertising Campaigns** 3 cr.  
Capstone course utilizing all previous instruction to create and develop plans for a long-term national or local advertising campaign. Consent of instructor required. Prerequisite(s): JOUR 300 and 312 or consent of instructor.
- JOUR 493. Mass Communications Law** 3 cr.  
Examination of legal issues relating to mass media in the United States. Invasion of privacy, libel, sedition, copyright, and advertising regulation. Same as COMM 493, GOVT 493.
- JOUR 494. Special Topics** 3 cr.  
Specific subjects to be announced in the Schedule of Classes.
- JOUR 499. Independent Study in Mass Communications** 1-3 cr.  
Individual study directed by consenting instructor with prior approval of department head. Prerequisites: 2.5 GPA and consent of instructor. May be repeated for a maximum of 6 credits.

**JPNS- JAPANESE**

- JPNS 111. Elementary Japanese I** 4 cr.  
Japanese language for beginners.
- JPNS 112. Elementary Japanese II** 4 cr.  
Japanese language for beginners. Prerequisite: grade of C or better in JPNS 111 or consent of instructor.
- JPNS 211. Intermediate Japanese I** 3 cr.  
Speaking, reading, and writing the Japanese language. Prerequisite: grade of C or better in JPNS 112 or consent of instructor.
- JPNS 212. Intermediate Japanese II** 3 cr.  
Speaking, reading, and writing the Japanese language. Prerequisite: grade of C or better in JPNS 211 or consent of instructor.
- JPNS 320. Oral Practicum in Japanese** 1-3 cr.  
Service training for facilitators leading informal conversation groups in Japanese. Prerequisites: fluency in Japanese and consent of instructor. May be repeated for a maximum of 4 credits.
- JPNS 449. Special Problems** 1-3 cr.  
Directed readings for graduate students in their specific fields to satisfy language requirements for master's or doctoral programs. Course subtitled in the Schedule of Classes. May be repeated to a maximum of 6 credits.
- JPNS 453. Independent Studies in Japanese** 1-3 cr.  
Individualized, self-paced projects for advanced students.

**L A- LAGUNA ACOMA STUDIES**

- L A 101. Introduction to Laguna/Acoma Studies** 3 cr.  
Covers geography, demography, institutions of modern Laguna and Acoma pueblos with historical overview.

**L SC- LIBRARY SCIENCE**

- L SC 100. Introduction to Library and Information Services Careers** 3 cr.  
Overview of careers in the library and information field, including history and development, responsibilities of library personnel, types of libraries and services, and technology and trends. Restricted to: Dona Ana campus only.
- L SC 110. Reference and Information Resources I** 3 cr.  
Overview of reference services. Introduction to, and evaluation of, basic information resources (both print and electronic) and their application in library and information centers.
- L SC 111. Introduction to Information Literacy in an Electronic Environment** 3 cr.  
Introduction to the basics of the research process; the organization, location and evaluation of information using print, non-print and electronic resources. Restricted to: Community Colleges only.
- L SC 120. Cataloging Basics I: Descriptive Cataloging** 3 cr.  
Introduction to descriptive cataloging. Restricted to: Dona Ana campus only.
- L SC 125. Cataloging Basics II: Classification and MARC Cataloging** 3 cr.  
Continuation of descriptive cataloging basics. Introduction to subject analysis, classification and MARC coding. Restricted to: Dona Ana campus only.
- L SC 130. Introduction to Technical Services in Libraries and Information Centers** 3 cr.  
Introduction to technical services in libraries and information centers, including acquisitions, bindery, cataloging, gifts, and serials. Restricted to: Dona Ana campus only.

- L SC 140. Multimedia Materials and Presentations in Libraries & Information Centers** 3 cr.  
Overview of media formats and equipment. Introduction to desktop publishing, presentations, and web-page creation applications in libraries and information centers. Restricted to: Community Colleges only.
- L SC 145. Marketing Your Library** 1 cr.  
The process of creating and implementing a marketing plan that focuses on the needs of library patrons. Restricted to: Dona Ana campus only.
- L SC 150. Library Services for Children and Young Adults** 3 cr.  
Library services for children and young adults with an overview of materials, programs, and services for this population. Restricted to: Dona Ana campus only.
- L SC 154. State Children's Book Awards** 1 cr.  
Students will explore the state book award offered by their state. Students will read some of the books and plan library programs to promote the award. Restricted to: Dona Ana campus only.
- L SC 155. Award Winning Books for Children** 1 cr.  
A review of book awards and how to integrate award winning books into school curriculum or public school programming. Community Colleges only.
- L SC 156. Boys and Books** 1 cr.  
This course looks at why, in general, boys are less interested in books than girls. We will discover ways libraries can encourage boys to read and develop activities and programs which entice them to do so. Students will also be reading some books recommended for boy readers. Restricted to: Dona Ana campus only.
- L SC 160. Introduction to Public Services in Libraries and Information Centers** 3 cr.  
Introduction to public services in libraries and information centers, including circulation, inter-library loan, reference media services, special collections, and government documents. Restricted to: Dona Ana campus only.
- L SC 165. Customer Service in Libraries** 1 cr.  
Skills for interacting with library patrons from diverse backgrounds and in challenging environments. Restricted to: Dona Ana campus only.
- L SC 168. Managing Library Volunteers** 1 cr.  
Covers recruitment, training and development, and management of library volunteers. Restricted to: Dona Ana campus only.
- L SC 173. Library Conference Internship** 1 cr.  
Student will volunteer at an approved library conference. Graded: S/U. Restricted to: Dona Ana campus only.
- L SC 175. Civic Involvement in Library Science** 1-3 cr.  
Involvement in an organized community service project or group with a library or information technology component. Promotes awareness of volunteer and community service opportunities. May be repeated for a maximum of 6 credits. Graded: S/U. Restricted to: Dona Ana campus only.
- L SC 191. Children's Books and their Movie Adaptations** 1 cr.  
For almost as long as there have been popular books for children in the United States, there have been dramatic adaptations of them. What is gained, and lost, when children's books are adapted for the big screen? What is the relationship-or what should the connection be-between works of children's literature and their seemingly inevitable film adaptations? Students will be expected to read several children's books and view the movies based on them and make comparisons. Restricted to: Community College campuses only.
- L SC 192. Myths and Legends in Children's Literature** 1 cr.  
The student will explore myths and legends from diverse cultures from European and Asian people groups to those who have their roots in Africa and the Americas. We will compare myths which are similar across several cultures. Restricted to: Community College campuses only.
- L SC 193. Poetry for Children** 1 cr.  
This course will explore the genre of poetry for children. In this class, participants will focus on reading and reviewing poetry for kids, exploring poetry on the Web, and trying interactive approaches for sharing poetry with children. Topics include: study and analysis of poetry, ways to use poetry in the classroom, writing poetry with children. Restricted to: Community College campuses only.
- L SC 194. The Art of Picture Books** 1 cr.  
Students will develop an understanding and appreciation of the processes of the creation of the visual aspects of children's books, including the development process from preliminary sketches and/or storyboard to the published book; various media and techniques; case studies of individual artists and works. Restricted to: Community College campuses only.

- L SC 195. **Mysteries for Children** 1 cr.  
For many children, mysteries are their favorite genre of books. In this course the student will become familiar with a wide variety of mysteries for children. We will also discuss ways to use mysteries in the classroom and school library. Restricted to: Community College campuses only.
- L SC 196. **Historical Fiction for Children** 1 cr.  
This course looks at historical fiction as a genre. Topics include: fiction vs. history, American history in children's literature, world history in children's literature, activities for using historical fiction in a school setting. Restricted to: Community College campuses only.
- L SC 197. **Fantasy and Speculative Fiction** 1 cr.  
This course offers professionals serving school students the opportunity to increase your appreciation and knowledge of fantasy and speculative fiction through intense reading and discussion of representative works. The course will also investigate and consider options using fantasy and speculative fiction in a school setting. Restricted to: Community College campuses only.
- L SC 200. **Collection Management and Development in Libraries and Information Centers** 3 cr.  
Principles of identifying, selecting, acquiring, managing, and evaluating resources for libraries and information centers. Restricted to: Dona Ana campus only.
- L SC 201. **Public Libraries** 3 cr.  
A study of the American public library and its place in communities. Topics may include history, philosophy, and standards, operations and procedures, governance, funding, personnel materials, user services, outreach and advocacy. Restricted to: Dona Ana campus only.
- L SC 202. **Academic Libraries** 3 cr.  
An examination of the functions of the library within the higher education environment. Topics may include history, philosophy, and organization, operations and procedures, governance, funding, personnel, materials, outreach, and user services. Restricted to: Dona Ana campus only.
- L SC 203. **School Library Media Specialist** 3 cr.  
Principles and practice of managing the school library media center, with an emphasis on its specific educational mission. Collection development, classes and lesson plans, public relations, administrative procedures, and use of technology. Restricted to: Dona Ana campus only.
- L SC 204. **Special Libraries and Information Centers** 3 cr.  
An examination special libraries and information centers. Topics may include management, user services, technical services, facilities, and types of collections. Restricted to: Dona Ana campus only.
- L SC 205. **Preservation Basics for Libraries** 1 cr.  
Basic preservation tools and techniques for library sources. Restricted to: Dona Ana campus only.
- L SC 210. **Technology Planning Libraries and Information Centers** 3 cr.  
Overview of computer applications in libraries and information centers; including automated systems and electronic resources; introduction to evaluation and technology and writing a technology plan. Restricted to: Dona Ana campus only.
- L SC 211. **Electronic Privacy** 1 cr.  
An Introduction to the potential dangers of revealing personal information electronically and how libraries can inform and alert to protect the privacy of library computer users. Restricted to: Dona Ana campus only.
- L SC 220. **Innovative Technology Applications for Libraries and Information Centers** 3 cr.  
A look at uses for innovative technologies in libraries and information centers. Topics may include blogs, wikis, podcasting and virtual reality libraries. Restricted to: Dona Ana campus only.
- L SC 221. **Cooperative Experience I** 1-3 cr.  
Student is employed in an approved work site and rated by the employer and instructor. Each credit requires a specified number of hours of on-the job work experience. Restricted to majors. Consent of instructor required. Graded: S/U. Prerequisite(s): Consent of instructor. Restricted to: Dona Ana campus only.
- L SC 222. **Cooperative Experience II** 1-3 cr.  
Continuation of L SC 221. Each credit requires specified number of hours of on-the-job work experience. Restricted to majors. Consent of instructor required. Graded: S/U. Prerequisite(s): L SC 221 and consent of instructor. Restricted to: Dona Ana campus only.
- L SC 230. **Issues and Ethics in Libraries and Information Centers.** 3 cr.  
Discussions of current and continuing challenges to effective library and information service. Topics may include copyright, censorship, intellectual freedom, Internet filtering, problem patrons, security, or other current issues. Restricted to: Dona Ana campus only.
- L SC 231. **Copyright Basics for Libraries** 1 cr.  
Copyright definitions and ways that copyright may affect library service. Restricted to: Dona Ana campus only.
- L SC 232. **Disaster Planning for Libraries** 1 cr.  
Preparing for and responding to library disasters. Restricted to: Dona Ana campus only.
- L SC 233. **Library Privacy and Confidentiality** 1 cr.  
Covers the USA Patriot Act and other laws that apply to library user privacy. Restricted to: Dona Ana campus only.
- L SC 234. **Intellectual Freedom in Libraries** 1 cr.  
Philosophical and practical information related to library policies about access to library materials. Restricted to: Dona Ana campus only.
- L SC 235. **Library Security and Safety** 1 cr.  
Strategies for safety and security planning in libraries. Restricted to: Dona Ana campus only.
- L SC 236. **Banned Books** 1 cr.  
Banned books, selection policies, and responding to challenges. Restricted to: Dona Ana campus only.
- L SC 240. **Internet Resources and Research Strategies** 3 cr.  
Introduction to retrieving and evaluating information found on the Internet and in selected Internet-accessible databases. Restricted to: Dona Ana campus only.
- L SC 250. **Reference and Information Resources II** 3 cr.  
Evaluation and use of specialized information resources to offer reference services. Emphasis is on virtual reference and other innovative techniques. Restricted to: Dona Ana campus only.
- L SC 255. **Special Topics** 1-3 cr.  
Special topics to be announced in Schedule of Classes. May be repeated for a maximum of 12 credits. Restricted to: Dona Ana campus only.
- L SC 260. **Cataloging Non-Book Formats** 3 cr.  
Introduction to cataloging of various non-book formats and MARC coding. Restricted to: Dona Ana campus only.
- L SC 261. **U.S. Government Documents** 1 cr.  
An introduction to U.S. government documents and the SuDoc classification system. Restricted to: Dona Ana campus only.
- L SC 262. **State and Local Documents** 1 cr.  
An introduction to state and local documents in library collections. Restricted to: Dona Ana campus only.
- L SC 265. **Cataloging Music Materials** 3 cr.  
Overview of the basics of cataloging music materials including scores, CD's, videos, and DVD's using AACR2 and MARC coding. Designed for the cataloger with little or no music cataloging experience. Restricted to: Dona Ana campus only.
- L SC 270. **Library Science Capstone** 3 cr.  
A culmination of all technical courses that are required to receive an Associate of Applied Science from the program centering around the completion of a library related project. Discussions on the role of paraprofessionals in libraries. Restricted to: Dona Ana campus only.
- L SC 275. **Fundamentals of Library Supervision** 3 cr.  
An introduction to supervision of library employees, including student assistants, to create a productive workplace. Restricted to: Dona Ana campus only.
- L SC 276. **Building Specialized Collections for Latinos** 1 cr.  
Building a library collection to serve Latino populations. Restricted to: Dona Ana campus only.
- L SC 277. **Building Specialized Collections for Native Americans** 1 cr.  
Building a library collection to serve Native American populations. Restricted to: Dona Ana campus only.
- L SC 280. **World Libraries Exchange Programs** 3 cr.  
Students will study about libraries outside the United States. Students will also be introduced to exchange and volunteer program opportunities around the world. Restricted to: Dona Ana campus only.
- L SC 281. **Grant Writing for Libraries** 1 cr.  
Introduction to grant writing for libraries. Restricted to: Dona Ana campus only.
- L SC 286. **Children's Literature and the Primary Curriculum** 3 cr.  
The student will research the use of picture books and other children's literature across the curriculum with students in kindergarten through second grade. Topics include: using literature to teach writing, using literature to teach science, using literature to teach math, using literature to teach social studies. Restricted to: Community College campuses only.



- L SC 287. Children's Literature and the Intermediate Curriculum 3 cr.  
The student will research the use of picture books and other children's literature across the curriculum with students in grades three through five. Topics include: using literature to teach writing, using literature to teach science, using literature to teach math, using literature to teach social studies. Restricted to: Community College campuses only.
- L SC 288. Children's Literature and the Middle School Curriculum 3 cr.  
The student will research the use of picture books and other children's literature across the curriculum in grades six through eight. Topics include: using literature to teach writing, using literature to teach science, using literature to teach math, using literature to teach social studies. Restricted to: Community College campuses only.
- L SC 290. Introduction to Children's Literature for Libraries and Information Centers 3 cr.  
This course will introduce current and potential library personnel to a wide variety of literature written for children. The course explores the history of children's literature and the path it has taken. Students will read many books from a variety of genre, explore the literary elements found in those books, and develop some evaluation criteria and ways for children to respond to the literature they read. Restricted to: Dona Ana campus only.
- L SC 291. Southwestern Children's Literature 1 cr.  
This course will introduce students to books which can teach the children visiting your library more about the people and places of the southwest. Restricted to: Dona Ana campus only.
- L SC 292. Native American Children's Literature 1 cr.  
This course will introduce students to some children's and your adult books written by and about Native Americans. Restricted to: Dona Ana campus only.
- L SC 295. Introduction to Young Adult Literature 3 cr.  
The course will expose students to quality adolescent literature available for reading and study in middle and high school classes. It provides a broad survey of young adult literature and focuses on building an appreciation of literature, encouraging student reading, developing life-long readers, and developing activities for critical thinking. Restricted to: Community College campuses only.
- L SC 296. Multicultural Books for Children and Youth 3 cr.  
This course explores a wide range of multicultural children's literature including: African American, Native American, Latino, Asian, Jewish, and Middle Eastern. Topics covered include: nonfiction of the cultures, historical fiction of the cultures, and contemporary literature of the cultures. Restricted to: Community College campuses only.
- L SC 298. Independent Study 1-3 cr.  
Individual studies directed by consenting faculty with prior approval of department chair. May be repeated for a maximum of 12 credits. Restricted to: Dona Ana campus only.

**LANG- LANGUAGES**

- LANG 111. Beginning Language I 4 cr.  
Developing language skills through study abroad for languages not offered at NMSU main campus. Specific languages to be identified with course subtitles. Prerequisite: Language placement exam or consent of the instructor. Main campus only.
- LANG 112. Beginning Language II 4 cr.  
Developing language skills through study abroad for languages not offered at NMSU main campus. Specific languages to be identified with course subtitles. Prerequisite: Language placement exam or consent of instructor. Main campus only.
- LANG 211. Intermediate Language I 3 cr.  
Developing language skills through study abroad for languages not offered at NMSU main campus. Specific languages to be identified with course subtitles.
- LANG 212. Intermediate Language II 3 cr.  
Developing language skills through study abroad for languages not offered at NMSU main campus. Specific languages to be identified with course subtitles. Prerequisite: Language placement exam or consent of instructor.
- LANG 451. Special Topics 1-3 cr.  
Selected topics relating to cultures or literatures of a specific country. Credit can be applied only towards fulfilling second language requirement. Credit is not accepted towards any graduate level major or minor. May be repeated for a maximum of 12 credits. Consent of instructor required.
- LANG 453. Independent Studies 1-3 cr.  
Individualized, self-paced projects for advanced students. Prerequisite: consent of instructor. May be repeated under different subtitles for a maximum of 6 credits.

**LAT- LATIN**

- LAT 111. Elementary Latin I 4 cr.  
Latin for beginners with no previous Latin. Restricted to: Main campus only.
- LAT 112. Elementary Latin II 4 cr.  
Latin for beginners. Prerequisite(s): C or better in LAT 111. Restricted to: Main campus only.
- LAT 211. Intermediate Latin I 3 cr.  
Reading and writing Latin. Prerequisite(s): C or better in LAT 112. Restricted to: Main campus only.
- LAT 212. Intermediate Latin II 3 cr.  
Reading and writing Latin. Prerequisite(s): C or better in LAT 211. Restricted to: Main campus only.

**LAWE- LAW ENFORCEMENT**

- LAWE 201. Introduction to Juvenile Delinquency 3 cr.  
An introductory overview of the juvenile justice system of due process, custody, detention and release. Note: course does not meet upper division requirements towards completion of Bachelor of Science in Criminal Justice. Community Colleges Only.
- LAWE 202. Police Patrol Procedures 3 cr.  
A critical review of police procedures and the influences on police behavior; policy development, including the police role; discretion; police community interaction and arrest, search and seizure. Community Colleges only.
- LAWE 203. Introduction to Police Supervision 3 cr.  
An introductory overview of police supervision and concerns as it applies to law enforcement. (Note: Course does not meet upper division requirements toward completion of Bachelor of Science in Criminal Justice.) Community Colleges only.
- LAWE 204. Introduction to Homeland Security 3 cr.  
A historical perspective of international and domestic terrorist threats and the need to develop cohesive response policies and practices in the interest of National Security. [Course does not meet requirements towards completion of Bachelor of Science in Criminal Justice.] Prerequisite(s): C J 101. Restricted to: Community Colleges only.
- LAWE 205. Practical Field Investigations 3 cr.  
Incorporates the current methods and techniques for the management of the crime scene, includes documentation, collection and preservation of evidence and case presentations. [Course does not meet requirements towards completion of Bachelor of Science in Criminal Justice.] Prerequisite(s): C J 101 and C J 221. Restricted to: Community Colleges only.
- LAWE 206. Traffic Enforcement and Crash Investigations 3 cr.  
History and development of traffic laws and regulations, including basic elements of traffic violations, detection, apprehension, impaired drivers and guidelines and procedures for effective crash investigations and reporting. Restricted to: Community Colleges only.
- LAWE 207. Legal Aspects of Law Enforcement 3 cr.  
An evaluation of police authority including responsibilities, civil liability, liability implications, legal obligations, legal restraints, laws of arrest, and search and seizure. Community Colleges only.
- LAWE 208. Security Protection Officer Level I 3 cr.  
This course is designed to provide basic security protection officer training conforming to the New Mexico Regulation and Licensing Department - Level I SPO training standards. Graded: S/U. Prerequisite(s): LAWE 208 Restricted to: All Community Colleges.
- LAWE 209. Security Protection Officer Level II 2 cr. (1+3P)  
This course combined with the Level I SPO training is designed to provide basic security protection officer training conforming to the New Mexico Regulation and Licensing Department - Level II SPO training standards. Graded: S/U. Prerequisite(s): LAWE 208. Restricted to: All Community Colleges.
- LAWE 210. Introduction to Law Enforcement 3 cr.  
An introduction to Criminal Justice System in our democratic society with emphasis on Law Enforcement, Criminal Justice Administration and application. (This is a Law Enforcement Academy Certification Course.) Consent of instructor required. Corequisite(s): LAWE 211, 212, 213, 214, 215, 216, 217, 218, 219, 222 & OEEM 155. Restricted to: Dona Ana campus only. Restricted to LAWE majors.



- LAWE 211. Policing in America** 3 cr.  
The study of Law Enforcement concepts in an American society with emphasis on law and order at the federal, state and local agencies. (This is a Law Enforcement Academy Certification course.) Consent of instructor required. Corequisite(s): LAW 210, 212, 213, 214, 215, 216, 217, 218, 219, 222 & OEEM 155. Restricted to: Dona Ana campus only. Restricted to LAW E majors.
- LAWE 212. Patrol Procedures** 3 cr.  
Basic patrol concepts with emphasis on police patrol activities including the practices and procedures necessary to perform the patrol functions and report writing. (This is a Law Enforcement Academy Certification course.) Consent of instructor required. Corequisite(s): LAW 210, 211, 213, 214, 215, 216, 217, 218, 219, 222 & OEEM 155. Restricted to: Dona Ana campus only. Restricted to LAW E majors.
- LAWE 213. Criminal Investigations** 3 cr.  
Fundamentals of criminal investigations including scene security, evidence collection, traffic accidents, case preparation and report writing. (This is a Law Enforcement Academy Certification course.) Consent of instructor required. Corequisite(s): LAW 210, 211, 212, 214, 215, 216, 217, 218, 219, 222 & OEEM 155. Restricted to: Dona Ana campus only. Restricted to LAW E majors.
- LAWE 214. Criminal Law & Court Procedures** 3 cr.  
Concepts on the rule of law, substantive and procedural law including liability, crimes against persons and property. (This is a Law Enforcement Academy Certification course.) Consent of instructor required. Corequisite(s): LAW 210, 211, 212, 213, 215, 216, 217, 218, 219, 222 & OEEM 155. Restricted to: Dona Ana campus only. Restricted to LAW E majors.
- LAWE 215. Emergency Vehicle Operations** 1 cr. (1P)  
Instruction on operating a patrol vehicle, procedures for emergency driving including legal issues related to emergency vehicle operations. (This is a Law Enforcement Academy Certification course.) Consent of instructor required. Corequisite(s): LAW 210, 211, 212, 213, 214, 216, 217, 218, 219, 222 & OEEM 155. Restricted to: Dona Ana campus only. Restricted to LAW E majors.
- LAWE 216. Traffic Law and Procedures** 3 cr. (2+3P)  
Instruction on law of motor vehicles including traffic enforcement operations and law enforcement officer's role in report writing, hazardous materials incidents and accident investigations. (This is a Law Enforcement Academy Certification course.) Consent of instructor required. Corequisite(s): LAW 210, 211, 212, 213, 214, 215, 217, 218, 219, 222 & OEEM 155. Restricted to: Dona Ana campus only. Restricted to LAW E majors.
- LAWE 217. Custody and Defensive Tactics** 3 cr. (9P)  
Instruction on the mechanics of arrest, custodial procedures, use of force, transporting prisoners and defensive tactics for officer protection. (This is a Law Enforcement Certification course.) Consent of instructor required. Corequisite(s): LAW 210, 211, 212, 213, 214, 215, 216, 218, 219, 222 & OEEM 155. Restricted to: Dona Ana campus only. Restricted to LAW E majors.
- LAWE 218. Basic Firearms** 3 cr. (1+6P)  
Familiarization on the operation and maintenance of firearms, safety, use of deadly force, body armor and marksmanship. (This is a Law Enforcement Academy Certification course.) Consent of instructor required. Corequisite(s): LAW 210, 211, 212, 213, 214, 215, 216, 217, 219, 222 & OEEM 155. Restricted to: Dona Ana campus only. Restricted to LAW E majors.
- LAWE 219. Law Enforcement Report Writing** 4 cr.  
Covers police, corrections, security and pre-sentence reports, including writing and use of forms. (This is a Law Enforcement Academy Certification course.) Consent of instructor required. Corequisite(s): LAW 210, 211, 212, 213, 214, 215, 216, 217, 218, 222 & OEEM 155. Restricted to: Dona Ana campus only. Restricted to LAW E majors.
- LAWE 220. Cooperative Experience** 3 cr.  
Supervised cooperative work program. Student is employed in an approved law enforcement occupation and rated by the employer and instructor. Community Colleges only. Prerequisite: consent of instructor.
- LAWE 221. Law Enforcement Internship** 3 cr.  
Application of knowledge, skills and abilities, in an agency as an intern and integrated member of a law enforcement affiliated agency. Prerequisite: consent of instructor.
- LAWE 222. Law Enforcement Physical Fitness** 2 cr. (6P)  
Instruction on health and physical fitness concepts, flexibility, strength, body composition and cardiovascular endurance. (This is a Law Enforcement Academy Certification course.) Consent of instructor required. Corequisite(s): LAW 210, 211, 212, 213, 214, 215, 216, 217, 218, 219 & OEEM 155. Restricted to: Dona Ana campus only. Restricted to LAW E majors.

- LAWE 233. Practical Approach to Terrorism** 3 cr.  
Gives responders an overall safety approach in recognizing and responding to incidents involving terrorism. Presents and overview in types of harm, explosive weapons, chemical weapons, biological weapons and radiological weapons. [Course does not meet requirements towards completion of Bachelor of Science in Criminal Justice.] Restricted to: Dona Ana campus only. Crosslisted with: OEFS 233

## LIB- LIBRARY SCIENCE

- LIB 101. Introduction to Research** 1 cr.  
A practical, hands-on, step-by-step introduction to the basics of university-level library research. Topics include the academic method, plagiarism, selection and use of information resources. (Eight-week course.)
- LIB 111. Introduction to Information Literacy in an Electronic Environment** 3 cr.  
Introduction to the basics of the research process; the organization, location and evaluation of information using print, non-print and electronic resources; and techniques of effective personal information management in a computerized setting. Uses a combination of active and hands-on learning methods as well as lectures.
- LIB 307. History of the Book: From Scroll to Scrolling** 3 cr.  
Describes the production and distribution of written works from papyrus scrolls through codex manuscripts and printed books to digital texts. Looks at how technology has influenced the transmission and presentation of texts and the way these factors affect how people perceive the texts. Studies the physical evidence books provide about their own histories. Crosslisted with: HIST 307
- LIB 311V. Information Literacy** 3 cr.  
Lecture, hands-on assignments, and written research projects to give students the technological skills and critical thinking abilities needed to use the printed and electronic information resources found on the Information Highway. Includes how to locate, critically evaluate, and apply information for academic, professional, and personal purposes. Prerequisite: ENGL 111G or equivalent; and consent of instructor.

## LING- LINGUISTICS

- LING 200G. Introduction to Language** 3 cr.  
Traditional fields of language study (sound, grammar, meaning) and newer ones (language as social behavior, language and cognition, language variation, animal communication).
- LING 301. Introduction to Psycholinguistics** 3 cr.  
Same as PSY 301.
- LING 302V. Language and Society** 3 cr.  
Study of how social identity, including such factors as ethnicity, age, sex, education, power, and socio-economic class, is expressed in language systems and how misunderstandings arise between groups. Research skills are emphasized.
- LING 303. Exploring Language Systems** 3 cr.  
Forms of linguistic semantic, syntactic, and phonological organization. Prerequisite(s): LING 200G.
- LING 405. Topics in Linguistics** 3 cr.  
Selected linguistics topics subtitled in the Schedule of Classes. Prerequisite: consent of instructor. May be repeated for a maximum of 6 credits under different subtitles.
- LING 451. Independent Studies in Linguistics** 1-3 cr.  
Individual or group study of selected topics. To be identified by subtitle. Prerequisites: LING 200G and prior arrangement with faculty supervisor. May be repeated for a maximum of 6 credits.

## M E- MECHANICAL ENGINEERING

- M E 102. Mechanical Engineering Orientation** 1 cr.  
Emphasis on tours of M E labs and NMSU facilities that illustrate possible career paths for mechanical engineers. Students are introduced to department faculty, student organizations, and support services at NMSU. Topics include role of good communication skills, using modern technology, team building, and intellectual property. Students are advised in planning balance of their academic program. Restricted to majors.
- M E 159. Graphical Communication and Design** 2 cr. (1+3P)  
Sketching and orthographic projection. Covers detail and assembly working drawings, dimensioning, tolerance specification, and design projects. Pre/Corequisite(s): Math 190.

- M E 222. Introduction to Product Development 3 cr. (2+3P)  
Introduction to modern methods used in the realization of products. Traditional manufacturing processes, such as metal stamping, turning, milling, and casting are reviewed. Modern methods of rapid prototyping and model making are discussed in context of computer-aided design. Techniques for joining metals, plastics, and composites are discussed. Role of quality control is introduced. Prerequisite: M E 159.
- M E 234. Mechanics-Dynamics 3 cr.  
Kinematics and dynamic behavior of solid bodies utilizing vector methods. Prerequisite(s): MATH 192, C E 233. Pre/Corequisite(s): MATH 291.
- M E 236. Engineering Mechanics I 3 cr.  
Force systems, resultants, equilibrium, distributed forces, area moments, friction, and kinematics of particles. Prerequisite(s): MATH 192. Pre/Corequisite(s): PHYS 215. Restricted to: Main campus only.
- M E 237. Engineering Mechanics II 3 cr.  
Kinetics of particles, kinematics and kinetics rigid bodies, systems of particles, energy and momentum principles, and kinetics of rigid bodies in three dimensions. Prerequisite(s): M E 236. Pre/Corequisite(s): MATH 291. Restricted to: Main campus only.
- M E 240. Thermodynamics 3 cr.  
First and second laws of thermodynamics, irreversibility and availability, applications to pure substances and ideal gases. Prerequisite: PHYS 215G.
- M E 261. Mechanical Engineering Problem Solving 4 cr. (3+3P)  
Introduction to programming syntax, logic, and structure. Numerical techniques for root finding, solution of linear and nonlinear systems of equations, integration, differentiation, and solution of ordinary differential equations will be covered. Multi function computer algorithms will be developed to solve engineering problems. Prerequisite(s): MATH 192.
- M E 326. Mechanical Design 3 cr.  
Design methodology and practice for mechanical engineers. Prerequisites: M E 237 and C E 301.
- M E 328. Engineering Analysis I 3 cr.  
Mathematical methods for exact and approximate solutions of engineering problems. Prerequisite: MATH 392.
- M E 330. Environmental Management Seminar I 1 cr.  
Survey of practical and new developments in hazardous and radioactive waste management provided through a series of guest lectures and reports of ongoing research. Restricted to: Main campus only. Restricted to M E majors. Crosslisted with: C E 330, CH E 330, E E 330, E S 330, I E 330, WERC 330 and E T 330
- M E 331. Intermediate Strength of Materials 3 cr.  
Covers stress and strain, theories of failure, curved flexural members, flat plates, pressure vessels, buckling, and composites. Prerequisites: C E 301 and MATH 392.
- M E 332. Vibrations 3 cr.  
Vibration of single and n-degree of freedom systems considering free, forced, and damped motion. Lagrange s equations. Dynamic stability. Controls. Matrix iteration. Prerequisite(s): M E 237 and M E 261.
- M E 333. Intermediate Dynamics 3 cr.  
Three dimensional kinematics and kinetics, orbal motion, Lagrange s equations, dynamic stability, and controls. Prerequisite: M E 237.
- M E 338. Fluid Mechanics 3 cr.  
Properties of fluids. Fluid statics and fluid dynamics. Applications of the conservation equations continuity, energy, and momentum to fluid systems. Prerequisite(s): M E 237. Pre/Corequisite(s): C E 301 and M E 328. Restricted to M E majors.
- M E 340. Applied Thermodynamics 3 cr.  
Thermodynamic cycles, Maxwell relations, Gibbs and Helmholtz functions, mixtures, psychometrics, chemical reactions, chemical equilibrium. Prerequisite: M E 240.
- M E 341. Heat Transfer 3 cr.  
Fundamentals of conduction, convection, and radiation. Design of heat transfer systems. Prerequisites: M E 240, M E 328.
- M E 345. Experimental Methods I 3 cr. (2+3P)  
Emphasis on experimental techniques, basic instrumentation, data acquisition and analysis, and written presentation of results. Includes experiments in dynamics and deformable body mechanics. Prerequisite(s): MATH 392, M E 237, and M E 240. Pre/Corequisite(s): C E 301.
- M E 400. Undergraduate Research 1-3 cr.  
Performed with the direction of a department faculty member. May be repeated for a maximum of 6 credits. Prerequisite: consent of faculty member.
- M E 401. Heating/Air-Conditioning System 3 cr.  
Same as E T 401.
- M E 405. Special Topics 3 cr.  
Topics of modern interest to be offered by the departmental staff. Prerequisite: consent of instructor.
- M E 425. Design of Machine Elements 3 cr.  
Design of machine elements through the application of mechanics. Fatigue and theories of failure. Design projects assigned. Prerequisite(s): M E 326.
- M E 426. Design Project Laboratory I 3 cr. (6P)  
Students address a design problem in which innovation and attention to detail are emphasized. Solution of the problem entails applications of mechanics and/or the thermal sciences. Prerequisite(s): M E 326 and (M E 338 or A E 339). Pre/Corequisite(s): M E 425 and M E 341.
- M E 427. Design Project Laboratory II 3 cr. (6P)  
Continuation of M E 426. Prerequisite: M E 426.
- M E 430. Environmental Management Seminar II 1 cr.  
Survey of practical and new developments in hazardous and radioactive waste management provided through a series of guest lectures and reports of ongoing research. Restricted to: Main campus only. Crosslisted with: C E 430, CH E 430, E E 430, E S 430, E T 430, I E 430 and WERC 430
- M E 443. Internal Combustion Engines 3 cr.  
Cycles, characteristics, and principles of combustion for air breathing engines. Course taught on an as-needed basis. Prerequisite: M E 340.
- M E 445. Experimental Methods II 3 cr. (2+3P)  
Emphasis on experimental techniques, instrumentation and data acquisition in fluid mechanics, heat transfer, and thermodynamics. Laboratory results will be presented in written and verbal formats. Prerequisite(s): (M E 338 or A E 339), M E 340, M E 341, and M E 345.
- M E 449. Mechanical Engineering Senior Seminar 1 cr.  
Senior seminar course covering topics relevant to graduating mechanical engineering seniors (job placement, interviewing techniques, resume preparation). Prerequisite: senior standing.
- M E 452. Introduction to Automation and Control System Design 3 cr. (2+3P)  
Control system design and implementation. Emphasis on practical applications of traditional control algorithms to mechanical engineering applications in thermofluid systems and mechanical systems. Design of feedback analog and digital control systems. Introduction to robots and automation. Lab assignments include programming industrial robotic and automation systems.
- M E 460. Applied Finite Elements 3 cr.  
Introduction to the practical aspects of structural finite element modeling. Course focuses on providing a working knowledge of how to effectively incorporate finite element techniques into the design process. Prerequisite(s): Senior Standing.
- M E 480. Nuclear Systems 3 cr.  
Fundamentals of nuclear energy, systems, design, and analysis. Applications of nuclear energy in power production. Survey of modern nuclear systems. Prerequisite: MATH 192G or consent of instructor.
- M E 481. Alternative and Renewable Energy 3 cr.  
Current and future energy needs of the United States and the world will be considered primarily from the standpoint of renewable energy sources such as solar, wind, ocean, and biomass. Technical, economic, and environmental aspects of each technology will be addressed. Prerequisite(s): M E 341, and (M E 338 or A E 339).
- M E 487. Mechatronics 3 cr. (2+3P)  
Introduction to the analysis and design of computer-controlled electromechanical systems, including data acquisition and conversion, force and motion sensors, actuators, mechanisms, feedback control, and robotic devices. Students required to work in teams to construct and test simple robotic systems. Prerequisites: E E 201, and M E 345.
- M SC- MILITARY SCIENCE**
- M SC 110. Introduction to Military Science 2 cr. (2+1P)  
Concepts of leadership, including basic drill, fitness sessions, rappelling, first aid, map reading, and basic marksmanship. Optional physical fitness sessions and weekend exercises.
- M SC 111. Introduction to Leadership 2 cr. (2+1P)  
Learning and application of leadership, as well as relating organizational ethics to effective leadership using communication skills to improve individual performance. Optional physical fitness sessions and weekend exercises.

- M SC 210. Self/Team Development** 3 cr. (3+1P)  
Learning and application of leadership skills to building effective teams, using oral/written skills, planning, and coordination of group efforts. Include advanced first aid, land navigation, and basic military tactics. Leadership Lab and three physical fitness sessions per week required.
- M SC 211. Leadership in Action and Team Building** 3 cr. (3+1P)  
Individual and team aspects of military tactics in small unit operations. Use of radio, movement, planning for safety/security and pre-execution checks. Continued leadership development and techniques for training others. Leadership Lab and three physical fitness sessions per week required.
- M SC 225. Directed Studies** 1-3 cr.  
Individual directed studies under supervision of designated faculty. Prerequisite: GPA 2.5 or better. May be repeated for a maximum of 12 credits. No S/U option.
- M SC 310. Leading Small Organizations I** 3 cr.  
Practical opportunities to lead small groups in situations of graduated complexity. Use of small unit defensive tactics and opportunities to conduct training for lower division students. Leadership Lab M SC 310L, three physical fitness sessions per week, and weekend exercises required. Prerequisite: must meet Basic Course of Military Science requirements. Corequisite: M SC 310L.
- M SC 310 L. Advanced Course Leadership Laboratories** 1 cr.  
Planning, coordination, execution and evaluation of training and activities with basic course students and ROTC program. Students develop and refine leadership skills in positions of responsibility. Open only to students taking M SC 310. Corequisite: M SC 310.
- M SC 320. Leading Small Organizations II** 3 cr.  
Delegation and supervision based on leadership case studies that require planning and adaptation to the unexpected in organizations under stress. Use of ethical decision making to enhance team performance. Leadership Lab M SC 310L, three physical fitness sessions per week, and weekend exercises required. Prerequisite: M SC 310 or consent of instructor. Corequisite: M SC 320L.
- M SC 320 L. Leading Small Organization Lab** 1 cr.  
Practice and refinement of leadership skills. Different roles assigned for students at different levels in the program. Planning, coordination, execution and evaluation of training and activities with basic course students and ROTC program. Open to students taking M SC 320. Corequisite: M SC 320.
- M SC 325. Advanced Directed Studies** 1-3 cr.  
Directed individual study of advanced subjects. Prerequisite: GPA 2.5 or better. May be repeated for a maximum of 12 credits. No S/U option.
- M SC 401. Leadership Challenges and Goal Setting** 3 cr.  
Planning, conducting and evaluating activities of the ROTC cadet organization, including the articulation of goals, and actuation of plans to attain them. Assessment of organizational skills and development of strategies to improve group cohesion through learning and application of Army policies and programs. M SC 401L, three physical fitness sessions per week, and weekend exercises required. Prerequisite: M SC 320 or consent of instructor. Corequisite: M SC 401L.
- M SC 401 L. Advanced Course Leadership Laboratories** 1 cr.  
Different roles assigned for students at different levels in the program. Practice and refinement of leadership skills. Planning coordination, execution and evaluation of training and activities with basic course students and ROTC program. Open only to students taking M SC 401. Corequisite: M SC 401.
- M SC 402. Transition to Lieutenant** 3 cr.  
Continues methodology from M SC 401. Identification and resolution of ethical dilemmas along with counseling and motivation techniques. Examination of tradition and law as these issues relate to the Army officer and prepare the student to be a successful Army lieutenant. Leadership Lab M SC 402L, three physical fitness sessions per week and weekend exercises required. Prerequisite: M SC 401 or consent of instructor. Corequisite: M SC 402L.
- M SC 402 L. Transition to Lieutenant Lab** 1 cr.  
Different roles assigned for students at different levels in the program. Practice and refinement of leadership skills. Planning, coordination, execution, and evaluation of training and activities with basic course students and ROTC program. Open only to students taking M SC 402. Corequisite: M SC 402.
- M SC 425. Practicum** 1-4 cr.  
Independent projects conducted under the direction of designated faculty, and concerned with analysis of selected leadership or management problems. May be repeated for a maximum of 16 credits. No S/U option.

- M SC 465. Leading Small Organization - Graduate Level** 3 cr.  
Practical opportunities to lead small groups in situations of graduated complexity. Use of small unit defensive tactics and opportunities to conduct training for graduate students. Leader Lab M SC 465L, three physical fitness sessions per week and weekend exercises required. Research paper required. Prerequisite: consent of PMS. Corequisite: MSC 465L. No S/U option.
- M SC 465 L. Advanced Course Leadership Lab - Graduate Level** 1 cr.  
Planning, coordination, execution and evaluation of training and activities with basic course students and ROTC program. Students develop and refine leadership skills in positions of responsibility. Open only to students taking MSC 465. Prerequisite: consent of PMS. Corequisite: MSC 465.
- M SC 466. Graduate-Level Leading Small Organizations** 3 cr.  
Open only to students taking M SC graduate-level courses. Delegation and supervision based on case studies. Use of ethical decision making to enhance team performance. Three physical fitness sessions per week, weekend exercises, and a research paper required. Prerequisite: consent of PMS. Corequisite: M SC 466L.
- M SC 466 L. Graduate-Level Leading Small Organizations Lab** 1 cr.  
Open only to students taking M SC graduate-level courses.

### **MAT- AUTOMATION AND MANUFACTURING**

- MAT 101. Introduction to Automation** 3 cr.  
This course will introduce the students to the world of manufacturing from business to production and from raw material to finished goods. Students will be exposed to various manufacturing industries making various products around the world. Course will include historical and present trends.
- MAT 105. Introduction to Manufacturing** 3 cr. (2P)  
Introduction to manufacturing evolution from basic assembly process to modern automated processes. Covers history, employability, soft skills, quality measurements, teamwork concept, production requirements, and considerations in plan layout and design. Minimum math proficiency of CCDM 114 required or math placement into MATH 120 or higher. Restricted to: Community Colleges only. Crosslisted with: AERT 112
- MAT 106. Applied Manufacturing Practices** 3 cr. (2+2P)  
Use of measuring tools in manufacturing process and quality control. These tools include: vernier and digital micrometers, calipers, height gauges, hole gauges, pin gauges, electrical pressure/flow, temperature measuring, stress/strain measurements, and non-destructive testing (eddy currents, magnetic particle, ultrasonic, bubble emission, x-ray, Gamma ray, radiography, visual inspection, ring test, taping & Zyglol). Instruction to use of coordinate machine while covering the safety issues that pertains to these types of tools and equipment. Crosslisted with: AERT 114
- MAT 107. Computer Integrated Manufacturing** 3 cr. (2+3P)  
Applies principles of robotics and automation to Computer Aided Design (CAD) design. The course builds on computer solid modeling skills developed in Introduction to Engineering Design, and Design and Drawing Production. Students use Computer Numerical Control (CNC) equipment to produce actual models of their three-dimensional designs. Fundamental concepts of robotics used in automated manufacturing, and design analysis are included. Restricted to: Community Colleges only.
- MAT 108. Metrology, Safety and Quality Control for Manufacturing** 3 cr. (1P)  
Course will illustrate how various products are manufactured along with associated process. Mechanical behavior such as bending, cold worked, strained, work hardened, & heat transfer will be emphasized as well. In lab, students will learn how to make selected products starting from prints to complete projects including quality control. Restricted to: Community College campuses only.
- MAT 110. Machine Operation and Safety** 3 cr. (2+2P)  
Introduction to the operation and safety aspects of various types of machinery and equipment, including both mechanical and electrical machines, Rigid Tubing, and Flexible Lines. Maintenance and safety operation of industrial equipment will also be covered. Restricted to: Community Colleges only. Crosslisted with: AERT 115
- MAT 115. Print Reading for Industry** 3 cr. (2+2P)  
Reading, interpretation, and revisions of industrial technical drawings common to manufacturing, Aerospace, machine parts, electrical, hydraulic, and Pneumatic drawings. Interpretation of engineering drawings and related shop calculations. Introduction Restricted to: Community Colleges only. Crosslisted with: AERT 113



- MAT 125. Industrial Electricity Maintenance** 4 cr. (3+3P)  
Electrical safety rules, DC, AC, and solid state circuits, use and care of common measuring instrumentation, schematic and wiring diagrams, electromagnetism, National Electric Code branch circuits. Relationship between motor power, speed, and torque, basic application of relay circuits, motor control circuits, inductance and capacitance factors, transformers, solid state devices and applications, digital devices and controls. Prerequisite: OETS 118 or CCDM 114, or consent of instructor.
- MAT 130. Applied Industrial Electricity I** 4 cr. (3+3P)  
Electrical safety, AC and DC circuits, use and care of common measuring instrumentation, schematic and wiring diagrams, electromagnetism, National Electric Code branch circuits. Prerequisite: ELT 120 or OETS 118 and consent of instructor.
- MAT 135. Applied Industrial Electricity II** 4 cr. (3+3P)  
Relationship between motor power, speed, and torque, basic application of relay circuits, motor control circuits, inductance and capacitance factors, transformers, solid state devices circuits and applications. Prerequisite: MAT 130.
- MAT 140. Industrial Digital Devices** 4 cr. (3+3P)  
Digital techniques, practical applications of number systems, basic logic gates, Boolean algebra, combination circuits, tri-state logic, latches and flip-flops, counters and registers, and digital position encoders. Prerequisite: MAT 130 or consent of instructor.
- MAT 145. Electromechanical Systems for Non-Majors** 4 cr. (3+3P)  
Electromechanical system interfacing. Principles and applications of preventive and corrective maintenance procedures on automated industrial production machines using system technical and maintenance manuals to develop troubleshooting procedures using systems block and schematic diagrams. Prerequisite: consent of instructor.
- MAT 151. Introduction to Metalworking I** 3 cr. (4+2P)  
Measuring instruments, including steel rules, combination and transfer tools, micrometers, vernier instruments, bevel instruments, and indicators. Shop safety and first aid, introduction to cutting fluids, saws and sawing, and drill presses. Prerequisite: OETS 118 or concurrent enrollment.
- MAT 152. Introduction to Metalworking II** 3 cr. (4+2P)  
Gage blocks and sine bars, cutting and noncutting hand tools, engine lathes, grinding machines, and concepts of numerical control. Prerequisites: MAT 115, MAT 151, and OETS 118.
- MAT 153. Basic Machining Technology I** 5 cr. (6+2P)  
Introduction to EDM, saws and sawing practices, and various lathe operations. Prerequisite: MAT 152.
- MAT 154. Basic Machining Technology II** 5 cr. (6+3P)  
Metallurgy for machinists and computer programming relating to NC and CNC. Prerequisite: MAT 153.
- MAT 180. Applied Industrial Chemistry for Technicians** 4 cr. (3+3P)  
Basic concepts of chemistry and their roles in industrial processes. Includes classification and structure of matter, identification of types of chemical reactions and their general industrial applications. General principles of laboratory and industrial safety emphasized. Prerequisite: ELT 120 or equivalent math course.
- MAT 190. Physics for Technicians** 4 cr. (3+3P)  
Basic concepts of physics and their application to technology including force, work, rate, momentum, resistance, energy, power, waves, radiation, and optics. Prerequisite: ELT 120 or equivalent math course.
- MAT 205. Statistical Controls for Manufacturing Technicians** 3 cr. (2+2P)  
Use of hardware and software for quality assurance to include the design of experiments, sampling techniques, SPC, control chart application and development, and process reliability. Prerequisite: ELT 120 or equivalent.
- MAT 220. Vacuum Technology** 2 cr. (2+1P)  
Vacuum technology and vacuum systems and their applications in the manufacturing industry. Includes gas laws, operation and applications of vacuum pumps, gauges, valves and system leak detection. Prerequisite: ELT 120. Corequisite: MAT 240 or consent of instructor.
- MAT 221. Cooperative Experience I** 1-6 cr.  
Supervised cooperative work program. Student is employed in an approved occupation and rated by employer and instructor. Student meets in a weekly class. Prerequisite: consent of instructor. Graded S/U.
- MAT 222. Cooperative Experience II** 1-6 cr.  
Continuation of MAT 221. Maximum of 6 credits. Prerequisite: consent of instructor. Graded S/U.
- MAT 230. Power RF** 2 cr. (2+1P)  
RF plasma energy and its applications in the manufacturing industry. Includes plasma physics, safety, RF applications, RF generators, transmission lines, and RF interference. Prerequisites: ELT 135 and ELT 205. Corequisite: MAT 220 or consent of instructor.
- MAT 234. Industrial Electricity Maintenance** 3 cr. (2+2P)  
Introduction into electrical systems, theory and uses for the different types of motors used in the industry and related industrial safety practices. DC, AC stepper and servo motors, motor speed and torque, motor performance, and efficiency, motor control fundamentals using variable frequency drives, vector controls, servo and stepper drives. Community Colleges Only. Prerequisites: All ELT 100 level courses in electronics technology or consent of instructor.
- MAT 235. Programmable Logic Controllers Pneumatics** 4 cr. (3+3P)  
Introduction to theory and application of pneumatic power transfer and control. Programmable logic controllers (PLC s) introduced as controlling elements for electropneumatic systems. Prerequisite: MAT 125 or MAT 130 or consent of instructor.
- MAT 240. Electromechanical Devices** 4 cr. (2+4P)  
Theory and application of electromechanical devices and digital control circuits. Includes AD and DA converters, pneumatics, hydraulics, programmable logic controllers, DC, AC, and stepper motors, and servomechanisms. Prerequisite(s): MAT 160 and (MAT 105 or (MAT 110 & MAT 135)). Restricted to: Community Colleges only. Crosslisted with: AERT 211
- MAT 243. Industrial Mechanical Elements** 3 cr. (2+2P)  
Introduction to mechanical systems, theory, characteristics and uses for the different types of mechanical power transmission systems used in the industry, and related industrial safety practices. Topics include: safety, drives, shafts, maintenance and lubrication.
- MAT 245. Electromechanical Systems** 3 cr. (2+2P)  
Electromechanical system interfacing. Principles and applications of preventive and corrective maintenance procedures on industrial production machines using system technical and maintenance manuals to develop troubleshooting procedures using systems block and schematic diagrams. Pre/Corequisite(s): AERT 211 or MAT 240. Restricted to: Community Colleges only. Crosslisted with: AERT 222
- MAT 250. Semiconductor Manufacturing Technology I** 3 cr. (2+2P)  
Contemporary processes, materials and equipment used in the manufacturing of semiconductors. Emphasizes wafer preparation, contamination control, oxidation, diffusion, and thin films. Prerequisites: ELT 205 and ELT 160. Corequisite: MAT 230.
- MAT 251. Semiconductor Manufacturing Technology II** 3 cr. (2+2P)  
Students continue to explore processes, materials, and equipment used in semiconductor manufacturing. Covers ion implantation, photo-lithography and etch. Prerequisite: MAT 250. Corequisite: MAT 220.
- MAT 255. Special Problems in Semiconductor Manufacturing Technology1-6 cr.**  
Individual studies in areas directly related to semiconductor manufacturing. Prerequisite: consent of instructor. May be repeated for a maximum of 12 credits.
- MAT 265. Special Topics** 1-6 cr.  
Course subtitled in the Schedule of Classes. Prerequisite: consent of instructor. May be repeated for a maximum of 12 credits.

## MATH- MATHEMATICS

The basic skills requirement in mathematics may be met by earning a grade of C or higher in both MATH 111 and MATH 112, or in any lower-division mathematics course numbered 120 or above. For other options, see Basic Academic Skills in the General Information chapter.

A student may not receive credit for a lower-division mathematics course if it serves as a prerequisite to a lower-division math course that the student had previously passed with a grade of C or better.

NOTE: Students without an adequate placement score to enroll in MATH 111, MATH 120 or MATH 210G can gain admission to the course by earning a C or better in CCDM 114N at an NMSU branch campus. Students wishing to enroll in MATH 121, 142G, 180, 191, 230, 235, 279, 280, or STAT 251 must satisfy one of the following: (a) have passed the stated prerequisite course with a C or better, or (b) have earned an adequate score on the Mathematics Placement Examination, the results of which will be made available to the student's advisor. The Mathematics Placement Examination (MPE) is given daily in Walden Hall when school is in session and during new student programs. A student who has not satisfied one of these requirements before registering may enroll temporarily in UNIV 000, then drop/add to an appropriate course at the beginning of the semester after taking the MPE and being advised.



- MATH 101. General Supplemental Instruction I** 1 cr.  
Collaborative workshop for students enrolled in Intermediate Algebra. Corequisite: MATH 120. May be repeated for a maximum of 2 credits. Graded S/U.
- MATH 102. General Supplemental Instruction II** 1 cr.  
Collaborative workshop for students enrolled in College Algebra. Corequisite: MATH 121G. May be repeated for a maximum of 2 credits. Graded S/U.
- MATH 107. Topics in Mathematics** 1-3 cr.  
Topics to be announced in the Schedule of Classes. Maximum of 3 credits per semester. Total credit not to exceed 6 credits. Prerequisite: consent of instructor. Community Colleges only.
- MATH 111. Fundamentals of Elementary Mathematics I** 3 cr.  
Numbers and the four operations of arithmetic. Understanding and comparing multiple representations of numbers and operations, in particular how these representations build from whole numbers to integers to fractions and decimals. Applying properties of numbers and operations in contextual situations, including measurement, and making reasonable estimates. Reasoning, communicating, and problem solving with numbers and operations. Applications to ratio, and connections with algebra. Taught primarily through student activities and investigations. Prerequisite(s): ENGL 111G and grade of C or better in MATH 120.
- MATH 112G. Fundamentals of Elementary Math II** 3 cr.  
Geometry and measurement. Multiple approaches to solving problems and understanding concepts in geometry. Analyzing and constructing two- and three-dimensional shapes. Measurable attributes, including angle, length, area, and volume. Understanding and applying units and unit conversions. Transformations, congruence, and symmetry. Scale factor and similarity. Coordinate geometry and connections with algebra. Reasoning and communicating about geometric concepts. Taught primarily through student activities and investigations. Prerequisite(s): C or better in MATH 111.
- MATH 120. Intermediate Algebra** 3 cr.  
Linear and algebraic functions as they arise in real world problems. Exponential and logarithmic functions. Equations and inequalities and their solutions considered symbolically, graphically and numerically. Prerequisite: adequate score on the Mathematics Placement Examination (see note above.)
- MATH 121G. College Algebra** 3 cr.  
Fundamental concepts of functions, including algebraic and graphical properties. Fitting functions to data. Finding zeroes and extreme values. Solving systems of equations. Prerequisites: Adequate math placement score or C or better in MATH 120.
- MATH 142G. Calculus for the Biological and Management Sciences** 3 cr. (2+2P)  
Review of functions. Derivatives, exponential and logarithmic functions, antiderivatives and indefinite integrals, basic ordinary differential equations and growth models, with an emphasis on applications. Includes a significant writing component. Prerequisite(s): C or better in MATH 121G.
- MATH 151. The Mathematics of Hydraulic Engineering** 3 cr.  
A combination of physical, mathematical, and computer simulation models will be developed to explore topics in hydraulic engineering that are central to environmental engineering applications. Same as CE 141. Prerequisite: MATH 121G or consent of instructor.
- MATH 152. Chemistry and Mathematics of the Molecular World** 3 cr.  
Introduction to chemical and mathematical concepts relevant to understanding the molecular world. Topics include atomic and molecular structure, intermolecular forces, physical states of matter, phase transitions, equations of motions, vectors, polynomial equations, and computer-based molecular modeling techniques. Same as CHEM 152. Prerequisite: MATH 121G or consent of instructor.
- MATH 175. Trigonometry** 3 cr.  
Trigonometric functions, graphs, identities, inverse functions, polar coordinates and applications. Complex numbers, curve fitting, roots of polynomials, exponential and logarithmic functions, conics, systems of equations and matrices. May not be taken for credit by students having credit for MATH 136. Prerequisite: C or better in MATH 121G. Restricted to Community Colleges only.
- MATH 190G. Trigonometry and Precalculus** 4 cr. (3+2P)  
Elementary functions used in the sciences with emphasis on trigonometric functions and their inverses. Polar coordinates. Complex numbers and Euler's formula. Analytic geometry and vectors. Prerequisite: adequate score on Mathematics placement exam or a C or better in MATH 121G (see note at beginning of this section).
- MATH 191G. Calculus and Analytic Geometry I** 4 cr.  
Algebraic, logarithmic, exponential, and trigonometric functions, theory and computation of derivatives, approximation, graphing, and modeling. May include an introduction to integration. Prerequisite(s): MATH 190G.
- MATH 192G. Calculus and Analytic Geometry II** 4 cr.  
Riemann sums, the definite integral, anti-derivatives, fundamental theorems, use of integral tables, numerical integration, modeling, improper integrals, differential equations, series, Taylor polynomials. Prerequisite(s): MATH 191G.
- MATH 200. Directed Study** 1-3 cr.  
Prerequisite: consent of the instructor. May be repeated for a maximum of 6 credits. Graded S/U.
- MATH 210G. Mathematics Appreciation** 3 cr.  
Mathematics and its role in the development and maintenance of civilization. Prerequisites: High school algebra, and an adequate score on the Mathematics Placement Examination.
- MATH 215. Fundamentals of Elementary Mathematics III** 3 cr.  
Probability, statistics, ratios, and proportional relationships. Experimental and theoretical probability. Collecting, analyzing, and displaying data, including measurement data. Multiple approaches to solving problems involving proportional relationships, with connections to number and operation, geometry and measurement, and algebra. Understanding data in professional contexts of teaching. Taught primarily through student activities and investigations. Prerequisite(s): C or better in MATH 112 and admittance into the TEP program.
- MATH 230. Matrices and Linear Programming** 3 cr.  
Linear algebra, linear programming and network models, with applications to the behavioral sciences. Prerequisite: C or better in MATH 121G.
- MATH 235. Calculus for the Technical Student I** 3 cr.  
Intuitive differential and integral calculus with applications to engineering. Prerequisite: C or better in MATH 190G.
- MATH 236. Calculus for the Technical Student II** 3 cr.  
A continuation and extension of the material in MATH 235. Prerequisites: C or better in MATH 235 or in MATH 192G.
- MATH 242. Calculus for the Biological and Management Sciences II** 3 cr.  
Calculus of functions of several variables, techniques of integration, differential equations, infinite series. Applications. Prerequisite: C or better in MATH 142G.
- MATH 275G. Spirit and Evolution of Mathematics** 3 cr.  
Same as HON 275G.
- MATH 278. Discrete Mathematics for Computer Science** 4 cr. (3+1P)  
Same as C S 278. Prerequisite: at least C or better in C S 171.
- MATH 279. Introduction to Finite Mathematics** 3 cr.  
Logic; sets, relations, and functions; introduction to mathematical proofs. Applications to computer science. Prerequisite: C or better in MATH 190G. (See note at beginning of this section.)
- MATH 280. Introduction to Linear Algebra** 3 cr.  
Systems of equations, matrices, vector spaces and linear transformations. Applications to computer science. Prerequisite(s): Grade of C or better in MATH 190G.
- MATH 291G. Calculus and Analytic Geometry III** 3 cr.  
Vector algebra, directional derivatives, approximation, max-min problems, multiple integrals, applications, cylindrical and spherical coordinates, change of variables. Prerequisite: grade of C or better in MATH 192G.
- MATH 292. Calculus and Analytic Geometry IV** 3 cr.  
Vector calculus, linear algebra, selected topics. Prerequisite: grade of C or better in MATH 291G or equivalent. Community Colleges only.
- MATH 300. Readings** 1-3 cr.  
A selection of readings and reports in the mathematical sciences, the breadth and depth of which is deemed to fit the needs of the student. Prerequisite: consent of instructor. Graded S/U.
- MATH 301. Special Topics** 1-3 cr.  
Specific subjects to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits.
- MATH 308. Supervised College Teaching** 1 cr.  
Skills for effective tutoring of precalculus mathematics within a mathematics learning center environment. Prerequisite: consent of instructor. Graded S/U.

- MATH 313. Fundamentals of Algebra and Geometry I** 3 cr. (3+1P)  
Covers algebra combined with geometry based on measurements of distance (metric geometry). Secondary mathematics education majors may take course as a math elective. MATH 313 does not substitute for other required math courses. Does not fulfill requirements for major in mathematics. Prerequisites: MATH 111 and MATH 112G.
- MATH 316. Calculus with Hands-on Applications** 3 cr.  
This course, primarily for prospective teachers, is taught in an interactive laboratory format. Students design and construct physical objects for which the planning stage requires calculus techniques. All numerical computations are carried out on graphing calculators. Meets simultaneously with MATH 516, primarily for practicing teachers. Secondary math education majors may take course as a math elective. MATH 316 does not fulfill requirements for majors in mathematics. Consent of instructor required.
- MATH 331. Introduction to Modern Algebra** 3 cr.  
Elements of abstract algebra, including groups, rings and fields. Prerequisite: C or better in MATH 279 and MATH 280.
- MATH 332. Introduction to Analysis** 3 cr.  
Development of the real numbers, a rigorous treatment of sequences, limits, continuity, differentiation, and integration. Prerequisite: C or better in MATH 192G and MATH 279.
- MATH 375. Business Applications** 3 cr.  
Matrix algebra and linear models, vector and matrix norms, applications to economics and statistics, linear programming, Lagrange multipliers and applications to economics, introduction to nonlinear programming, game theory. Computer software (Excel, LINDO and LINGO) will be introduced for solving numerical problems. Does not fulfill requirements for degrees in mathematics. Prerequisite(s): C or better in Math 142G, or in MATH 191G, or in Math 235.
- MATH 377. Introduction to Numerical Methods** 3 cr.  
Basic numerical methods for interpolation, approximation, locating zeros of functions, integration, and solution of linear equations. Computer-oriented methods will be emphasized. Prerequisites: grade of C or better in MATH 192G and some programming experience.
- MATH 391. Vector Analysis** 3 cr.  
Calculus of vector valued functions, Green's and Stokes' theorems and applications. Prerequisite: grade of C or better in MATH 291G.
- MATH 392. Introduction to Ordinary Differential Equations** 3 cr.  
Introduction to differential equations and dynamical systems with emphasis on modeling and applications. Basic analytic, qualitative and numerical methods. Equilibria and bifurcations. Linear systems with matrix methods, real and complex solutions. Prerequisite: C or better in MATH 192G or B or better in MATH 236.
- MATH 400. Undergraduate Research** 1-3 cr.  
Prerequisite: consent of faculty member. May be repeated for a maximum of 6 credits. Graded S/U.
- MATH 401. Special Topics** 1-3 cr.  
Specific subjects to be announced in the Schedule of Classes. May be used to fulfill a course requirement for the mathematics major. Prerequisite: An upper division MATH or STAT course, and consent of instructor.
- MATH 402. General Special Topics** 1-3 cr.  
Specific subjects to be announced in the schedule of classes. May not be used to fulfill a requirement for the mathematics major. Prerequisite: Consent of instructor
- MATH 411V. Great Theorems: The Art of Mathematics** 3 cr.  
Adopts the view of mathematics as art, using original sources displaying the creation of mathematical masterpieces from antiquity to the modern era. Original sources are supplemented by cultural, biographical, and mathematical history placing mathematics in a broad human context. Prerequisites: Grades of B or better in MATH 192G and any upper division MATH/STAT course, with overall GPA of 3.2 or better, or consent of instructor. Same as HON 411G.
- MATH 421. Financial Mathematics I** 3 cr.  
Types of derivatives, forwards and futures, options, returns and payoffs, Arrow-Debre, complete and incomplete markets, the one period model, the binomial option pricing model, binomial trees, martingales and sub martingales, Brownian motion, stochastic integrals, the Ito integral, Ito's dilemma, the Black-Scholes model, the Black-Scholes formula, European options, American options, free boundary problems, variational inequalities. This course is offered simultaneously with Math 521. Prerequisite: C or better in Math 280 or Math 480 and Stat 371 or consent of instructor.
- MATH 422. Financial Mathematics II** 3 cr.  
Bonds, swaps, exotic options, barrier options, Asian options, look back options, options with transaction costs, Fokker Plank theory, computing expectations, the Heath-Jarrow- Morton theorem, the Ho-Lee model, stochastic volatility models, exponential-affine models, numerical methods. This course is offered simultaneously with Math 522. Prerequisite: C or better in Math 421 or consent of instructor
- MATH 423. Numerical Optimization and Applications to Financial Mathematics** 3 cr.  
Dynamic optimization of a monopolist, trading off inflation and unemployment, the optimal adjustment of labor demand, infinite planning horizon, the optimal investment path of a firm, the optimal social saving behavior, phase-diagram analysis, optimal control theory, the political business cycle, the dynamics of a revenue-maximizing firm, economic examples of state-space constraints. This course is offered simultaneously with Math 523. Prerequisite: Math 421.
- MATH 430. Combinatorial Mathematics** 3 cr.  
Methods for solving combinatorial construction and enumeration problems. Topics include Ramsey theory, generating functions, matchings, and block designs. Prerequisite: MATH 330 or MATH 331 or MATH 332.
- MATH 451. Introduction to Differential Geometry** 3 cr.  
Applies calculus to curves and surfaces in three dimensional Euclidean space. Prerequisites: MATH 280 and MATH 391, or consent of instructor.
- MATH 452. Foundations of Geometry** 3 cr.  
Topics in projective, axiomatic Euclidean or non-Euclidean geometries. Prerequisite(s): C or better in Math 331 or Math 332. Restricted to: Main campus only.
- MATH 453. Introduction to Topology** 3 cr.  
Introduction to topological spaces and metric spaces, with connections to analysis, geometry, and the classification of surfaces. Prerequisite: MATH 332 or consent of instructor.
- MATH 454. Mathematical Logic** 3 cr.  
Propositional calculus and the first order predicate calculus, including Godel's completeness theorem for the latter, and additional topics at the option of the instructor. Prerequisite(s): C or better in Math 331 or Math 332, or consent of instructor.
- MATH 455. Elementary Number Theory** 3 cr.  
Covers primes, congruences and related topics. Prerequisite: grade of C or better in MATH 331 or consent of instructor.
- MATH 457. Topics in Algebra** 3 cr.  
Topics may include coding theory, cryptography, algebraic geometry, or symmetry groups. Prerequisites: C or better in Math 331.
- MATH 459. Survey of Geometry** 3 cr.  
Basic concepts of Euclidean geometry, ruler and compass constructions. May include topics in non-Euclidean geometry. For non-math majors. Prerequisite(s): C or better in Math 331 or Math 332. Restricted to: Main campus only.
- MATH 466. Lattice Theory** 3 cr.  
Introduction to partially ordered sets, distributive, modular, and Boolean lattices. Prerequisites: MATH 330 or MATH 331 or MATH 332 or consent of instructor.
- MATH 471. Complex Variables** 3 cr.  
A first course in complex function theory, with emphasis on applications. Prerequisite: MATH 391 or both MATH 392 and MATH 291G.
- MATH 472. Fourier Series and Boundary Value Problems** 3 cr.  
Fourier series and methods of solution of the boundary value problems of applied mathematics. Prerequisite: MATH 392.
- MATH 473. Calculus of Variations and Optimal Control** 3 cr.  
Euler's equations, conditions for extrema, direct methods, dynamic programming, and the Pontryagin maximal principle. Prerequisite: MATH 392.
- MATH 475. Business Applications** 3 cr.  
Taught with MATH 375 with additional work. Does not fulfill requirements for degrees in mathematics. Prerequisite(s): C or better in Math 142G, or in MATH 191G, or in Math 235.
- MATH 480. Matrix Theory and Applied Linear Algebra** 3 cr.  
An application driven course, whose topics include rectangular systems, matrix algebra, vector spaces and linear transformations, inner products, and eigenvalues and eigenvectors. Applications may include LU factorization, least squares, data compression, QR factorization, singular value decomposition, and search engines. Prerequisite(s): C or better in any 300-level course with a MATH or STAT prefix.

- MATH 481. Advanced Linear Algebra 3 cr.  
Rigorous treatment of vector spaces and linear transformations including canonical forms, spectral theory, inner product spaces and related topics. Prerequisite: grade of C or better in MATH 331.
- MATH 491. Introduction to Real Analysis I 3 cr.  
Rigorous discussion of the topics introduced in calculus. Sequences, series, limits, continuity, differentiation. Prerequisite: grade of C or better in MATH 332 or consent of instructor.
- MATH 492. Introduction to Real Analysis II 3 cr.  
Continuation of MATH 491. Integration, metric spaces and selected topics. Prerequisite: MATH 491 or consent of instructor.
- MATH 498. Directed Reading 1-6 cr.  
May be repeated for a maximum of 6 credits. Graded S/U.
- MGT- MANAGEMENT**
- MGT 201. Introduction to Management 3 cr.  
Covers the functioning and administration of different types of complex organizations. Concepts and theories of management and organizational behavior.
- MGT 309. Human Behavior in Organizations 3 cr.  
Interpersonal and organizational behavior, motivation, communication, team building, leadership, diversity management, legal and ethical issues, and politics in organizations. Credit may not be earned for both MGT 309 and MGT 315V.
- MGT 310V. The Faces of Entrepreneurs 3 cr.  
Examination of entrepreneurs from a wide range of historical and current contexts.
- MGT 315V. Human Relations in Organizations 3 cr.  
Interactions among people and groups in societies where organizations abound. Focus on the behavior of people in organizational situations and approaches for understanding that behavior. Explores motivation, communication, leadership and team processes. Restricted to nonbusiness majors. Credit may not be earned for both MGT 309 and MGT 315V.
- MGT 332. Human Resources Management 3 cr.  
Survey course in human resources management. Includes recruitment, selection, equal employment opportunity, performance appraisal, training, compensation, safety, and union-management relations.
- MGT 333. Training and Development 3 cr.  
Training and development of human resources, including training needs assessment, training approaches and techniques, and evaluation of training effectiveness.
- MGT 334. Labor Relations 3 cr.  
Overview of labor-management relations, including the nature of unions and the labor movement. Managing conflict resolution processes in unionized and nonunionized organizations.
- MGT 335V. Business and Government 3 cr.  
Same as ECON 335V. Prerequisite: 3 credits of economics.
- MGT 336. Management Communication 3 cr.  
Communication models with emphasis on application to management problems. Management communication systems and techniques in organizations.
- MGT 344. Production and Operations Management 3 cr.  
Management of physical and human resources; management information systems in operations; applications in various organizations. Prerequisite: STAT 251G or A ST 251G or A ST 311; and BCIS 338 or BCIS 350.
- MGT 345V. Quality and Competitiveness: An International Perspective 3 cr.  
Quality management and competitiveness are studied in manufacturing, services, and the public sector with an international perspective. Topics include: global history of quality, foreign competition and its impact on quality and productivity, quality management and continuous improvement, international operations management, quality assessment, and a review of the emergence of quality and competitiveness in government, education and health care.
- MGT 347. Management Functions and Processes 3 cr.  
Planning, organizing, directing, and controlling operating units in an organization. Applications to a variety of types of organizations.
- MGT 351. Supply Chain Management 3 cr.  
Acquisition and control and delivery of materials, parts, equipment, and services for end use in the organization. Applications to service and manufacturing industries, nonprofit, and governmental institutions.
- MGT 359. The Management of Diversity 3 cr.  
Management of diversity in the workplace. Includes concepts of appreciation and management of workforce diversity, a review of research on diversity and organizational performance, individual and group-level factors in understanding diversity, and organizational context factors in managing diversity.
- MGT 360V. Negotiation and Business Conflict Resolution: Theory and Practice 3 cr.  
Covers the basics of negotiation theory and practice including the use of quantitative methods and their realistic application in resolving disputes. Application of conflict resolution skills.
- MGT 361. Small Business Management 3 cr.  
Principles and practice of managing a small enterprise with emphasis on growth and performance.
- MGT 375V. Global Environmental Assessment and Management 3 cr.  
Examines the principles of environmental assessment and management. Topics include global environmental concerns, industrial environmental management, life cycle assessment, system analysis, process improvement, and sustainable development, among others.
- MGT 388V. Leadership and Society 3 cr.  
Exploration of the multifaceted nature of leadership in modern society through readings and seminar discussion.
- MGT 391. Management Internship and Cooperative Education I 1-3 cr.  
Application of management skills to the work environment. Open only to students majoring or minoring in management. The amount of academic credit (1-3 cr.) will be determined by the academic experience and not by the work experience. Prerequisites: MGT 309 and consent of instructor. May be repeated for a maximum of 3 credits. Restricted to majors and minors.
- MGT 445. Operations Planning and Control 3 cr.  
Managing the flow of goods and services. Emphasis on effective planning and control of job shop and repetitive manufacturing organizations. Includes materials requirements planning, just-in-time techniques and scheduling resources and personnel.
- MGT 448. Small Business Consulting 3 cr.  
Study, analysis, and presentation of recommendations for solving significant problems confronting small businesses. Prerequisite: senior standing or consent of instructor. Same as B A 448.
- MGT 449. Strategic Management 3 cr.  
Integrative approach to envisioning the future and shaping strategies for business success. Prerequisite(s): BCIS 338 or 350; BLAW 316; FIN 341; MGT 309; MKTG 303; and one of the following: MGT 344 or MGT 470 or BCIS 485.
- MGT 451. Selection, Placement, and Performance Evaluation 3 cr.  
Staffing processes for organizations and the evaluation of employee performance. Use of selection methods and measurement of work behavior.
- MGT 453. Leadership and Motivation 3 cr.  
Theories of leadership and motivation. Motivational programs for complex organizations. Relationships between organizational power, authority, and management styles. Crosslisted with: I E 453
- MGT 454. Work Teams in Organizations 3 cr.  
Theories of small groups and their application to the work situation. Why and how groups form, grow, communicate, and maintain themselves. Prerequisites: senior or above standing.
- MGT 455. Public Utilities Regulation 3 cr.  
Same as ECON 455.
- MGT 458. Comparative International Management 3 cr.  
Cultural influences on management are examined in a global business environment with a particular emphasis on human behavior in multinational organizations and the management of human resources. Same as I B 458.
- MGT 460. Compensation Management 3 cr.  
An overview of wage and salary administration, including job evaluation, wage and salary surveys, program administration, legal aspects of pay systems, and benefits administration. Prerequisite(s): MGT 332 or consent of instructor.
- MGT 461. Seminar in Entrepreneurship 3 cr.  
For students interested in owning and operating their own business; students desiring hands-on, real-time experience in helping start up a business. Prerequisites: seniors in business administration or engineering, MBA students and others at the discretion of the instructor. Same as MKTG 461.



MGT 462. Introduction to Health Services Policy Same as ECON 453.	3 cr.	MKTG 317. International Marketing Focuses on decisions relating to entering markets, market segmentation, marketing strategies, and tactics in the international arena. Same as I B 317.	3 cr.
MGT 465. Contemporary Issues in Human Resources Management Integrative course in human resources management, emphasizing the application of advanced concepts to complex personnel cases. Prerequisite: MGT 332.	3 cr.	MKTG 324. Product/Service Development Covers product innovation, development, commercialization and resource recovery, price determination and administration strategies, and complementing planning processes.	3 cr.
MGT 466. Managing Electronic Commerce: A Business Models Perspective Surveys the emerging Internet technology involving business to business, business to consumer, and consumer to consumer forms of trade. Covers quantitative decision and negotiation analysis techniques as well as auction and market trade mechanisms.	3 cr.	MKTG 350. Non-profit and Social Marketing Examines the role and application of marketing concepts and strategies to social issues and nonprofit organizations.	3 cr.
MGT 470. Project Management in Organizations Roles, responsibilities, and techniques of project managers in managing projects effectively. Preparation for professional certification.	3 cr.	MKTG 380. Level 2, PGA's PGM Education Program (Part 2) Completion of Level 2 of the PGA's Educational Program. This class will focus on applying work experience gained while out on a PGA -required internship (co-op) to complete the PGA's Level 2 education kit. Restricted to PGA Golf Mgt. students. Consent of PGA Director required. Consent of instructor required. Restricted to MKTG, PGM majors.	1.5 cr.
MGT 480. Operations Strategy The formulation and implementation of integrated operations plans as strategic as well as tactical means to organizational competitiveness. Integration of the operations management course sequence with the companion functional areas of business is achieved via the case method and a system design project.	3 cr.	MKTG 381. Level 3, PGA's PGM Education Program (Part 1) Introduction of Level 3 of the PGA's Educational Program. This class will focus on explaining and beginning to complete the PGA's Level 3 education kit. Restricted to PGA Golf Mgt. students. Consent of PGA Director required. Consent of instructor required. Restricted to MKTG, PGM majors.	1.5 cr.
MGT 490. Selected Topics Seminars in selected current topics in the various areas of management and administration. Prerequisites vary according to the seminar being offered.	1-18 cr.	MKTG 400. Marketing Internship/Field Experience Internship of field experience in application of marketing principles. The student must accept an internship before being allowed to enroll in the course. Consent of instructor required. Restricted to MKTG majors.	3 cr.
MGT 491. Management Internship and Cooperative Education II Covers the application of management skills to the work environment. The amount of academic credit (1-3 cr.) will be determined by the academic experience and not be the work experience. Prerequisite: MGT 309 and consent of instructor. May be repeated for a maximum of 3 credits. Restricted to majors and minors.	1-3 cr.	MKTG 404. Business-to-Business Marketing Covers suppliers and buyers roles in industry; procurement, vendor selection, marketing research, selling techniques, sales force management; quality/quantity determination.	3 cr.
MGT 498. Independent Study Individual studies directed by consenting faculty with the prior approval of the department head. Prerequisites: junior or above standing and consent of instructor. A maximum of 3 credits may be earned.	1-3 cr.	MKTG 449. Promotion Management Covers concepts and problems in the use of advertising, internet marketing, social media marketing, personal selling, publicity, and other forms of promotion; planning, coordination, control, and evaluation of effectiveness.	3 cr.
<b>MKTG- MARKETING</b>		MKTG 451. Agribusiness Market Planning Same as AG E 451.	3 cr.
MKTG 180. PGA Golf Management Freshman Orientation Introduction to the Policies and Procedures of the PGA Golf Mgt. Program and the PGA of America. Students will also be introduced to the PGA's Educational Program, Rules of Golf, and Tournament Operations. Restricted to PGA Golf Mgt. students. Consent of PGM Director required. Consent of instructor required. Restricted to MKTG, PGM majors.	3 cr.	MKTG 454. Sports Marketing The application of marketing concepts to the sports industry. Topics include fans/customers, products, and promotions across a range of sports.	3 cr.
MKTG 203. Introduction to Marketing Covers processes, functions and principles in the current marketing system. Includes role of marketing in the economy, types of markets, product development, distribution channels, pricing and promotion strategies, market research and management of the processes. Community Colleges only.	3 cr.	MKTG 455. Services Marketing Management How service organizations can grow and prosper through application of marketing. Analyzes nature of services, service environment, customer and marketing mix, and implementation of service strategies.	3 cr.
MKTG 281. Level 2, PGA's PGM Education Program (Part 1) Introduction of Level 2 of the PGA's Educational Program. This class will focus on explaining and beginning to complete the PGA's Level 2 education kit. Restricted to PGA Golf Mgt. students. Consent of PGA Director required. Consent of instructor required. Restricted to MKTG/PGM majors.	1.5 cr.	MKTG 457. Internet and Social Media Marketing Focuses on the consumer psychology and marketing strategies at work in advertising and selling brands via the Internet and social media networks.	3 cr.
MKTG 303. Principles of Marketing Process, functions, and principles in the current marketing system.	3 cr.	MKTG 461. Seminar in Entrepreneurship Same as MGT 461.	3 cr.
MKTG 305. Marketing Agricultural Products Same as AG E 305.	3 cr.	MKTG 480. Level 3, PGA's PGM Education Program (Part 2) Completion of Level 3 of the PGA's Educational Program. This class will focus on applying work experience while out on a PGA-required internship (co-op) to complete the PGA's Level education kit. Restricted to PGA Golf Mgt. students. Consent of PGA Director required. Consent of instructor required. Restricted to MKTG, PGM majors.	1.5 cr.
MKTG 310. Marketing Research Design, collection analysis, and presentation of research data. Prerequisites: A ST/STAT 251G or consent of instructor.	3 cr.	MKTG 481. PGA Final Experience The following is a requirement for successful completion of this senior level PGA Golf Mgt. capstone course: 16 months of co-op, completion of Level 1, Level 2, and Level 3 of the PGA's PGM Educational Program, and successful completion of the PGA's Playing Ability Test. Restricted to PGA Golf Mgt. students. Consent of PGA Director required. Consent of instructor required. Restricted to MKTG, PGM majors.	3 cr.
MKTG 311V. Consumer Behavior The different aspects of consumer behavior and the variables affecting consumer decisions. Analysis of current concepts and models.	3 cr.	MKTG 489. Strategy and Policy Techniques and analysis of marketing strategy and policy planning and formulation. Prerequisites: senior standing or consent of instructor.	3 cr.
MKTG 312. Personal Selling Implementation of the promotion process through interpersonal communications between salesperson and prospects. Serving customers by sales representatives.	3 cr.	MKTG 490. Selected Topics Covers materials and subjects not offered in regular Marketing courses. Students can take 18 credit hours of MKTG 490 if each class is a different subtitle. A maximum of 18 credit hours can be earned through MKTG 490.	1-18 cr.
MKTG 313. Retail Management Investigates retail business operations and focuses on the strategic profit model, store location, layout, display, merchandising, operations, and personnel.	3 cr.	MKTG 498. Independent Study Individual studies directed by consenting faculty with the prior approval of the department head. Prerequisites: junior or above standing and consent of instructor. A maximum of 3 credits may be earned.	1-3 cr.
MKTG 314. Advertising Strategy Utilization of advertising as a business administration function; communication with consumers as a means of attaining marketing goals.	3 cr.		



**MOLB- MOLECULAR BIOLOGY**

- MOLB 448. Special Research Problems** 1-3 cr.  
Individual investigation, theoretical or experimental, under the supervision of a molecular biology faculty member. Prerequisite: consent of instructor. May be repeated for a maximum of 6 credits.
- MOLB 450. Special Topics in Molecular and Cellular Biology** 1-3 cr.  
Selected topics of current interest in the fields of molecular and cellular biology. Specific topics announced in the Schedule of Classes. May be repeated for a maximum of 6 credits.
- MOLB 452. Independent Studies in Bioinformatics** 1-3 cr.  
Individual investigation, theoretical or experimental, in bioinformatics or computational applications under the supervision of a molecular biology or computation science faculty member. Prerequisite: consent of instructor. May be repeated for a maximum of 6 credits.
- MUS- MUSIC**
- MUS 101G. An Introduction to Music** 3 cr.  
An introduction to music for the non-music major to encourage the enjoyment of listening to and understanding the world's great music from the past to the present.
- MUS 110. Fundamentals of Music** 2 cr.  
Sight singing, ear training, beginning harmony. For students with little or no theory background. May be taken for a maximum of 4 cr.
- MUS 117. Jazz Improvisation** 2 cr.  
Techniques for extemporaneous playing; jazz harmonic practice. Prerequisites: MUS 213 and MUS 211 or consent of instructor. May be taken for unlimited credit.
- MUS 121. Concert and Recital Attendance Laboratory** .5 cr.  
Music majors and students taking applied music must attend certain concerts and recitals designated for this course. May be taken for unlimited credit. Graded S/U.
- MUS 130. Applied Music** 1-2 cr.  
Private or group instruction for non-music majors, secondary instruments, and music majors preparing for 200-level applied music. May be taken for unlimited credit.
- MUS 141. Class Voice I** 2 cr.  
Beginning voice. Fundamentals of voice production leading to the singing of several of the more simple vocal classics. Main campus only.
- MUS 145. Functional Piano I** 2 cr.  
Scales, chords, memorization. Harmonization of simple melodies with the ability to play simple melodies and rhythms. May be taken for unlimited credit. Restricted to music majors. No S/U option.
- MUS 146. Functional Piano II** 2 cr.  
Scales, chords, memorization. Harmonization of simple melodies with the ability to play simple melodies and rhythms. Prerequisite: MUS 145 or consent of instructor. May be taken for unlimited credit. Restricted to music majors. No S/U option.
- MUS 147. Functional Piano III** 2 cr.  
For music majors preparing for the Piano Proficiency Examination. Prerequisite: MUS 146 or consent of instructor. May be taken for unlimited credit. Restricted to music majors. No S/U option.
- MUS 150. Orchestra** 1 cr.  
Participation in the Las Cruces Symphony at NMSU. This is a full symphony orchestra concentrating on masterworks of the literature. May be taken for unlimited credit.
- MUS 151. University Orchestra** 1 cr.  
University Orchestra is a nonperforming orchestra that concentrates on reading different major orchestral works of literature. No audition required. May be taken for unlimited credit.
- MUS 160. University Singers** 1-2 cr.  
A select concert and touring choir that sings masterworks with orchestra. May be taken for unlimited credit.
- MUS 161. Concert Choir** 1 cr.  
Campus choir is composed of both music and non-music majors. Emphasis on vocal techniques, sight-singing, and basics of choral musicianship. May be taken for unlimited credit.
- MUS 162. Master Works Chorus** 1 cr.  
Combination campus and community chorus. This group will perform the major chorale compositions for orchestra and/or wind ensemble. May be taken for unlimited credit.
- MUS 163. Jazz Ensembles** 1 cr.  
Twenty-piece bands that perform contemporary jazz. May be taken for unlimited credit.
- MUS 164. Chamber Ensembles** 1 cr.  
Small groups of singers and/or instrumentalists that perform chamber music. May be taken for unlimited credit.
- MUS 170. Symphonic Winds** 1 cr.  
A select concert and touring ensemble that performs band and chamber wind works from three centuries. May be taken for unlimited credit.
- MUS 171. Roadrunner Revue Pep Band** 1 cr.  
For both music and nonmusic majors. Opportunity to perform a variety of music in a showband setting. Prerequisite: by audition only; contact band office for date and time. May be taken for unlimited credit.
- MUS 172. Marching Band** 1-2 cr.  
For both music and nonmusic majors. Opportunity to perform all varieties of music in a contemporary styled marching unit. May be taken for unlimited credit.
- MUS 174. Percussion Ensemble** 1 cr.  
Large and small groups performing classical and popular works. May be taken for unlimited credit.
- MUS 179. Mariachi Ensemble** 1-2 cr.  
Performance of traditional, popular, and contemporary music in the Mariachi style. Prerequisite: audition. May be taken for unlimited credit.
- MUS 201G. History of Jazz in Popular Music: A Blending of Cultures** 3 cr.  
Jazz in popular music as it relates to music history and the development of world cultures.
- MUS 202. Introduction to Music Literature** 3 cr.  
Elements, styles, and forms of Western music. Prerequisite: MUS 211 and MUS 213 or consent of instructor. No S/U option. Main campus only.
- MUS 211. Ear Training I** 1 cr.  
Sight singing, dictation, notation, scales, intervals, triadic harmonies. main campus only.
- MUS 212. Ear Training II** 1 cr.  
Sight singing, dictation, notation, scales, intervals, triadic harmonies. Prerequisite: grade of C or better in MUS 211 and MUS 213 or consent of instructor. Main campus only.
- MUS 213. Music Theory I** 3 cr.  
Diatonic harmony, sight singing, dictation, functional keyboard, and beginning compositional skills. Main campus only.
- MUS 214. Music Theory II** 3 cr.  
Diatonic harmony, sight singing, dictation, functional keyboard and beginning compositional skills. Prerequisite: grade of C or better in MUS 213 or consent of instructor. Main campus only.
- MUS 230. Applied Music I** 2-4 cr.  
Individual instruction including improvisation skills and techniques. Prerequisite: audition and consent of instructor. May be taken for a maximum of 16 credits.
- MUS 250. Introduction to Music Education** 1 cr.  
Overview of the American educational system with an emphasis on music's role. Includes organization, governance, law, professional practice, and introductory field experience. Main campus only.
- MUS 260. Special Topics I** 1-3 cr.  
Emphasis on special areas of music; designed for highly motivated students. May be taken for unlimited credit.
- MUS 261. Functional Piano IV** 2 cr.  
For music majors preparing for Piano Proficiency Examination. Prerequisite: MUS 147 or consent of instructor. May be taken for unlimited credit. Restricted to music majors. No S/U option.
- MUS 262. Diction I** 2 cr.  
Introduction to the international phonetic alphabet, and its application to English, Italian, Spanish, and Latin song literature. Main campus only. Restricted to music majors.
- MUS 263. Diction II** 2 cr.  
Advanced grammar and detailed study of Italian, German and French diction and song literature for vocal students. Prerequisite: MUS 262 or consent of instructor. Restricted to music majors. Main campus only.
- MUS 273. Music Technology** 3 cr.  
Introduction to uses of technology in musical settings. Examines emerging software applications, MIDI, educational applications, and performance uses. Restricted to music and music education majors. Main campus only.
- MUS 302. History and Literature of Music to 1750** 3 cr.  
Survey of music from Antiquity through the Baroque. Prerequisites: MUS 202 or consent of instructor.
- MUS 303. History and Literature of Music after 1750** 3 cr.  
Continuation of MUS 302. Prerequisite: MUS 302 or consent of instructor.

- MUS 311. Ear Training III 1 cr.  
Continuation of MUS 212, advanced sight singing, dictation. Prerequisite: grade of C or better in MUS 212 and MUS 214 or consent of instructor.
- MUS 312. Ear Training IV 1 cr.  
Continuation of MUS 311, advanced sight singing, dictation. Prerequisite: grade of C or better in MUS 311 and MUS 313 or consent of instructor.
- MUS 313. Music Theory III 3 cr.  
Advanced sight singing, functional keyboard, chromatic harmony, dictation, and intermediate composition skills. Prerequisite: grade of C or better in MUS 214 or consent of instructor. Main campus only.
- MUS 314. Music Theory IV 3 cr.  
Advanced sight singing, functional keyboard, chromatic harmony, dictation, and intermediate composition skills. Prerequisite: grade of C or better in MUS 313 or consent of instructor. Main campus only.
- MUS 315. Brass Techniques I 1 cr.  
Methods and techniques of teaching high brass instruments, for music education majors. Main campus only.
- MUS 316. Brass Techniques II 1 cr.  
Methods and techniques of teaching low brass instruments, for music education majors. Main campus only.
- MUS 317. Woodwind Techniques I 1 cr.  
Methods and techniques of teaching high woodwind instruments, for music education majors. Main campus only.
- MUS 318. Woodwind Techniques II 1 cr.  
Methods and techniques of teaching saxophone and double reed instruments, for music education majors. Main campus only.
- MUS 319. String Techniques I 1 cr.  
Methods and techniques of teaching low string instruments, for music education majors. Main campus only.
- MUS 320. String Technique II 1 cr.  
Methods and techniques of teaching high string instruments, for music education majors. Main campus only.
- MUS 321. Instrumental Techniques for Vocal Music Education Majors 2 cr.  
Methods of teaching brass, woodwind, percussion, stringed and fretted instruments for vocal music education majors. Prerequisites: grade of C or better in MUS 325 and 327. Main campus only.
- MUS 323. Percussion Technique I 1 cr.  
Methods and techniques of teaching the non melodic instruments. Restricted to music majors only. Main campus only.
- MUS 324. Percussion Technique II 1 cr.  
Methods and techniques of teaching the melodic instruments. Restricted to music majors. Main campus only.
- MUS 325. Beginning Conducting 1 cr.  
Covers basic principles of conducting technique: the application of aural skills and gesture theory to the process of ensemble rehearsal and performance.
- MUS 326. Instrumental Conducting, Techniques, and Literature 3 cr.  
Continuation of conducting study with emphasis on instrumental rehearsal techniques, ensemble management, and literature. Includes arranging and conducting selections for the class. Prerequisite: MUS 325 or consent of instructor. Restricted to music and music education majors.
- MUS 327. Choral Conducting, Techniques, and Literature 3 cr.  
Continuation of conducting study with emphasis on choral rehearsal techniques, ensemble management, and literature. Covers all aspects of directing a secondary choral program. Prerequisite: MUS 325. Restricted to music and music education majors.
- MUS 330. Applied Music II 2-4 cr.  
Individual instruction including improvisation skills and techniques. May be taken for unlimited credit. Prerequisites: juried audition and consent of instructor.
- MUS 339. Survey of Music Business 3 cr.  
Survey of the career options in the music business including songwriting, publishing, copyright, merchandising, arts administration, recording, management and promotion.
- MUS 346. Elementary Music Methods 2 cr.  
Lesson planning, curriculum, teaching methodology, materials, and procedures for teaching music in an elementary school. Emphasis on methodology of Koday and Orff, teaching in a multicultural setting, and developing reflective practitioners. Prerequisites: MUS 326 or 327; and TEP admittance or consent of instructor. Restricted to music education majors.
- MUS 348. Instrumental Methods 3 cr.  
Curriculum, materials, and procedures as they apply to the development of the instrumental program in elementary and secondary schools.
- MUS 349. Secondary Music Methods 2 cr.  
Lesson planning, curriculum, teaching methodology, materials, and procedures for teaching music in the middle school and high school. Emphasis on teaching in a multicultural setting and developing reflective practitioners. Prerequisites: MUS 326 or MUS 327; and TEP admittance or consent of instructor. Restricted to music education majors.
- MUS 350. Chamber Music 1 cr.  
Small performing ensembles that may include strings, woodwinds, brass, pianos, percussion, and voices. May be taken for unlimited credit.
- MUS 351. Opera Workshop 1-4 cr.  
Study, translation analysis, rehearsal and performance of opera. Prerequisite: consent of instructor. May be taken for unlimited credit.
- MUS 360. Special Topics II 1-3 cr.  
Emphasis on special areas of music; designed for highly motivated students. May be taken for unlimited credit.
- MUS 361. Concert Choir II 1 cr.  
Composed of both music and nonmusic majors. Emphasis on vocal techniques, sight-singing, and basics of choral musicianship. Students must assume leadership role. Prerequisite: MUS 161 or consent of instructor. May be repeated for unlimited credit.
- MUS 362. University Orchestra II 1 cr.  
Nonperforming orchestra that concentrates on reading different major orchestral works of literature. Students must assume a leadership role. No audition required. Composed of both majors and nonmajors. Prerequisite: MUS 151 or consent of instructor. May be repeated for unlimited credit.
- MUS 363. Jazz Ensembles II 1 cr.  
Twenty-piece bands that perform contemporary jazz. Students must assume leadership roles. Prerequisite: MUS 163 or consent of instructor. May be repeated for unlimited credit.
- MUS 365. Composition I 3 cr.  
Significant forms for various media. Emphasis on structural aspects of original composition. Prerequisites: B or better in MUS 312 and MUS 314. Restricted to majors.
- MUS 366. Composition II 3 cr.  
Applied larger forms. Emphasis on larger vocal and instrumental works. Prerequisites: B or better in MUS 311, MUS 312, MUS 313, and MUS 314.
- MUS 368. University Singers II 1-2 cr.  
A select concert and touring choir that sings masterworks with orchestra. Students must assume leadership roles. Prerequisite: MUS 361 or consent of instructor. May be repeated for unlimited credit.
- MUS 370. Symphonic Winds II 1 cr.  
A select concert and touring ensemble that performs band and chamber wind works from three centuries. Students must assume a leadership role. Prerequisite: MUS 170 or consent of instructor. May be repeated for unlimited credit.
- MUS 372. Marching Band II 1-2 cr.  
Composed of both majors and nonmajors. Opportunity to perform all varieties of music in a contemporary style marching unit. Students must assume a leadership role. Prerequisite: MUS 172 or consent of instructor. May be repeated for unlimited credit.
- MUS 374. Percussion Ensembles II 1 cr.  
Large and small groups performing classical and popular works. Students must assume a leadership role. Prerequisite: MUS 174 or consent of instructor. May be repeated for unlimited credit.
- MUS 386. Applied Music Pedagogy and Literature I 2 cr.  
Methods, materials, problems, literature, and techniques in teaching individual lessons.
- MUS 413. Form and Analysis 3 cr.  
Forms in tonal music and basic analytic techniques including music from diverse cultures and media. Prerequisite: MUS 314 or consent of instructor.
- MUS 415. Orchestration 3 cr.  
Scoring for full orchestra and various instrumental combinations. Prerequisite: MUS 312 and MUS 314, or consent of instructor. Restricted to majors.
- MUS 420. Music of the Middle Ages and Renaissance 3 cr.  
Prerequisite: MUS 303 or consent of instructor.
- MUS 421. Music of the Baroque Era 3 cr.  
Prerequisite: MUS 303 or consent of instructor.
- MUS 422. Music of the Classic Era 3 cr.  
Prerequisite: MUS 303 or consent of instructor.
- MUS 423. Music of the Romantic Era 3 cr.  
Prerequisite: MUS 303 or consent of instructor.

- MUS 424. Music of the Twentieth Century 3 cr.  
Prerequisite: MUS 303 or consent of instructor.
- MUS 429. Opera and Music Drama 3 cr.  
Lyrical drama of the Greeks through works of Wagner and Verdi to contemporary opera. Prerequisite: MUS 303 or consent of instructor.
- MUS 430. Applied Music III 2-4 cr.  
Individual instruction including improvisation skills and techniques. Prerequisites: juried audition and consent of instructor. May be repeated for a maximum of 16 credits.
- MUS 440. Senior Recital 2 cr.  
Recital under supervision of appropriate applied instructor. Prerequisite: consent of instructor. Corequisite: MUS 430 or MUS 466. Restricted to majors.
- MUS 441. Supervised Studio Teaching 2 cr.  
Teaching of private lessons under supervision.
- MUS 450. Research Methods 3 cr.  
Introduction to methodology of music research. Emphasis on important scholarly resources and academic writing. Prerequisite: consent of instructor. Restricted to majors. Main campus only. No S/U option.
- MUS 451. Orchestra II 1 cr.  
Las Cruces Symphony at NMSU, a full symphony orchestra concentrating on masterworks of the literature. Students must assume leadership role. Prerequisite: MUS 150 or consent of instructor. May be repeated for unlimited credit.
- MUS 455. Music Business Internship 3 cr.  
Capstone course for the Music Business degree. Working with the music business coordinator, students must have been accepted as an intern in a music business setting before enrolling. Credit given for the internship based on criteria developed for each placement. Prerequisites: MUS 330 and piano proficiency. Restricted to majors. S/U only.
- MUS 465. Composition III 3 cr.  
Emphasis on extended compositional techniques, serialization, modern counterpoint. Prerequisites: MUS 365 and MUS 366 or consent of instructor.
- MUS 466. Composition IV 3 cr.  
New music notation and techniques. Open forms, aleatory concepts. Prerequisite: MUS 365 and MUS 366 or consent of instructor.
- MUS 470. Special Topics III 1-3 cr.  
Designed for highly motivated students. Independent study and individual guidance. May be taken for unlimited credit.
- MUS 471. Graduate Theory Review 3 cr.  
Comprehensive and accelerated study of modes, tonality, classical form, and course content of MUS 213 and MUS 214.
- MUS 475. Intermediate Conducting 3 cr.  
Essential conducting technique in preparation for advanced study. Prerequisite: consent of instructor.
- MUS 476. Music Cultures of the World: History and Criticism 3 cr.  
Listening, criticism, and analysis of musical cultures around the world. Emphasis on non-Western musical traditions and folk music of the world. Open to all majors.
- MUS 486. Applied Music Pedagogy and Literature II 2 cr.  
Methods, materials, problems, literature, and techniques in teaching individual lessons. Prerequisite: MUS 386 or consent of instructor.
- MUS 498. Independent Study 1-3 cr.  
For students with a strong musical background wishing to explore content beyond the traditional curriculum. Prerequisite: consent of instructor. Restricted to majors. May be repeated for a maximum of 6 credits.

#### NA- NURSING ASSISTANT

- NA 101. Nursing Assistant Theory and Lab 6 cr. (5+3P)  
Nurse aide skills with emphasis on a bio-psychosocial-cultural approach to patient care. Practice of these skills is provided in the laboratory as well as at a clinical site. Successful completion of the course prepares and qualifies the student to take the NACES certification examination. Restricted to: Community Colleges only.
- NA 103. Introduction to Health Care Services 3 cr.  
Introduction to health care services, functions and responsibilities of a nurse aide, ethical and legal considerations, communication and medical terminology.

- NA 105. Certified Nursing Assistant Clinicals 4 cr. (3+3P)  
Extension of basic fundamentals of personal care, including theory, skills and clinical experience leading to the certified nursing assistant examination at the conclusion of the semester. Continuation of NA 104. Requires a C or better to pass. Prerequisite(s): C or better in NA 104 or consent of instructor. Restricted to: Alamogordo campus, Carlsbad campus, Dona Ana campus, Grants campus.
- NA 106. Home Health Assistant 4 cr. (3+3P)  
Theory, skills and clinical experience leading to a job working with clients in the home environment. Prepares the certified nursing assistant for certification in the home health care arena. Prerequisite: current CNA or consent of instructor. Corequisites: CCDM 114N and CCDE 110N.
- NA 107. Medication Assistant 5 cr. (4+3P)  
Theory, skills, and clinical to prepare the student to meet the State of New Mexico requirements to distribute medication in a residential setting to Medicaid DD waiver clients. Prerequisites: CCDM 114N and CNA, or consent of instructor.
- NA 108. Disabilities Support Services 4 cr. (3+2P)  
Beginning level preservice preparation for providing in-home care for individuals with disabilities. Restricted to: Community Colleges only. Cross-listed with: OEHO 108
- NA 109. Phlebotomist Basic 4 cr. (3+3P)  
Basic theory and skills of phlebotomy following OSHA and Center for Disease Control guidelines. Prepares students for employment as a phlebotomist in licensed settings. Requires a C or better to pass.
- NA 111. Alzheimer/Dementia Care Focus 3 cr.  
Students will learn respectful care of Alzheimer/Dementia persons while nursing their dignity, maximizing safe independence focusing on strengths and abilities. Pre/Corequisite(s): NA 104. Restricted to: Community Colleges only.

#### NAV- NAVAJO STUDIES

- NAV 111. Elementary Navajo I 4 cr.  
Navajo for beginners with emphasis on speaking skills. Prerequisite: not open to Navajo-speaking students except by consent of instructor.
- NAV 112. Elementary Navajo II 4 cr.  
Navajo for beginners with emphasis on speaking skills. Prerequisite: C or better in NAV 111 or consent of instructor.

#### NSC- NATURAL SCIENCE

- NSC 121. Integrated Natural Sciences I 4 cr. (3+3P)  
Concepts in astronomy, biology, chemistry, geology, and physics; connections between the sciences. Process of scientific investigation studied by inquiry into contemporary scientific problems. Designed to meet the needs of elementary education majors. Corequisite: MATH 111 or equivalent.
- NSC 131. General Sciences 3 cr. (2+2P)  
Designed for Allied Health students to explore the fundamentals of physical and life sciences.

#### NURS- NURSING

- NURS 119. Dosage and Calculations 1 cr.  
Covers techniques for accurate measurement, calculation, and administration of medications and fluids for children and adults. Graded S/U.
- NURS 120. Introduction to Pharmacology 3 cr.  
General principles of pharmacology including methods of administration, effect on the body, interactions with other drugs, and classification of drugs. Focus on the health care provider's role in safe pharmacologic intervention. Restricted to Allied Health majors. Community Colleges only.
- NURS 130. Foundations of Pharmacology 3 cr.  
This course provides the diverse learner with basic principles of pharmacology, drug regulation, major drug classification, and the Registered Nurse's role in medication administration. Emphasis is placed on nursing implications of drug therapy, including legal/ethical, lifespan considerations, psychosocial, religious, and cultural considerations. Students utilize math skills to calculate drug dosages. Restricted to: Community Colleges only.
- NURS 134. Foundation of Nursing Skills 3 cr. (1+6P)  
This course provides the diverse learner with foundational knowledge and skills essential to the practice of nursing including techniques of basic nursing care and basic and intermediate nursing skills. Restricted to: Community Colleges only.



- NURS 136. Foundations of Professional Nursing** 6 cr. (4+6P)  
This course provides the diverse learner with basic knowledge essential to the practice of nursing. Concepts related to nursing as a profession, standards of care, professional ethics, nursing roles, communication, cultural awareness, holistic care, nursing process, critical thinking, teaching-learning process, collaboration, support of physiologic and psychosocial health, principles of nutrition, perioperative care, and community are presented. Developmental concepts are discussed with a focus on the adult and the elderly normal process of aging. Clinical experiences enable the student to apply all concepts learned in the classroom setting. Restricted to: Community Colleges only.
- NURS 140. Pathophysiology for Allied Health Professionals** 3 cr.  
Introduction to the nature of disease and its effect on body systems. Deals with the disease processes affecting the human body via an integrated approach to specific disease entities. Includes a review of normal functions of the appropriate body systems. Diseases are studied in relationship to their etiology, pathology, physical signs and symptoms, diagnostic procedures, complication, treatment modalities, and prognosis. Prerequisite: a grade of C or better in OEHO 140. Restricted to Allied Health and Health Information Technology majors. Community Colleges only.
- NURS 146. Common Health Deviations** 6 cr. (4+6P)  
Common health deviations and the manner by which they alter various body functions are explored. The role of the licensed practical nurse in assisting clients with common health deviations is presented. Ethical and legal implications and the role of the practical nurse are also considered. The licensed practical nursing student will utilize the application of knowledge to a client care situation both in the sub-acute care and acute care settings. The nursing process is presented as a guide for coordinating client care with in a chosen nursing system, each phase of the nursing process is utilized as a method of coordinating client care. Grade of C or better required. Prerequisite(s): NURS153, NURS 156, NURS 154, NURS 157, and NURS 210 or consent of program director. Restricted to: Carlsbad campus only.
- NURS 147. Adult Health I** 6 cr. (4+6P)  
This course focuses on the role of the nurse in promoting, maintaining and restoring health for adults with commonly occurring health problems. The nursing process is applied to patients with cardiovascular, gastrointestinal, endocrine, hematological, integumentary, musculoskeletal, neurological, renal and respiratory problems. The students develop beginning collaborative skills with clients, families, peers and health care team members in the delivery of nursing care. The clinical component will enable the student to use the nursing process to formulate the plan of care for patients with a variety of medical and surgical conditions. Clinical learning experiences allow the student to develop assessment skills, communication techniques, cultural awareness and critical thinking skills. Restricted to: Community Colleges only.
- NURS 148. Physical Assessment** 2 cr. (1+3P)  
Introduction of concepts and techniques of interviewing, history taking, review of body systems, and physical assessment of an adult client. The student should be able to apply knowledge of anatomy and physiology, assessment skills, communication skills, cultural awareness, nursing process, critical thinking skills, teaching skills, and psychomotor skills. Restricted to: Community Colleges only.
- NURS 149. Psychiatric/Mental Health Nursing** 3 cr. (2+3P)  
Introductory concepts of mental health/illness across the lifespan and the nursing implications for persons experiencing psychosocial dysfunction. Upon completion of this course, students will successfully interact with clients in the promotion of mental health, the prevention and treatment of mental disorders, and the resolution of mental health in the aftermath of dysfunction. Restricted to: Community Colleges only.
- NURS 150. Medical Terminology** 3 cr.  
Understanding of the basic elements of medical words. Use of medical abbreviations. Same as OEHO 120 and BOT 150.
- NURS 151. Introduction to Nursing Practice Fundamentals of Nursing Including Physical Assessment)** 6 cr.  
Introduction to the principles and techniques of nursing practice. Includes communication, fundamentals of nursing, physical assessment, basic pharmacology, and medication administration. Prerequisite: Admission to nursing program. Corequisite: NURS 152. Restricted to majors. Dona Ana Community College only. Required: Grade of C or better.
- NURS 152. Intro to Nursing Practice, Clinical Practice Fundamentals of Nursing Including Physical Assessment** 5 cr.  
Introductory skills lab and clinical practice acquiring and practicing fundamental nursing skills: communication, fundamentals of nursing, physical assessment, and medication administration. Prerequisite: Admission to nursing program. Corequisite: NURS 151. Restricted to majors. Dona Ana Community College only. Required: Grade of C or better.
- NURS 153. Medication and Dosage Calculation** 1 cr.  
Techniques of dosage calculation for medication and fluid administration. RR applicable. Prerequisite(s): Meet NMSU basic skills requirement in mathematics or consent of program director. Corequisite(s): NURS156 and NURS154.
- NURS 154. Physical Assessment** 2 cr.  
Beginning techniques of physical assessment by systems will be presented by using the nursing process as a guide for identifying self-care requisites throughout the life span. Grade of C or better required. Prerequisite(s): BIOL 154 or BIOL 225 or consent of program director. Corequisite(s): NURS 153 & NURS 156. Restricted to: Community Colleges only.
- NURS 155. Special Topics** 1-4 cr.  
Specific subjects to be announced in the Schedule of Classes.
- NURS 156. Basic Nursing Theory and Practice** 6 cr. (4+6P)  
Introduction to the nursing profession and the beginning skills of nursing practice as it relates to normalcy. Embracing the theory of Dorothea Orem, the nursing process is presented as a means of guiding the student in promoting self-care. Ethical and legal aspects of nursing practice are also included. Basic clinical nursing skills will be presented and practiced in the nursing lab. The student will perform these skills with clients in an actual health care setting. Prerequisite(s): Consent of Program Director. Corequisite(s): NURS 153 and NURS 154. Restricted to: Carlsbad campus only.
- NURS 157. Maternal/Child Health Deviations** 8 cr. (6+6P)  
The concepts and principles of nursing care of the family from conception to adolescence. Utilizing the nursing process, the student focuses on the supportive-educative nursing system to assist members of the family in meeting self-care requisites. Theoretical instruction applied to client care situation. Students assist clients in meeting universal and developmental self-care requisites. Experiences may occur in any of the regional health care facilities. Grade of C or better required. Prerequisite(s): NURS 156, NURS 153, and NURS 154 or consent of program director. Corequisite(s): NURS 210. Restricted to: Carlsbad campus only.
- NURS 161. Intermediate Nursing Practice Part I** 6 cr. (12P)  
Advancement to more complex nursing skills assessment of client with common health deviations, development of care plan, continued refinement of skills acquired in NURS 150 and NURS 151. Prerequisites: NURS 151, NURS 152. Corequisite: NURS 162. Restricted to Nursing majors. Community Colleges only.
- NURS 162. Nursing Practice Part I, Clinical Practice Common Health Deviations)** 5 cr.  
Intermediate skills lab and clinical practice acquiring and practicing more complex nursing skills: assessment of clients with common health deviations, development of care plans, continued refinement of skills acquired in NURS 151 and 152. Prerequisites: NURS 151, NURS 152, and a grade of C or better. Corequisite: NURS 161. Restricted to majors. Dona Ana Community College campus only.
- NURS 170. Foundations of Nursing** 7 cr. (4+9P)  
Holistic approach to basic physical wellness and mental health of the adult client. Clinical experience will include in-patient and out-patient psychiatric settings, wellness, and physical assessment. Restricted to: Community Colleges only.
- NURS 172. Critical Thinking and Nursing Process** 2 cr.  
Holistic approach to wellness utilizing the nursing process and critical thinking. Introduces the nursing process and various methods of applying the process in delivery of client care. Restricted to: Community Colleges only.
- NURS 173 L. Practicum: Physical Assessment** 1 cr. (3P)  
Using the nursing process, the student will be able to perform a basic health history and physical examination on an adult client. Prerequisite(s): BIOL 225 and BIOL 226 OR BIOL 253 and BIOL 254. Restricted to: Community Colleges only. Restricted to NURS and OEEM majors.



- NURS 180. The Adult Client I** 8 cr. (4+12P)  
Holistic care of the adult client throughout the lifespan, utilizing the nursing process to address personal wellness and acute alterations in wellness in a variety of health care settings. Laboratory and clinical practicum will focus on application of the nursing process in simulated and real world settings. Prerequisite(s): NURS 170, NURS 172, and NURS 173L. Corequisite(s): NURS 185. Restricted to: Community Colleges only.
- NURS 182. Legal and Ethical Issues in Nursing Practice** 2 cr.  
Introduction to legal and ethical implications of nursing practice (through the holistic approach to wellness) as a registered nurse. Restricted to: Community Colleges only.
- NURS 185. Holistic Approach to Pharmacotherapeutic Intervention I** 2 cr.  
Level I. Holistic approach to the study of basic pharmacology concepts. Includes pharmacodynamic phases of drug interaction. Nursing process is discussed in relation to medication administration. Special emphasis on the role of the nurse and basic concepts related to specific drug categories. Prerequisite(s): NURS 170, NURS 172, and NURS 173L. Corequisite(s): NURS 180. Restricted to: Community Colleges only.
- NURS 201. Special Topics** 1-4 cr.  
Specific topics to be announced in the Schedule of Classes. Prerequisite: admission to the nursing program. May be repeated for a maximum of 10 credits. Community Colleges only.
- NURS 209. Independent Study** 1-4 cr.  
Individual studies to meet identified student needs. Prerequisite: admission to the nursing program. May be repeated for a maximum of 10 credits. Community Colleges only.
- NURS 210. Pharmacological Requisites of the Childbearing Family** 1 cr.  
Basic concepts of pharmacology including pharmacokinetics, pharmacodynamics, and pharmacotherapeutics, and their relationship to nursing care will be discussed focusing on medications commonly utilized with the childbearing family. Medication classes to be discussed include labor and delivery, analgesic, vitamins, respiratory, gynecological, endocrine, and anti-microbial/anti-infective drugs. Grade of C or better required. Prerequisite(s): BIOL 225 and BIOL 226 or consent of instructor and NURS 153, NURS 154 and NURS 156. Corequisite(s): NURS 157. Restricted to: Carlsbad campus only.
- NURS 211. Pharmacological Requisites of Simple Health Deviations** 1 cr.  
Basic concepts of pharmacology including pharmacokinetics, pharmacodynamics, and pharmacotherapeutics, and their relationship to nursing care are addressed focusing on medications related to the psychiatric, gastrointestinal, musculoskeletal, gynecological, hematological, and anti-neoplastic client. Grade of C or better required. Prerequisite(s): BIOL 225 and BIOL 226 or consent of instructor and NURS 153, NURS 154, NURS 156, NURS 157 and NURS 210. Corequisite(s): NURS 246 and NURS 258. Restricted to: Carlsbad campus only.
- NURS 212. Pharmacological Requisites of Complex Health Deviations** 1 cr.  
Basic concepts of pharmacology including pharmacokinetics, pharmacodynamics, and pharmacotherapeutics, and their relationship to nursing care is examined focusing on medications related to complex health deviations. Drug classes to be discussed include cardiovascular, renal, endocrine, and neurological. Grade of C or better required. Prerequisite(s): BIOL 225 and BIOL 226 or consent of instructor, and NURS 153, NURS 154, NURS 156, NURS 157, NURS 246, NURS 258, NURS 210 and NURS 211. Corequisite(s): NURS 256 and NURS 260. Restricted to: Carlsbad campus only.
- NURS 224. Maternal Child Health Nursing** 6 cr. (4+6P)  
Provide an in-depth overview of a family centered approach to nursing practice. Care of the childbearing woman, her newborn from birth to adolescents, and the family unit are introduced. Comparison of normal findings and deviations in perinatal and pediatric clients are addressed. Clients' psychosocial and cultural values will be explored in the intrapartum and postpartum woman, newborn, children and families across the continuum of care. Restricted to: Community Colleges only.
- NURS 226. Adult Health II** 6 cr. (4+6P)  
Preparation for entry into the professional practice as a graduate nurse. The nursing process is applied to clients with more complex cardiovascular, respiratory, endocrine, hematological, neurological, renal, integumentary, and musculoskeletal problems. Emphasis includes the care of adult clients with high risk, complex, and critical health care problems. Clinical learning experiences allow students to enhance their assessment skills, communication techniques, and critical thinking skills. The students will collaborate with clients, families, peers, and other health care team members in the delivery of nursing care. Restricted to: Community Colleges only.
- NURS 234. Community Health Nursing** 1 cr.  
This course provides an introduction to community health, focusing on health care systems, epidemiology, and nursing care of individuals, families and aggregates of varied cultural backgrounds. Primary, secondary, and tertiary prevention are emphasized. Diverse roles of the community health nurse are examined. Educational theories and their applications are explored. Restricted to: Community Colleges only.
- NURS 235. Nursing Leadership and Management** 2 cr.  
This course provides concepts and principles of nursing leadership and management for the novice professional nurse. Community Colleges Only. Restricted to Majors.
- NURS 236. Nursing Preceptorship** 6 cr. (2+12P)  
This capstone course provides the opportunity to provide direct client care in a clinical setting. Community Colleges Only. Restricted to Majors.
- NURS 240. Healthcare Quality and Performance Improvement** 3 cr.  
Practical applications of health information management concepts as they apply to health record systems and the health care industry. Quality assessment and improvement standards and requirements of licensing, accrediting, fiscal and other regulatory agencies will be presented. Community Colleges Only. Restricted to Majors.
- NURS 246. Health Deviations I** 7 cr. (4+9P)  
Introduction to medical/surgical clients whose self-care needs are routine and predictable. Focus is on simple health deviations, including concepts relative to health promotion and maintenance. Pharmacological therapies are included. Focus on the care of individuals with simple health deviations. Nursing process utilized to assist patients with meeting self-care needs. Student expected to apply all nursing systems while providing care for a group of two or three clients. Grade of C or better required. Prerequisite(s): NURS 153, NURS 156, NURS 154, NURS 157 and NURS 210 or consent of program director. Corequisite(s): NURS 211 and NURS 258. Restricted to: Carlsbad campus only.
- NURS 251. Nursing Practice Part II Multiple Health Deviations)** 6 cr.  
Use of nursing process in teaching, supporting, planning, and providing care for acutely ill clients of any age experiencing multiple health deviations. Required: Grade of C or better. Prerequisites: NURS 151, 152, 161, 162 and third semester nursing standing. Corequisite: NURS 252. Restricted to majors. Dona Ana Community College only.
- NURS 252. Nursing Practice Part II, Clinical** 5 cr.  
Skills lab and clinical practice utilizing the nursing process in teaching, supporting, planning, and providing care for acutely ill clients of any age experiencing multiple health deviations. Required: grade of C or better. Prerequisites: NURS 151, 152, 161, 162, and third semester nursing standing. Corequisite: NURS 251. Restricted to majors. Dona Ana Community College only.
- NURS 256. Health Deviations II** 8 cr. (4+12P)  
Concepts and principles applied to clients with complex health deviations. Focus will be on acutely ill clients that require the nurse to function in all three nursing systems. Building upon knowledge gained in NURS 246, the student focuses on individuals with complex health deviations. The nursing process continues to serve as a guide in assisting clients to meet self-care needs. The student assists the health care team in all aspects of client care. Preceptorship experience in which the student makes application of all knowledge gained throughout the nursing program. Student experiences the role of the staff nurse under the guidance and direction of their preceptor and nursing instructor. Grade of C or better required. Prerequisite(s): NURS 153, 154, 156, 157, 210, 211, 246, and 258 or consent of program director. Corequisite(s): NURS 260 and NURS 212. Restricted to: Carlsbad campus only.
- NURS 258. Psychosocial Requisites: A Deficit Approach** 3 cr. (2+3P)  
Nursing theory and practice as it relates to the care of the client experiencing psychosocial health deviations. The role of the nurse is discussed along with the ethical and legal aspects of caring for the client with psychosocial disorders. Building upon the communication skills of listening and responding, the student develops the therapeutic skills of interpersonal relationships. All nursing systems will be utilized as the student makes application to the care of clients experiencing psychosocial deviations. Grade of C or better required. Prerequisite(s): NURS 153, 154, 156, 157, 210, 246, and 258 or consent of program director. Corequisite(s): NURS 211 and NURS 246. Restricted to: Carlsbad campus only.

- NURS 260. Management of Patients with Health Deviations** 2 cr.  
A capstone experience to the nursing program in which principles in management and delegation to less prepared personnel is explored. Includes the development of delegation skills while directing client activities in a work setting, and the development of the beginnings of nursing leadership roles. During this experience, the student makes application of all knowledge gained throughout the nursing curriculum. A review of leadership roles, legal issues and scope of practice with preparation for the NCLEX is included. Grade 'C' or better required. Lab fee included to cover cost of NCLEX review. Prerequisite(s): NURS 153, 154, 156, 157, 210, 211, 246, and 258 or consent of program director. Corequisite(s): NURS 212 and NURS 256. Restricted to: Carlsbad campus only.
- NURS 261. Nursing Practice Part III Complex Health Deviations** 6 cr.  
Preparation for entry into professional practice as a graduate nurse. Advancement of (more complex) nursing skills: assessment of clients with complex health deviations. Includes assessment and determination of needs for clients and families with complex health deviations. Develop and implement, evaluate and reassess plans of care based on physical and psychosocial assessment. Continued refinement of skills acquired in prerequisite classes. Prerequisites: NURS 151, 152, 161, 162, 251, and 252. Corequisite: NURS 262. Restricted to majors. Dona Ana Community College only. Required: grade of C or better.
- NURS 262. Nursing Practice Part III Complex Health Deviations** 5 cr.  
Intermediate skills lab and clinical practice acquiring and practicing more complex nursing skills: assessment of clients with common health deviations, development of care plans, continued refinement of skills acquired in NURS 251 and NURS 252. Prerequisites: NURS 151, 152, 161, 162, 251, and 252. Corequisite: NURS 261. Restricted to majors. Dona Ana Community College only. Required: grade of C or better.
- NURS 270. The Adult Client II** 5 cr. (2+9P)  
Care of adult clients experiencing chronic, life-threatening, and end-of-life health alterations with emphasis on the geriatric population using a holistic approach to wellness. Nursing process, pathophysiology, pharmacology, diet therapy, and alternative therapies are stressed throughout the course. Clinical component will provide an opportunity to apply the nursing process in both the hospital and community setting. Prerequisite(s): NURS 170, NURS 172, NURS 173L, NURS 180, and NURS 185. Corequisite(s): NURS 285. Restricted to: Community Colleges only.
- NURS 272. Care for the Aging Client** 1 cr.  
Normal physiological changes of aging and nursing implications related to safety and wellness. Restricted to: Community Colleges only. Restricted to NURS majors.
- NURS 275. Holistic Approach to Pharmacotherapeutic Interventions II** 2 cr.  
Level II. Holistic approach to the study of basic pharmacology concepts. Includes pharmacodynamic phases of drug interaction. Nursing process is discussed in relation to medication administration. Special emphasis on the role of the nurse and basic concepts related to specific drug categories. Prerequisite: NURS 185. Corequisites: NURS 280 and NURS 283. Restricted to majors. Community Colleges only.
- NURS 280. Women's Health Issues** 4 cr. (2+6P)  
Consists of lecture and associated clinical/laboratory experiences that focus on the holistic health concerns for women and the care of families expecting birth. Emphasis placed on the wellness of normal and high-risk women's health, including maternal and newborn care. The nursing process will be utilized to develop caring interventions and effective community communication through teaching healthy strategies. Prerequisite(s): NURS 170 and NURS 180. Corequisite(s): NURS 275 and NURS 283. Restricted to: Community Colleges only.
- NURS 282 L. Practicum: Management of Client Care** 1 cr. (3P)  
Organization and delivery of wellness care services for groups of clients based on the nursing process. Prerequisite(s): NURS 170, NURS 172, NURS 173L, NURS 180, and NURS 185. Corequisite(s): NURS 284L. Restricted to: Community Colleges only.
- NURS 283. Pediatric Nursing** 4 cr. (2+6P)  
Consists of lecture and associated clinical and laboratory experiences which focus on the care of children from infancy through adolescence including acute and chronic health care problems. Employs nursing process, pathophysiology, pharmacology, and diet therapy through the holistic approach to wellness. Prerequisite(s): NURS 170 and NURS 180. Corequisite(s): NURS 275, NURS 280. Restricted to: Community Colleges only.
- NURS 284 L. Practicum: Preceptorship** 3 cr. (9P)  
Clinical experience in a leadership role in specific practice areas enhancing the transition from student to practitioner utilizing the holistic approach to wellness. Prerequisite(s): NURS 182. Corequisite(s): NURS 282L. Restricted to: Community Colleges only.
- NURS 285. Holistic Approach to Pharmacotherapeutic Intervention III** 1 cr.  
Level III. Holistic approach to the study of basic pharmacology concepts. Includes pharmacodynamic phases of drug interaction. Nursing process is discussed in relation to medication administration. Special emphasis on the role of the nurse and basic concepts related to specific drug categories. Prerequisite(s): NURS 185 and NURS 275. Corequisite(s): NURS 270. Restricted to: Community Colleges only.
- NURS 290. Pathophysiology I** 1-3 cr.  
An introduction to pathophysiologic concepts using a body systems approach. Prerequisite: BIOL 226 or BIOL 254. Community Colleges only.
- NURS 291. Pathophysiology II** 1-3 cr.  
A continuation of materials presented in NURS 290, Pathophysiology I, covering the remaining body systems. Prerequisite(s): BIOL 226 or 254 and NURS 290 or consent of program director. Restricted to: Alamogordo campus, Carlsbad campus, Dona Ana campus, Grants campus.
- NURS 300. Principles of Professional Nursing Practice** 7 cr. (4+6P)  
Focus on the principles, concepts, theories, and terminology central to the study of nursing and its evolution. Uses the nursing process as a framework for providing research-based professional nursing care. Includes clinical component. Restricted to Majors. Restricted to BSN, BSNP, BSNR, NURS majors.
- NURS 302. Foundations of Health Assessment** 3 cr. (2+3P)  
Theoretical basis and skills for biopsychosocial assessment of adults. Includes clinical component. Restricted to BSN, BSNP, BSNR, NURS majors.
- NURS 303. Professional Nursing** 4 cr.  
Uses the nursing process as a framework for providing professional nursing care. Focus on the principles, concepts, theories, and terminology basic to the study of nursing and in the evolution of nursing and nursing education.
- NURS 304. Principles of Professional Nursing Practice** 2 cr. (1+2P)  
Introduction to the nursing process, history, professional roles, and concepts and terminology used in nursing. Includes clinical component.
- NURS 306. Principles of Professional Nursing Practice II** 5 cr. (2+6P)  
Focuses on evidence-based care and beginning professional skills in meeting patient care needs. Includes clinical component.
- NURS 314. Computer Technology for Nurses** 3 cr.  
Introduction to health care informatics and its use in nursing practice. Focus includes electronic communication resources, issues and technological applications that support nursing and health care.
- NURS 315. Introduction to Professional Nursing for the R. N.** 3 cr.  
Transition course for the R.N. providing an overview of theories and concepts that are the bases for professional nursing practice.
- NURS 322. Nursing Health Assessment** 3 cr.  
Theoretical basis for the biopsychosocial assessment of individual patients across the life span for the RN. Restricted to Majors.
- NURS 323. Nursing Health Assessment: Clinical** 1 cr. (2P)  
Covers skills and techniques for nursing health assessment.
- NURS 324. Nursing Care of the Older Adult** 3 cr.  
Survey course addressing nursing care provisions for the elderly population in a variety of acute, community and home settings.
- NURS 325. Human Pathophysiology for Nursing** 3 cr.  
Concepts of alteration and adaptation in structure and function of the human body across the life span.
- NURS 326. Pharmacology in Clinical Nursing Practice** 4 cr.  
Pharmacological concepts and principles and their implications for nursing practice. Includes techniques of dosage calculation for medication and fluid administration. Restricted to BSN, BSNP, BSNR, NURS majors.
- NURS 328. Human Pathophysiology Foundation for Nursing** 4 cr.  
Human pathophysiology concepts of adaptation and alteration in function and structure across the life span and their implications for nursing practice. Prerequisite(s): Prerequisites: Grade of C or better in both BIOL 253 and BIOL 254, or grade of C or better in both OEHO 153 and OEHO 154.
- NURS 337. Foundations of School Nursing** 3 cr.  
Orientation to school nursing. Overview of health care in the schools. Qualifications, roles, and functions of school nurses. Health needs of diverse school populations, legal mandates for school health, and components of school nursing.

- NURS 350. Wound Care** 3 cr.  
Applying skills in assessment, management, evaluation, and documentation of chronic wounds. Focus is on the multidisciplinary approach to the care of the chronic wound, correction of etiologic factors and medical problems, and nutritional factors that inhibit wound healing.
- NURS 352. Bioterrorism** 3 cr.  
Examines the role of today's nurse in the face of real or potential radiological and chemical threats. Emphasis is placed on clinical and public education and safety as well as nursing/logical responses. Taught online.
- NURS 353. Nursing Informatics** 3 cr.  
This course addresses nursing informatics principles and practices. Key concepts include relationship with evidence-based nursing practice, use of decision support systems, clinical information systems, telehealth, and standardized nursing language. Restricted to BSNC majors.
- NURS 372. Adult Health Nursing I** 8 cr. (4+8P)  
Theoretical basis for select acute and chronic illnesses related to adults is provided, and critical thinking is used to plan nursing care. Includes clinical component.
- NURS 373. Nursing the Psychiatric-Mental Health Client** 5 cr. (3+4P)  
Theoretical and practical knowledge applied to provision of psychiatric-mental health nursing service across the health care continuum. Includes clinical component. Restricted to BSN, BSNR, BSNP, NURS majors.
- NURS 375. Introduction to Nursing Research** 3 cr.  
Introduction to scientific inquiry. Evaluation and utilization of nursing research for clinical practice. Prerequisite(s): (STAT/A ST 251G, A ST 311, A ST 311, OR STAT 271G) and (NURS 303, NURS 326, and NURS 328) or consent of instructor. Restricted to BSN, BSNP, BSNR, NURS majors.
- NURS 376. Research and Evidence-Based Practice for the Practicing RN** 3 cr.  
Course provides introduction to evidenced-based practice and research principles for the practicing RN. Evidence-based practice principles and processes are covered. Foundations of research (quantitative and qualitative) research designs and research evaluation are included. Emphasis is placed on ethical and practical issues in critiquing and using research/evidence-based findings. Prerequisite(s): E ST 311, or admission to RN-BSN Option with consent of instructor. Restricted to BSNC majors.
- NURS 385. Violence in a Healthy Community** 3 cr.  
The relationship between anger and aggression as they impact the behavior and health in the community. Community problems and nursing-related concerns addressed using a problem-solving approach.
- NURS 388. Historical Perspectives of American Health Care** 3 cr.  
Historical interpretations of health, illness, disease, diagnosis, and treatment. Surveys social history, methods, and studies related to medical science and nursing.
- NURS 397. Special Topics** 1-9 cr.  
Specific subjects to be announced in the Schedule of Classes. May be repeated for at total of 21 credits.
- NURS 410. Adult Health Nursing II** 6 cr. (3+6P)  
Focus is on the use of critical thinking to plan nursing care of adults with selected complex illnesses. Clinical component included.
- NURS 415. Parent-Child Nursing** 8 cr. (4+8P)  
Concepts and principles of nursing applied to healthy and ill infants, children, adolescents, and childbearing women within the context of the family. Includes clinical component.
- NURS 416. Older Adult Nursing** 2 cr.  
Introduction to aging, health problems and issues associated with aging. Implications for nursing care of the elderly.
- NURS 420. Community Health Nursing** 3 cr.  
Concepts basic to the nursing care of families, groups, and communities with an emphasis on health promotion, disease prevention, and health maintenance.
- NURS 424. Nursing in the Community** 5 cr. (2.5+5P)  
Focus on community as the patient with prevention, treatment, education, and research emphasized. Cultural concepts and diversity relating to groups and communities are included. Includes clinical component.
- NURS 426. Community Health Nursing for the R.N.: Clinical** 3 cr. (6P)  
Nursing process applied to the care of families, groups, and communities.
- NURS 427. Nursing in the Community** 2 cr.  
Integration of community nursing theory, social and public health science with the roles, tools and skills needed to promote the health of populations and communities. Emphasis on nurses' role in the community. Main Campus Only. Prerequisites: Consent of Dept Head/SON Graduate Associate Director.
- NURS 428. Nursing Research** 2 cr.  
This course provides an introduction to nursing research. It focuses on research utilization and review of the literature in topics relevant to nursing practice. Main Campus Only. Prerequisite: Consent of Department Head/SON Graduate Associate Director.
- NURS 429. Nursing Organization and Management** 2 cr.  
Concepts of organization and delivery of care to groups of patients based on the nursing process. The role of the nurse as leader and manager will be emphasized. Main Campus Only. Prerequisites: Consent of Department Head/SON Graduate Associate Director.
- NURS 460. Strategies for Student Success** 3 cr.  
This course is designed to assist and support students as they identify learning needs and develop a plan for successfully mastering nursing knowledge. Course activities and assignments will be designed to address student's self-identified learning goals to enhance their opportunity for success. Restricted to NURS, BSN, BSNP, BSNR majors.
- NURS 465. Physical Assessment and Evaluation of Child Abuse** 3 cr.  
This course will acquaint the student with physical assessment of specific injuries found in children who have experienced physical abuse and neglect. Topics will include patient interviewing techniques, taking a medical history, evaluating developmental milestones, and elements of the physical examination. Consent of instructor required.
- NURS 470. Nursing Organization and Management** 3 cr.  
Concepts of organization and delivery of care to groups of patients based on the nursing process. Emphasis on the roles of the nurse as manager, leader, and change agent within health-care organizations.
- NURS 472. Community and Population Focused Nursing** 6 cr. (3+6P)  
Synthesis of nursing, social, and public health science to develop health promotion, disease prevention, and protection strategies for communities and populations. Clinical component included.
- NURS 475. Issues and Trends in Professional Nursing** 3 cr.  
Explores the challenges associated with issues and trends in health care and the legal and ethical implications of professional nursing practice.
- NURS 476. Nursing Organization & Management for the R.N.: Clinical** 3 cr. (6P)  
Nursing process applied to organization, management, and delivery of health care. An integrating experience for the R.N. student designed to facilitate the transition to professional practice. Students work with mentors in a clinical setting to develop professional nursing roles related to leadership and management.
- NURS 477. Nursing Organization and Management for the RN** 3 cr.  
Course covers nursing organization, leadership, and management principles, theories, and research for the practicing RN. Restricted to BSNC majors.
- NURS 479. Nursing Care for Complex Patients** 8 cr. (2+12P)  
Principles and priorities of nursing care for patients across the life span experiencing complex care problems. Includes integrating experiences designed to facilitate the transition from student to professional nurse. Includes clinical component.
- NURS 490. Independent Study** 1-3 cr.  
Individual studies with prior approval of department head.

## OE—OCCUPATIONAL EDUCATION COURSES

Students enrolling in any of the O prefix courses will be advised that they are not intended to replace or substitute for any approved courses which are part of baccalaureate degree programs at New Mexico State University without approval of the appropriate dean and that any request for substitution may be denied. Requests for substitution must be considered on an individual basis by the dean of the college if a student elects to pursue a bachelor's degree.

## OCAN- COMPUTER ANIMATION

- OCAN 100. Introduction to 3D computer Animation** 3 cr. (2+4P)  
Learning to work in Maya's 3D environment. Introduction to nodes, scripting, polygons, NURBS and clustered. Working with the dependency graph, modeling, basic animation, character animation, and rendering.
- OCAN 120. Writing and Storyboarding for 3D Animation** 3 cr. (2+4P)  
Learning good writing principles for creating storyboards that communicate the overall picture of the project, timing, scene complexity, emotion, and resource requirements. The final boards are geared towards the student's final project. Prerequisites: OCAN 100 or consent of instructor.
- OCAN 140. Character rigging and Animation** 3 cr. (2+4P)  
Advanced study of skeletal controls and deformers that allow for more creative and directed animation. Further study in kinetics, vectors, set driven keys, lattices, flexors and clusters. Prerequisites: OCAN 100 or consent of instructor.



**OCAN 160. Environmental Modeling, Shading and Lighting** 3 cr. (2+4P)  
Modeling design techniques for creating natural and architecture environments used in animated films and games. Study of various lighting techniques, shading and shadowing, and creating atmospheres and reflections that bring computer generated 3D to life. Prerequisites: OCAN 100 and ART 150 and ART 161.

**OCAN 170. Digital Video Editing** 3 cr. (2+4P)  
Introduction to digital video production, editing techniques and principles, working with Final Cut Pro, multiple DV inputs and creating movies for CD, DVD and web. Prerequisites: OCAN 160 or consent of instructor.

**OCAN 220. Anatomical Character Design** 3 cr. (2+4P)  
Focus on building anatomy-based 3D characters, beginning with clay modeling. Advanced study into the use of NURBS, subdivision surfaces, kinetics, texturing, and dynamic simulation. Prerequisites: OCAN 100 and OCAN 140 and ART 150 or consent of instructor.

**OCAN 230. Personal Character Development** 3 cr. (2+4P)  
Focus on the development of personal characters) from sketch to render. Develop complete biographies of character, including origin, size, weight, personality, likes and dislikes, temperament, movement styles, and even favorite food. Build, skin and animate character with as many of these attributes as possible. Prerequisites: OCAN 100 and OCAN 140 and ART 150 or consent of instructor.

**OCAN 240. Virtual Special Effects** 3 cr. (2+4P)  
Create advanced virtual special effects for both rigid and soft bodies, such as fire, smoke, fog and water, using Maya's MEL, dynamic principles, mixing nodes, and advanced particle systems. How to drive particles over surfaces, add texture to flow, create surface tensions, and use collision events to drive textures. Study of integrating computer-generated imagery with real-life video and audio. Prerequisites: OCAN 100 and OCAN 140 and ART 150 or consent of instructor.

**OCAN 287. Personal Animation Development** 3 cr. (2+4P)  
Students choose between producing an original animated short OR research, gather, develop and prepare concepts, models and materials to be used for their Final Workshop Project. (Should be taken in the semester prior to Workshop class.) Prerequisite: consent of instructor.

**OCAN 290. Advanced 3D Animation Workshop A** 3 cr. (2+4P)  
Program capstone. Utilize the skills learned from the program to produce a final animation. Group integrated projects emulate real-world animation studio environment. Prerequisites: OCAN 100, OCAN 120, OCAN 140, OCAN 160, OCAN 220, OCAN 240 and OCAN 270 or consent of instructor. Corequisite: OCAN 291.

**OCAN 291. Advanced 3D Animation Workshop B** 3 cr. (2+4P)  
Program capstone. Program capstone. Utilize the skills learned from the program to produce a final animation. Group integrated projects emulate real-world animation studio environment. Prerequisites: OCAN 100, OCAN 120, OCAN 140, OCAN 160, OCAN 220, OCAN 240 and OCAN 270 or consent of instructor. Corequisite: OCAN 290.

**OCAN 295. Creating the Demo Reel** 1 cr. (1+1P)  
Personalized creation of a 3 to 5 minute demo reel to prepare for seeking employment in the professional animation market.

### **OEBM- BIOMEDICAL TECHNOLOGY**

**OEBM 140. Applied Human Biology for Biomedical Technology** 3 cr.  
Essential human biology, anatomy, physiology and medical terminology for biomedical equipment technicians. Focus on the vocabulary necessary for effective communication in the hospital environment as part of the health care team. Restricted to: Community Colleges only.

**OEBM 141. Introduction to Medical Electronics for Biomedical Technology** 3 cr.  
Introduction to the biomedical electronics technology field. Physiologic measurements, including cardiovascular, pulmonary, and pressure and temperature. Operation of common biomedical electronic equipment. Hospital safety regulations explained. Prerequisite(s): OEBM 140. Restricted to: Community Colleges only.

**OEBM 200. Biomedical Practicum** 3 cr. (9P)  
Practice working in industry as a biomedical electronics technologist. Students work on a variety of medical equipment and job tasks. An employer evaluation, student report, and a minimum of 100 work hours are required. May be repeated for a maximum of 6 credits. Consent of instructor required. Prerequisite(s): OEBM 140 and OEBM 141. Restricted to: Community Colleges only.

**OEBM 210. Biomedical Clinical** 4 cr. (1+9P)  
Clinical experiences to include advanced biomedical equipment maintenance, inventory control, and medical facility and industry standards. Prerequisite(s): OEBM 200. Restricted to Biomedical majors.

**OEBM 240. Introduction to Radiography Systems for Biomedical Technology** 3 cr.  
The fundamentals of diagnostic radiography equipment will be explored. Principles of an x-ray system will be explained including the x-ray generation, image formation and film processing. Focus will be on both safety and quality. Prerequisite(s): OEBM 140. Restricted to: Community Colleges only.

### **OECS- COMPUTER TECHNOLOGY**

**OECS 101. Computer Basics** 1 cr.  
Hands-on instruction to introduce computer use and commonly used software. Graded S/U.

**OECS 105. Introduction to Microcomputer Technology** 3 cr.  
History and impact of computers on the economy and society. Development of basic skills in operating systems, word processing, spreadsheets, and databases.

**OECS 110. Introduction to Power Point** 1 cr.  
An introduction to Power Point software to develop business presentations. Includes concepts of basic presentation methods and graphic design principles. Students will create and deliver presentations using text, charts, digitized images, and sound. Prerequisites: BCIS 110, C S 110, or OECS 105.

**OECS 125. Operating Systems** 1-3 cr.  
Installation of current operating systems software, and utilities to include systems configuration, file, and hardware management. May be repeated for a maximum of 6 credits. Prerequisite(s): BCIS 110 OR C S 110 OR E T 120 OR E T 122 OR OECS 105. Restricted to: Community Colleges only.

**OECS 128. Operating Systems Linux/Unix** 3 cr.  
Installation of current operating system software and utilities including systems configuration, file and hardware management. Prerequisite: either BCIS 110, C S 110 or OECS 105. May be repeated for a maximum of 6 credits.

**OECS 140. Introduction to Game Production Industry** 3 cr.  
Students explore the business behind game production, understanding how game companies are organized and funded, positions within the game industry, and what skills game producers need. Prerequisites: Either BCIS 110, C S 110, or OECS 105.

**OECS 141. Introduction to Interactive Game Programming** 3 cr.  
This introductory programming class reviews the basics of programming, including the object-oriented approach. Students will de-construct existing games, develop their own code, and gain an appreciation for coding strategies. May be repeated for a maximum of 6 credits. Community Colleges Only. Prerequisites: C S 110, BCIS 110, or OECS 105.

**OECS 145. Mobile Application Development** 3 cr.  
An in-depth review of concepts, design strategies, tools and APIs needed to create, test and deploy applications for mobile devices. Topics include: design of mobile user interfaces, application life-cycle, multi-threading, inter-process communication, data persistency, background services, geo-location/mapping, graphics/animation, performance, and security. Prerequisite(s): BCIS 110 or CS 110 or OECS 105. Restricted to: Community Colleges only.

**OECS 146. Geographic Information Systems (GIS) Programming** 3 cr.  
Introduction to desktop GIS programming with ArcObjects and web-based GIS programming with open-source library, API and public domain GIS services. Topics include GIS programming environment, programming syntax/styles, interface customization, GIS functions and subroutines that can be assembled through programming, open-source GIS package, library, API and services. Prerequisite(s): BCIS 110, or CS 110, or OECS 105. Restricted to: Community Colleges only.

**OECS 150. Introduction to Programming Using Visual Basic** 4 cr.  
Introduction to algorithmic problem-solving concepts, structured programming design-oriented application programming interface development. Solutions to problems are implemented using the Visual Basic programming language in the Windows environment, with connection to Access databases as applicable. Prerequisite(s): CS 110, OECS 220, and MATH 120. Restricted to: Community College campuses only.

**OECS 155. Special Topics - Introductory Computer Technology** .5-4 cr.  
Topics to be announced in the Schedule of Classes. May be repeated up to 8 credits.

**OECS 185. PC Maintenance and Selection I** 1-3 cr.  
Selecting, installing, configuring, troubleshooting, and maintaining microcomputers and peripheral devices. Prerequisites: BCIS 110, C S 110 or OECS 105.

**OECS 192. C++ Programming I** 3 cr.  
Development of skills in programming using the C programming language. Prerequisite: one semester of any programming course.



- OECS 195. Java Programming I 1-3 cr.  
Developing of skills in programming business systems using the computer language Java. Prerequisite: one semester of any programming course. May be repeated for a maximum of 9 credits.
- OECS 196. Java Programming II 1-3 cr.  
Continuation of OECS 195. Prerequisite: OECS 195. May be repeated for a maximum of 9 credits.
- OECS 200. Accounting on Microcomputers 3 cr.  
Fundamental accounting principles using popular microcomputer software to include G/L, A/R, A/P, purchase order, billing, inventory, and forecasting modules. Prerequisite: ACCT 252 or BOT 121.
- OECS 203. UNIX Operating System 1-3 cr.  
Introduction to the UNIX operating system using Telnet to access a remote UNIX system. Basic UNIX commands and file system concepts. Prerequisite: C S 110, B CS 110G or OECS 105.
- OECS 204. Linux Operating System 1-3 cr.  
Install and configure the Linux operating system on X86 systems. Covers issues involved in maintaining operating system, networking, creating and managing users, and installing and updating software. General procedures for working with operating system includes maintaining disk space, preserving system security, and other related topics. Prerequisite: C S 110, B CS 110G or OECS 105.
- OECS 205. Advanced Operating Systems: Administration 3 cr.  
Examines operating systems designed for PC, minicomputers and mainframes. Covers maintaining operating systems, creating and managing users, and installing and updating software. General procedures for working with operating systems will include maintaining disk space, preserving system security, providing mail services, among other topics. Prerequisite: OECS 128. May be repeated for a maximum of 6 credits.
- OECS 207. Windows 1-3 cr.  
Windows concepts including program manager, icons, multiple applications and file/disk management. Windows applications introduced. Prerequisites: OECS 105 or BCS 110G or CS 110G or consent of instructor. May be repeated for a maximum of 6 credits under different subtitles listed in the Schedule of Classes.
- OECS 208. Internet Applications 1-3 cr.  
Survey of the Internet to include e-mail, file transfer, current search techniques, the World Wide Web and basic Web page development. Prerequisite: CS 110G, BCIS 110 or OECS 105. May be repeated for a maximum of 6 credits.
- OECS 209. Computer Graphic Arts 1-3 cr.  
Basic graphics composition using computer programs to include editing and manipulating graphic images, clip-art, and printing of pictures. Prerequisite: OECS 105, C S 110, or OECS 101. May be repeated for a maximum of 6 credits under different subtitles listed in the Schedule of Classes.
- OECS 210. Survey of Current Microcomputer Software 3 cr.  
Overview of current software packages for the microcomputer. Prerequisites: C S 110, BCIS 110 or OECS 105.
- OECS 211. Word Processing Applications 1-3 cr.  
Basic word processing to include composing, editing, formatting, and printing of documents. Prerequisites: C S 110, BCIS 110 or OECS 105. May be repeated under different subtitles listed in the Schedule of Classes for a maximum of 6 credits OECS 212. Introduction to the Automated Office 3 cr. Covers applications of integrated business software packages. Same as BOT 210.
- OECS 213. Image Processing 1 cr.  
Introduction to digital imaging acquisition and editing. Use of digital cameras and computer graphic software for business and personal use. Prerequisites: C S 110, BCIS 110 or OECS 105. Graded S/U.
- OECS 214. Creating a Web Page 1 cr.  
Introduction to creating Web pages for business and personal use. Prerequisites: C S 110, BCIS 110 or OECS 105. Graded S/U.
- OECS 215. Spreadsheet Applications 1-3 cr.  
Use of spreadsheets to include graphics and business applications. Prerequisites: C S 110, BCIS 110 or OECS 105. May be repeated for a maximum of 6 credits.
- OECS 216. Programming for the Web 3 cr.  
Designing web-based applications using HTML and Java, Perl and C programming languages. Prerequisite: one semester of any programming course.
- OECS 218. Web Page Programming Support 3 cr.  
Languages that support Web page development including HTML, Active X and Java Script. Implementation of forms and style sheets in Web pages also presented. Prerequisites: C S 110, BCIS 110 or OECS 105.
- OECS 220. Database Application and Design 1-3 cr.  
Creating, sorting, and searching of single and multifile databases to include report generation and programming database commands. May be repeated for a maximum of 6 credits under different subtitles listed in the Schedule of Classes. Prerequisite(s): CS 110 OR BCIS 110 OR ET 120 OR ET 122 OR OECS 105. Restricted to: Community Colleges only.
- OECS 221. Cooperative Experience I 1-3 cr.  
Student employed at approved work site; supervised and rated by employer and instructor. Each credit requires specified number of hours of on-the-job work experience. Prerequisite: consent of instructor. Restricted to OECS majors. Graded S/U.
- OECS 222. Cooperative Experience II 1-3 cr.  
Continuation of OECS 221. Each credit requires specified number of hours of on-the-job work experience. Prerequisite: OECS 221 and consent of instructor. Restricted to OECS majors. Graded S/U.
- OECS 227. Computer Applications for Technicians 3 cr.  
Computer applications for service technicians in various disciplines. Hardware and software applications explored. Includes operating systems, high level programming, and networking hardware and software.
- OECS 230. Data Communications and Networks I 1-3 cr.  
Definition of data communication; survey of hardware applications and teleprocessor software; examination and design of networks. Prerequisite: OECS 185. May be repeated for a maximum of 6 credits.
- OECS 231. Data Communications and Networks II 1-3 cr.  
Installation and application of popular microcomputer network software. Prerequisite: OECS 230. May be repeated for a maximum of 6 credits.
- OECS 232. Implementing and Supporting Networks I 3 cr.  
Knowledge and skills relating to post-installation and day-to-day administration tasks in a single-domain or multiple-domain network. Prerequisite: OECS 230 or OECS 261.
- OECS 233. Implementing and Supporting Networks II 1-3 cr.  
Implementation, administration, and troubleshooting networks in an enterprise computing environment to include multiple servers, domain and sophisticated server applications. Prerequisite: OECS 232.
- OECS 235. Structured Query Language (SQL) 1-3 cr.  
Installation, configuration, administration, and troubleshooting of SQL client/server database management system. Prerequisite: OECS 185, OECS 207, OECS 230 or OECS 261.
- OECS 245. Game Programming I 3 cr.  
Development of programming skills for games and animation using current programming languages and tools. May be repeated for a maximum of 6 credits. Prerequisite: consent of instructor.
- OECS 246. Game Programming II 3 cr.  
Continuation of OECS 245. May be repeated for a maximum of 6 credits. Prerequisite: OECS 245.
- OECS 250. Computer Systems Analysis I 3 cr.  
Analysis and design of business data processing and information systems. Study of the System Life Cycle. Prerequisite: OECS 125 or OECS 220.
- OECS 252. Project Management 3 cr.  
Utilization of project management software to establish, control and coordinate timelines, budgets, and work teams. Introduction to methods and principles of oriented project management emphasizing team-based performance.
- OECS 255. Special Topics 1-4 cr.  
Topics to be announced in the Schedule of Classes.
- OECS 260. Hypertext Markup Language (HTML) 1-3 cr.  
Coverage of HTML as used for web-page development for Internet and Intranet. Text manipulation, graphics, hypertext links, lists, and tables. Prerequisite: C S 110, BCIS 110 or OECS 105. May be repeated for a maximum of 3 credits.
- OECS 261. Computer Network Design 4 cr.  
Design of modern computer networks utilizing seven layers of OSI reference model, including data conversion, encapsulation, and various addressing techniques. Prerequisite: C S 110, BCIS 110 or OECS 105.
- OECS 262. Configuration of Computer Networks 4 cr.  
Installation, configuration, and maintenance of network routers including flow control, editing features, IOS software, upgrades, backups, and protocol addressing. Prerequisite: OECS 261.
- OECS 263. Computer Network Performance 4 cr.  
Design, configuration, and optimization of computer network performance by utilizing bridges, routers, and switches to segment networks and reduce congestion. Prerequisite: OECS 262.

- OECS 264. Wide Area Networks** 4 cr.  
Installation, configuration, and monitoring of wide area network services including LAPB, frame relay, ISDN/LAPD, HDLC, PPP, and DDR. Prerequisite: OECS 263.
- OECS 269. Network Security** 3 cr.  
Fundamentals of design and implementation of network security solutions that will reduce the risk of system vulnerability. Prerequisite(s): OECS 207 or OECS 261 or consent of instructor. Restricted to: Community College campuses only.
- OECS 272. Introduction to Bioinformatics Research** 3 cr.  
Bioinformatics is the intersection of computer science and molecular biology. It is the science of informatics as applied to biological research. This course develops the understanding of genomics research techniques and how large amounts of complex data is managed. This research based class is designed to introduce skills necessary to enter this high demanding field of study. Prerequisite(s): BCIS 110, or C S 110, or OECS 105. Restricted to: Community Colleges only.
- OECS 275. PC Maintenance and Selection II** 1-3 cr.  
Continuation of OECS 185. Prerequisite: OECS 185. May be repeated for a maximum of 6 credits.
- OECS 280. Desktop Publishing I** 3 cr.  
Design and production of publication materials to fill the needs of business communities, using a microcomputer. Prerequisites: either BCIS 100G, C S 110, OECS 105. May be repeated for a maximum of 6 credits. Same as BOT 280.
- OECS 290. Computer Technology Capstone** 1-3 cr.  
Refines skills learned in the OECS program. Culminates in a review and practice of advanced software applications. Restricted to majors. Prerequisite(s): (OECS 125 OR OECS 203) AND (OECS 185 OR ET 283). Restricted to: Community Colleges only.
- OECS 299. Independent Study** 1-3 cr.  
Specific subjects to be determined based on need. DAS Occupational Education, Dental Assisting The following courses are offered at the Community Colleges only. All DAS course are restricted to majors.
- OEEM - PARAMEDIC**
- OEEM 101. CPR for the Health Care Professional** 1 cr.  
Students learn identification and response to airway and circulation emergencies, including use of a SAED and accessing the EMS system. This course is taught using the American Heart Association guidelines for course completion. Required: grade of C or better.
- OEEM 102. CPR for the Health Care Professional - Renewal Care** 1 cr.  
A comprehensive review of the CPR course for those who are already certified at the professional level. Includes the American Heart Association requirements for CPR course completion renewal. Prerequisite: OEEM 101 or consent of instructor. May be repeated for unlimited credit. Required: grade of C or better.
- OEEM 103. Heartsaver First Aid/CPR** 1 cr.  
Students learn how to identify and respond to airway, circulation and basic first aid emergencies, to include using a SAED and accessing the EMS system. This course is intended for students who are not Allied Health Majors and utilizes the American Heart Association guidelines for course completion. Restricted to: Community Colleges only.
- OEEM 105. Vehicle Extrication Course** 2 cr.  
Assessment and psychomotor skills required to perform motor vehicle extrication at the scene of an accident. Taught using the NM Fire Academy guidelines for motor vehicle extrication course completion. Graded S/U.
- OEEM 106. Advanced First Aid** 2 cr.  
Theory and advanced first aid skills taught emphasizing recognition and providing care for injury or sudden illness until professional medical help arrives. Course meets and/or exceeds the Red Cross or National Safety Council standards. Corequisite: OEEM 101 or consent of instructor.
- OEEM 115. First Responder Prehospital Professional** 3 cr. (2+3P)  
Provides training in prehospital medical and traumatic emergencies. Prerequisite: consent of instructor. Corequisite: OEEM 101. Requires a C or better to pass. Restricted to majors.
- OEEM 116. Emergency Medical Technician Bridge** 5 cr. (3+6P)  
Enhanced skill instruction and didactic integration designed to meet the requirements for an EMT-Basic certificate. Prerequisites: OEEM 101 and OEEM 115, and consent of instructor. Corequisite: OEEM 121. Requires a C or better to pass. Restricted to majors.
- OEEM 117. Emergency Medical Technician-Wilderness First Responder** 4 cr.  
A comprehensive study of pre-hospital medical and traumatic emergencies in the wilderness setting. Prerequisite: OEEM 101.
- OEEM 118. Spanish for the EMS Provider** 2 cr. (1+3P)  
Intensive elementary Spanish with emphasis on developing communication skills: listening and speaking for students in emergency medical services. Students will focus on mastering vocabulary for selected situations common to EMS, with limited reading and writing practice emphasizing correct pronunciation. EMS scenarios will be an important part of class participation. Restricted to: Community Colleges only.
- OEEM 120. Emergency Medical Technician Basic** 6 cr.  
Covers EMT-Basic skills instruction to include care of soft tissue and muscular/ skeletal injuries, circulatory, nervous, general medical and respiratory systems emergencies. Corequisites: OEEM 101, OEEM 120L, and OEEM 121, or consent of instructor. Requires a C or better to pass.
- OEEM 120 L. Emergency Medical Technician Basic Lab** 2 cr. (6P)  
EMT-Basic skills development with emphasis on assessment, skills competency and team-work in patient care in the prehospital setting. Corequisites: OEEM 101 or OEEM 120, and OEEM 121, or consent of instructor. Requires a C or better to pass.
- OEEM 121. Emergency Medical Technician Basic Field/Clinical** 1 cr. (3P)  
Covers the patient care experience provided through assigned shifts in the hospital and/or ambulance setting. Corequisites: OEEM 101, OEEM 120, and OEEM 120L, or consent of instructor. Requires a C or better to pass.
- OEEM 122. Emergency Medical Technician Basic Advanced Field/Internship** 2 cr. (6P)  
Expanded patient care experience provided through practical scenarios, assigned shifts in the hospital and/or ambulance setting. Prerequisite: current EMT-basic license and consent of instructor. Requires a C or better to pass.
- OEEM 150. Emergency Medical Technician Intermediate** 5 cr.  
Theory of the roles, responsibilities and scope of practice of the EMT-Intermediate. Assessment and management of respiratory, cardiac, trauma, environmental, behavior, reproduction, and childhood emergencies. Prerequisites: current EMT-basic license, pretest and consent of instructor. Corequisites: OEEM 150L and OEEM 151. Requires a C or better to pass.
- OEEM 150 L. Emergency Medical Technician Intermediate Lab** 2 cr. (6P)  
EMT-Intermediate skills development with an emphasis on assessment, skills competency, and team work in patient care in the prehospital setting. Requires a C or better to pass. Corequisite(s): OEEM 150 and OEEM 151. Restricted to: Community Colleges only.
- OEEM 151. Emergency Medical Technician Intermediate Field/Clinical** 2 cr. (6P)  
Patient care experience provided through assigned shifts in the hospital and/or ambulance setting. Prerequisite: consent of instructor. Corequisites: OEEM 150 and OEEM 150L. Requires a C or better to pass.
- OEEM 152. Emergency Medical Technician-Intermediate Advanced Field/Internship** 2 cr. (6P)  
Expanded patient care experience provided through practical scenarios, assigned shifts in the hospital and/or ambulance setting. Prerequisites: current EMT-I license and consent of instructor. Requires a C or better to pass.
- OEEM 155. Special Topics** 1-6 cr.  
Specific topics to be listed in Schedule of Classes. May be repeated for a maximum of 10 credits.
- OEEM 158. Emergency Medical Technician-Combination Refresher** 2 cr.  
A comprehensive review of prehospital medicine for the prehospital care provider from the first responder level through the EMT Intermediate. New material relevant to recertification of the New Mexico First Responder, EMT Basic and EMT Intermediate licensure included. Graded S/U.
- OEEM 160. Basic Anatomy & Physiology for the EMS Provider** 4 cr.  
An introduction to the essential concepts, applications, and terminology of anatomy and physiology for the EMS provider with specific emphasis on applications within EMS.
- OEEM 177. Emergency Medical Services Instructor** 4 cr.  
Theory of student learning, methodology, instructional components, evaluation, and course coordination for the EMS profession. Prerequisite: consent of instructor. Restricted to majors. Requires a C or better to pass.
- OEEM 201. Human Pathophysiology** 3 cr. (2+3P)  
Overview of anatomy and physiology. Emphasis on human body pathophysiology including a medical illness component. Restricted to majors. Requires a C or better to pass. Prerequisite(s): OEEM 120. Restricted to: Community Colleges only.
- OEEM 202. EMT-Paramedic I Respiratory Emergencies** 3 cr. (2+3P)  
Review anatomy, physiology and pathophysiology of the respiratory system. Assessment and management of respiratory emergencies and acute respiratory failure in the prehospital setting. Prerequisites: consent of instructor. Restricted to majors. Requires a C or better to pass.

- OEEM 203. EMT-Paramedic II Trauma Emergencies** 3 cr. (2+3P)  
Study of the effects of trauma on the human body. Assessment and management of the effects of trauma on the human body. Assessment and management of trauma patients and scenes, including vehicular extrication. Prerequisites: OEEM 202 and consent of instructor. Restricted to majors. Requires a C or better to pass.
- OEEM 206. Introduction to Advanced Prehospital Care** 3 cr. (2+3P)  
Overview of prehospital care including roles and responsibilities of EMT-P, EMS systems, medical, legal, ethical issues, stress management, medical terminology, medical report writing and communication. Includes ride-along with ambulance and dispatch observation. Requires a C or better to pass. Restricted to majors. Consent of instructor required. Prerequisite(s): OEEM 120. Restricted to: Community Colleges only. Restricted to OEEM majors.
- OEEM 207. Introduction to Pharmacology** 3 cr. (2+3P)  
Drug actions, factors modifying drugs and dosages: characteristics of drug effects, and drug history and dosages. Prehospital protocol, transport, and common patient prescription medications. Restricted to majors. Requires a C or better to pass. Prerequisite(s): OEEM 120. Restricted to: Community Colleges only. Restricted to OEEM majors.
- OEEM 210. Cardiac Rhythm Interpretation** 3 cr. (2+3P)  
Cardiac conduction system: electrophysiology, electrocardiogram, monitor, atrial, sinus, ventricular and junctional dysrhythmias, multiple lead EKG and 12 lead EKG interpretation. Prerequisites: OEEM 203, OEEM 230 and OEEM 240. Requires a C or better to pass.
- OEEM 212. EMT-Paramedic Cardiovascular Emergencies** 3 cr. (2+3P)  
Review anatomy, physiology, and pathophysiology of cardiovascular system. Assessment and management of cardiovascular emergencies in the prehospital setting. Prerequisites: second semester standing in EMS program and consent of instructor. Requires a C or better to pass.
- OEEM 213. EMT-Paramedic: Medical Emergencies I** 3 cr. (2+3P)  
Study of the disease process; assessment and management of neurological, endocrine, gastrointestinal, renal emergencies and infectious disease. Prerequisites: OEEM 212, OEEM 230 and OEEM 240. Requires a C or better to pass.
- OEEM 214. EMT-Paramedic: Medical Environmental Emergencies II** 3 cr. (2+3P)  
Study of disease process, assessment, and management of poisoning, drug and alcohol abuse, environmental, behavioral and geriatric emergencies. Prerequisites: OEEM 213, OEEM 230 and OEEM 240. Requires a C or better to pass.
- OEEM 216. EMT-Paramedic: Reproductive and Childhood Emergencies** 3 cr. (2+3P)  
Covers anatomy, physiology, disease processes, assessment and management of male and female reproductive system emergencies, childhood emergencies and growth and development. Restricted to majors. Requires a C or better to pass. Prerequisite(s): OEEM 214 and consent of instructor. Restricted to: Community Colleges only.
- OEEM 218. Pediatric Advance Life Support for the Healthcare Professional** 1 cr.  
Identify and respond to life threatening pediatric emergencies. Taught using the American Heart Association guidelines for course completion. Prerequisite: OEEM 101. Graded S/U.
- OEEM 219. Advance Cardiac Life Support for the Healthcare Provider** 1 cr.  
Identify and respond to life threatening cardiac emergencies. Taught using the American Heart Association guidelines for course completion. Prerequisite: OEEM 101. Graded S/U.
- OEEM 230. EMT-Paramedic Clinical Experience I** 3 cr. (9P)  
Assigned clinical experiences in patient assessment and specific management techniques. Successful completion includes minimum required hours and completion of course objectives. Prerequisite: consent of instructor. Restricted to majors. Requires a C or better to pass.
- OEEM 231. EMT-Paramedic Clinical Experience II** 3 cr. (9P)  
Assigned clinical experiences in patient assessment and specific management techniques. Successful completion includes minimum required hours and completion of course objectives. Prerequisites: OEEM 230 and consent of instructor. Restricted to majors. Requires a C or better to pass.
- OEEM 240. EMT-Paramedic Field Experience I** 3 cr. (9P)  
Advanced prehospital skills and knowledge. Successful completion of at least the minimum required hours and course objectives. Prerequisite: consent of instructor. Restricted to majors. Requires a C or better to pass.
- OEEM 241. EMT-Paramedic Field Internship I** 3 cr. (9P)  
Continued focus on advanced prehospital skills and knowledge, with increasing responsibility for patient care. Successful completion includes meeting at least the minimum required hours and course objectives. Prerequisites: OEEM 240 and consent of instructor. Restricted to majors. Requires a C or better to pass.
- OEEM 242. EMT-Paramedic Field Internship II** 3 cr. (9P)  
Emphasis on total patient care responsibility and team leadership skills. Successful completion includes meeting the minimum hours required and course objectives. Prerequisites: second semester completion in EMS program, OEEM 241, and consent of instructor. Restricted to majors. Requires a C or better to pass.
- OEEM 243. EMT-Paramedic Preparation for Practice** 2 cr.  
Comprehensive final program testing to prepare for licensing examination. Prerequisites: OEEM 216 and OEEM 242. Restricted to majors. Requires a C or better to pass.
- OEEM 245. EMT-Paramedic Field Internship III** 1-3 cr.  
Continuation of OEEM 242. Prerequisites: OEEM 242 and consent of instructor. Restricted to majors. Requires a C or better to pass.
- OEEM 247. Emergency Medical Technician - Paramedic Refresher** 2 cr. (1+3P)  
A comprehensive review of prehospital emergency medicine for the EMT Paramedic. New material relevant to recertification of the New Mexico and Nationally Registered Paramedic licensure. Graded S/U.
- OEEM 253. Critical Care Emergency Medical Transport Program** 6 cr. (5+6P)  
This course will provide further education to Paramedics, Registered Nurses and Registered Respiratory Therapists who wish to function as part of a critical care transport team. Consent of instructor required. Prerequisite(s): Licensed Paramedic, Registered Nurse or Registered Respiratory Therapist with one or more years experience. Restricted to: Community Colleges only.
- OEEM 254. Pediatric & Neonatal Critical Care Transport** 5 cr. (4+3P)  
This course is designed to prepare paramedics, nurses and respiratory therapists to function as members of a pediatric and neonatal critical care transport team. Consent of instructor required. Prerequisite(s): Licensed Paramedic, Registered Nurse or Registered Respiratory Therapist with one or more years experience. Restricted to: Community Colleges only.
- OEEM 290. Independent Study** 1-3 cr.  
Individual studies directed by a consenting faculty member and prior approval of the department head. Prerequisite: OEEM 150 and consent of instructor. May be repeated for a maximum of 6 credits. Requires a C or better to pass.

#### OEET- ELECTRICAL TRADES

- OEET 110. Basic Electricity and Electronics** 4 cr. (3+3P)  
An introduction to electricity theory and practice, including electron theory, Ohm's law, construction of electrical circuits, direct and alternating currents, magnetism, transformers, and practical applications. Same as HVAC 102, ELT 105, OEPB 102.
- OEET 115. Wiring Methods and Materials** 5 cr. (2+6P)  
Application of electrical code in selection of wiring materials; proper methods of installation. Corequisite: OEET 110 or consent of instructor.
- OEET 118. Math for Electricians** 3 cr.  
Prerequisite: CCDM 103N. Same as BCT 118, DRFT 118, OEPB 118.
- OEET 120. Basic Motor Controls** 5 cr. (2+6P)  
Developing schematics and wiring simple manual and electromechanical control devices. Prerequisite: OEET 110 or consent of instructor.
- OEET 130. Introduction to Electrical Power Systems** 2 cr.  
An overview of electrical power systems, equipment, safety practices, first aid and CPR. Prerequisite: acceptance into the electrical lineworker program. Corequisite: OEET 110 and OEET 131. Restricted to majors.
- OEET 131. Electrical Lineworker Lab I** 6 cr. (12P)  
Climbing and work on utility poles using ropes and rigging, pole setting and an introduction to transmission and distribution line construction. Maintenance and troubleshooting to include the use of hot sticks. Prerequisite: acceptance into the electrical lineworker program. Corequisite: OEET 110 and OEET 130. Restricted to majors.
- OEET 140. Electrical Power Systems II** 3 cr. (2+2P)  
Theory of power generation and distribution with emphasis on three phase systems to include transformers, voltage regulators, surge arrestors. Includes troubleshooting. Prerequisites: acceptance into the electrical lineworker program and OEET 130. Corequisite: OEET 141. Restricted to majors.
- OEET 141. Electrical Lineworker II** 6 cr. (12P)  
Practice in the installation of electrical power lines including transformers, voltage regulators, and surge arrestors. Also advanced hot sticking procedures, troubleshooting, underground systems procedures, and pole-top rescue. Prerequisites: Acceptance into the lineworker program and OEET 131. Corequisite: OEET 140. Restricted to majors. Community Colleges only.



OEET 151. Electrical Apprenticeship I	6 cr.
Apprenticeship responsibilities and benefits as well as first aid and CPR will be covered. Hand tools, electrical theory, and the regulations imposed by national codes and OSHA. Students will apply theory taught in their jobs. Prerequisite: consent of instructor.	
OEET 152. Electrical Apprenticeship II	6 cr.
OHM s law circuit sizing and service panel sizing will be covered in detail. Other topics include low voltage systems, heating and air conditioning circuits, alarm systems and smoke detectors. Prerequisites: OEET 151 and consent of instructor.	
OEET 153. Electrical Apprenticeship III	6 cr.
Various electrical measuring devices will be covered in detail. Inductance, transformers, capacitance, and simple motors will be studied. Prerequisites: OEET 152 and consent of instructor.	
OEET 154. Electrical Apprenticeship IV	6 cr.
Theory and application of three-phase transformers and autotransformers. Electrical distribution using switchboards, panelboards, and circuit breakers. Prerequisites: OEET 153 and consent of instructor.	
OEET 162. Structured Cabling Systems II	5 cr.
Installation and testing of optical fiber cabling systems including connecting, terminating, splicing and testing of fiber cables. An introduction to networking and telephone systems, grounding, firestopping, and blueprint reading is also included. Restricted to: All Community Colleges.	
OEET 205. National Electric Code	3 cr.
Interpretation and application of the National Electric Code. Prerequisite: OEET 110.	
OEET 210. Intermediate Electricity	5 cr. (3+4P)
Introduction to inductance, capacitance, reactances, and power factor correction. Prerequisite: OEET 110.	
OEET 221. Cooperative Experience I	1-4 cr.
Supervised cooperative work program. Student is employed in an approved occupation and is supervised and rated by the employer and instructor. Student will meet in a weekly class. Graded S/U. Prerequisite: consent of instructor.	
OEET 251. Electrical Apprenticeship V	6 cr.
Commercial/industrial applications for electricians. Blueprint interpretation, commercial construction types and processes, wiring methods, wiring materials, and motor controls. Prerequisites: OEET 154 and consent of instructor.	
OEET 252. Electrical Apprenticeship VI	6 cr.
In-depth commercial applications to include commercial/industrial service calculations, mobile home parks, multi-family dwellings, and commercial fire/security systems. Prerequisites: OEET 251 and consent of instructor.	
OEET 253. Electrical Apprenticeship VII	6 cr.
Control devices in commercial/industrial applications; emphasis on logic in-line diagrams, time delay starters, reversing starters, and manual/magnetic solenoids. Prerequisites: OEET 252 and consent of instructor.	
OEET 254. Electrical Apprenticeship VIII	6 cr.
Miscellaneous topics for the journeyman electrician to include power distribution/transmission, solid state controls and relays, photoelectric and proximity controls and programmable controllers. Prerequisites: OEET 253 and consent of instructor.	
OEET 295. Special Topics	1-6 cr.
Topics to be announced in the Schedule of Classes.	

**OEGR- DIGITAL GRAPHICS**

OEGR 108. Introduction to Media Technologies	1-3 cr.
Introduction to various media technologies. Restricted to: Community Colleges only. Crosslisted with: CMT 108	
OEGR 160. Image Processing I	3 cr. (2+2P)
Covers techniques in using a raster or bitmap program for digital graphics for business applications such as advertisements, publications, multimedia presentations, and the Web. Prerequisite: basic computer skills. May be repeated for a maximum of 6 credits.	
OEGR 221. Cooperative Experience I	1-3 cr.
Student employed in approved work site; supervised and rated by employer and instructor. Each credit requires specified number of hours of on-the-job work experience. Prerequisite: consent of instructor. Restricted to majors. Graded S/U.	
OEGR 230. Web Page Development I	3 cr. (2+2P)
Creating and managing well-designed, organized Web sites using HTML and Web development software. Prerequisite(s): CS 110G or OECS 101 or OEGR 160. Restricted to: Community Colleges only. Crosslisted with: CMT 230	

OEGR 255. Special Topics	1-4 cr.
Specific topics to be announced in the Schedule of Classes. May be repeated for a maximum of 18 credits. Same as CMT 255.	
OEGR 260. Image Processing II	3 cr. (2+2P)
Advanced techniques in editing and manipulating raster images for digital graphics for print, multimedia, and the Web. Prerequisite: OEGR 260. May be repeated for a maximum of 6 credits.	
OEGR 275. Web Page Development II	3 cr. (2+2P)
Creating and managing complex Web sites using advanced techniques and tools. Prerequisite: OEGR 160; and OEGR 230 or CMT 230.	

**OEES- GEOGRAPHIC INFORMATION SYSTEMS**

OEES 231. Geographic Information Systems Spatial Modeling	3 cr. (2+3P)
Spatial GIS modeling, with a focus on raster modeling. Prerequisite(s): OEES 187. Restricted to: Community College campuses only.	

**OEHO- HEALTH OCCUPATIONS**

OEHO 225. Nutrition for Health Occupations	3 cr.
Principles of normal and clinical nutrition for health professions. Prerequisite(s): High school biology and high school chemistry and CHEM 110G and OEHO 153 or BIOL 225. Pre/Corequisite(s): OEHO 154 or BIOL 226 or consent of instructor. Restricted to: Community Colleges only.	

**OEMN- FACILITY MAINTENANCE TECHNOLOGY**

OEMN 110. Small Equipment Maintenance and Repair	4 cr. (3+2P)
Covers small engine theory, troubleshooting and repair, auto maintenance, hydraulic theory and repair lubricants, batteries and scheduled tool maintenance.	
OEMN 116. Basic Machining	3 cr. (2+2P)
Basic manufacturing processes. Familiarization with operation and maintenance of lathes, saws, drill presses, and milling machines. Prerequisite: OEMN 115.	
OEMN 150. Landscape Irrigation Systems	4 cr. (3+2P)
Covers the installation and repair of sprinkler and drip irrigation systems, with xeriscape (landscape water conservation) principles emphasized. Includes the study of fittings, piping, valves, backflow preventers, controllers, sprinklers and emitters, and automatic timing devices.	
OEMN 200. Exterior Building Maintenance	4 cr. (2+4P)
Construction and repair of exterior walls, roofs, masonry, and signs. Concrete, asphalt and exterior paint repair considerations included.	
OEMN 210. Electrical Systems Troubleshooting and Repair	4 cr. (3+2P)
Hands-on experience in electrical systems maintenance and repair. Use of V.O.M., electrical safety, codes and standards; motors, cable and wire types, and grounding. Prerequisite: HVAC 102 or consent of instructor.	
OEMN 220. Plumbing and Climate Systems Maintenance	4 cr. (3+2P)
Covers selection, types, repair, and maintenance of heating and cooling systems, piping, ducting, valves, controls, swimming pools, and fountains.	
OEMN 221. Co-op Experience	1-3 cr.
Supervised cooperative work program. Student is employed in an approved facilities maintenance operation and supervised and rated by the employer and instructor. Student will meet in a weekly class. Prerequisite: consent of instructor. Graded S/U.	
OEMN 250. Mechanical Maintenance I	3 cr. (2+2P)
Introduction to bearings, installation, removal and troubleshooting bearings; installing couplings and coupling removal procedures; belt and chain drives; function and installation of mechanical seals, gaskets, and packing. Prerequisite: OEMN 105 or consent of instructor.	
OEMN 290. Special Topics in Facilities Maintenance	1-5 cr.
Topics to be announced in the Schedule of Classes. Prerequisite: consent of instructor.	

**OEMT- MEDICAL TECHNOLOGY**

OEMT 102. Medical Technology II	3 cr.
Continuation of abnormal hematology including leukemias and other hematologic disorders; coagulation, serology, and immunohematology. Corequisite: OEMT 102L.	
OEMT 102 L. Medical Technology II Laboratory	2 cr. (6P)
Basic medical laboratory techniques and procedures in abnormal hematology, coagulation, serology/immunology, immunohematology, and instrumentation. Corequisite: OEMT 102.	
OEMT 155. Special Topics	1-6 cr.
Specific subjects to be announced in the Schedule of Classes.	



- OEMT 201. Clinical Microbiology** 3 cr.  
Clinical bacteriology, virology, mycology, and serology. Corequisite: OEMT 201L. Restricted to OEMT and ANSC majors.
- OEMT 201 L. Clinical Microbiology Laboratory** 2 cr. (6P)  
Basic medical laboratory techniques and procedures in bacteriology, mycology, and serology. Corequisite: OEMT 201.
- OEMT 202. Clinical Chemistry** 3 cr.  
Organic chemistry in relation to clinical chemistry; clinical chemistry determinations, normal vs. abnormal constituents, and clinical significance of pathological conditions. Corequisite: OEMT 202L.
- OEMT 202 L. Clinical Chemistry Laboratory** 2 cr. (6P)  
Basic laboratory techniques and procedures in clinical chemistry, lab math, and instrumentation. Corequisite: OEMT 202.
- OEMT 231. Clinical Microbiology Practicum** 3 cr. (8P)  
Basic practicum in affiliated hospitals. Emphasis on microbiology, serology, instrumentation, and review of other areas of laboratory medicine.
- OEMT 232. Clinical Chemistry Practicum** 3 cr. (8P)  
Basic practicum in affiliated hospitals. Emphasis on clinical chemistry and instrumentation and review of other areas of laboratory medicine.

### OEPP- PLUMBING

- OEPP 254. Advanced Plumbing IV** 5 cr. (4+2P)  
Installation of swimming pools, hot tubs, compressed-air piping systems, hydronic heating systems, corrosive resistant water piping, medical gas systems, private waste disposal systems, and private water supply systems. Plumbing for mobile homes and mobile home parks. Prerequisites: working as plumber's apprentice and completed third year of apprenticeship program.

### OEPS- PUBLIC SAFETY

- OEPS 104. Role of Security Guard** 3 cr.  
This is an introductory level course covering a brief history of law enforcement and security and how they evolved into modern day applications and legal framework. Course covers the legal requirements and authority of a security guard within the state of New Mexico and provides an introduction into constitutional law and it's interrelation with the duties of a security guard.
- OEPS 105. Interview Skills, Evidence, Assests** 3 cr.  
The student will have a fundamental understanding of how people behave, and the specific processes for effective interpersonal relationships. Basic concept of interviewing suspects is included. Identification and preservation of evidence; to include scene safety and stabilization, and the establishment of the initial crime scene. It will provide basic understanding and introduction to Maslow's hierarchy of needs and the theoretical interrelation with suspect behavior and aggression. It will cover professional deportment and interview skills and legal precedence and an introduction to Risk analysis and it's application within the private security field.
- OEPS 106. Chain of Command** 3 cr.  
The recognition of the chain of command within the work place and the NIMS and ICS systems. The course will introduce the following: Basic report writing with the criminal justice setting and the use of field notes; the use of force model and provide a cursory explanation of the concepts of 'use of force' and 'de-escalation' of force as well as case examples of excessive force; laws of search and seizure within the private security profession and define appropriate guidelines for public interaction within the scope of their duty.
- OEPS 107. Court Room Ethics and Demeanor** 3 cr.  
This course is a general overview of the US Judicial system and provides for an understanding of the workings of the judicial system. It provides students with a cursory explanation of courtroom etiquette and preparation. It provides the student with an understanding and knowledge of the requirements of a security guard and the prohibited acts within the state of New Mexico and their responsibilities to maintain their professional certification.
- OEPS 108. CPR First Aid** 3 cr.  
Emphasis on patient rights and the responsibilities of a trained officer when called upon to perform emergency aid. Proper techniques for administering CPR or first aid for security officers. It covers the BLS CPR course and the American Heart First aid course and provides for certification of each.
- OEPS 150. Correctional Officer Training I** 4 cr. (2+4P)  
Introduction to corrections, departmental policies and procedures, report writing, officer safety, and physical conditioning. Prerequisite: consent of instructor. Restricted to majors.

- OEPS 180. Correctional Officer Training II** 4 cr. (2+4P)  
Criminal justice system, communications, ethics, correctional law and responsibilities, search procedures, hostage situations, institutional gangs. Prerequisite: consent of instructor. Restricted to majors OEPS 195.
- OEPS 250. Correctional Officer Training III** 4 cr. (2+4P)  
Use of force, firearms, baton, chemical agents, standard first aid, and CPR. Prerequisite: consent of instructor. Restricted to majors.
- OEPS 280. Correctional Officer Training IV** 4 cr. (2+4P)  
Stress management, supervision of special needs offender, defensive driving, preparation for certifying exams. Prerequisite: consent of instructor. Restricted to majors.

### OEPT- PHOTOGRAPHIC TRADES

- OEPT 100. Photographics I** 3 cr. (2+2P)  
Covers basic black and white photographic techniques. Emphasizes black and white film and paper handling, film processing, proof printing, projection print, and print finishing. Adjustable camera required. Same as ART 270.
- OEPT 101. Photographics II** 3 cr. (2+2P)  
Black and white film exposure control. Application of copying techniques, recognition of light values, and basic lighting techniques. Exposure, developing, printing, and finishing. Prerequisite: OEPT 100.
- OEPT 120. Photo Finishing and Presentation** 2 cr. (1+2P)  
Use of visual language for personal expression. Freelance photography; care of original photos; preparation of portfolios, photographic markets, exhibitions and judging, galleries and copyrights. Students will prepare a photographic portfolio. Prerequisite(s): CMT 115. Restricted to: Community Colleges only.
- OEPT 130. Digital Imaging** 3 cr. (2+2P)  
Digital imaging on the Macintosh. Introduction to basic and intermediate concepts of Adobe Photoshop. Inputting, correcting, retouching, manipulating, and outputting of images. Prerequisite: OEPT 100 or consent of instructor. Same as ART 161.
- OEPT 150. Color Photography I** 3 cr. (2+2P)  
Color theory and principles with emphasis on film, exposure, color balance, filtration, and digital output. Visual language of color products introduced. Work with positive film. Work with digital output using Adobe Photoshop. Prerequisite(s): OEPT 100 or consent of instructor. Restricted to: Alamogordo campus, Carlsbad campus, Dona Ana campus, Grants campus.
- OEPT 155. Portraiture** 3 cr. (2+2P)  
Hands-on study of professional photography involving people. Studio and environmental portraits, fashion/glamour, and wedding photography. Studio and exterior lighting techniques, selecting lighting equipment, film and supplies. Prerequisite(s): ART 270 or CMT 115. Restricted to: Community Colleges only.
- OEPT 165. Web Page Design** 3 cr. (2+2P)  
Introduction to creating visually appealing, well-designed Web sites. Emphasis on building user-friendly, creative sites. Introduction to professional Web authoring software. Prerequisite: OEPT 130 or consent of instructor. Same as ART 165.
- OEPT 190. Photographic Practicum I** 2 cr. (1+2P)  
Self-paced instruction to include production, display of work in a simulated self-employed situation. Students must record maintenance, cost expenditures, shooting records, and sequence boards for presentation. Prerequisite(s): OEPT 100 OR CMT 115. Restricted to: Community Colleges only.
- OEPT 192. Photocommunications** 2 cr. (1+2P)  
Human interest, events, documentation, publications, and advertising. Emphasis on equipment, darkroom writing, legal aspects, and visual communication skills. Prerequisite(s): CMT 115. Restricted to: Community Colleges only.
- OEPT 290. Internship** 3 cr. (1+4P)  
Supervised internship program. Student will work for an approved business in his/her area of study. Student will be rated by business supervisor and instructor. Weekly meetings required with instructor. Consent of instructor required. Graded: S/U.

### OETS- TECHNICAL STUDIES

- OETS 100. Industrial/Construction Safety** 2 cr.  
Covers safety issues such as PPE, BBP, ladder safety,, RTK, HazCom, MSDS and information about safety organizations such as OSHA, NIOSH, NFPA, National Safety Council. Community Colleges only.

- OETS 101. Energy for the Next Generation 3 cr. (2+2P)  
This course will survey a broad range of sources of energy, types of energy, energy storage, and the forms of energy. Students will be exposed to theory in the classroom, laboratory exercises, and field trips to provide them with a solid foundation for all subsequent energy related environmental courses. Pre/Corequisite(s): OETS 118 or MATH 120. Restricted to: Community colleges.
- OETS 102. Career Readiness Certification Preparation 1-3 cr.  
This course is designed to prepare students to successfully obtain Career Readiness Certifications in all areas and at the appropriate levels for their program of study. Graded: S/U. Restricted to: Community Colleges only.
- OETS 103. Technical Career Skills 4 cr.  
This course will be project-based and will encompass writing, presentation, math, reading, and critical thinking skills applied in a technical environment. Restricted to: Community Colleges only.
- OETS 104. Basic Mathematics for Technicians 4 cr.  
Fundamental mathematical concepts and computations including measurement, ratio and proportions, and pre-algebra as it relates to technical programs. Prerequisite: appropriate placement test score.
- OETS 105. Building Analyst I 3 cr. (2+2P)  
This course is designed to provide the foundational knowledge and expertise necessary for the energy auditor and home performance contractor. Restricted to: Community Colleges only.
- OETS 106. Building Analyst II 3 cr. (2+2P)  
Designed to prepare the student for the BPI Building Analyst Certification. This course will walk the student through the hands-on process of conducting visual building inspections, diagnostic testing, identifying improvement opportunities, documenting a home's performance and preparing a scope of work. Prerequisite(s): OETS 105. Restricted to: Community Colleges only.
- OETS 110. Photovoltaic Application 4 cr. (3+2P)  
This course will provide an introduction to Photovoltaic (PV) installation. The course will provide instruction on site selection, prep, installation, and maintenance for photovoltaic applications. Students that complete the course and have the opportunity to take the entry level exam with the North American Board of Certified Energy Practitioners (NABCEP) en route to becoming Certified Installers. Prerequisite(s): OETS 101. Restricted to: Community colleges.
- OETS 118. Mathematics for Technicians 3 cr. (2+2P)  
Analysis and problem solving of technical problems using measuring instruments and techniques of arithmetic, algebra, geometry, and trigonometry. Prerequisite: CCDM 104N or appropriate placement test score.
- OETS 156. Building Envelope 3 cr. (2+2P)  
Designed to prepare the student for the BPI Building Envelope Certification. This course will provide the principles behind building performance testing and the purpose of completing a comprehensive energy audit. Through lecture and subsequent field training, the student will learn how to use building diagnostics to develop a prescriptive plan for enhancing comfort, health & safety, building durability, and energy savings. The student will learn how to outline the follow-up process required after completion of the retrofit. Prerequisite(s): OETS 106. Restricted to: Community Colleges only.
- OETS 230. Technical Management 4 cr.  
Study of ethics, codes, regulations, scheduling, policy and procedures. Employee supervision and effective communication techniques. Community Colleges only.
- OETS 255. Special Topics Technical Studies 1-6 cr.  
Topics to be announced in the Schedule of Classes. Prerequisite: consent of instructor. May be repeated for a maximum of 12 credits.
- OEVC- VISUAL COMMUNICATION**
- OEVC 170. Digital Video Production 3 cr. (2+4P)  
Introduction to digital filmmaking. Study of proper scripting and production techniques and principles. Working with multiple DV inputs and creating movies for CD, DVD, and Web. Prerequisite: OEVC 161 or consent of instructor.
- P E- PHYSICAL EDUCATION**
- P E 100. Fly Fishing 1 cr.  
An introduction to the sport of fly fishing. Following basic instruction a trip to an appropriate fishing venue will be required.
- P E 102. Beginning Weight Training 1 cr.  
Introduction to basic principles and techniques of weight training.
- P E 103. Beginning Weight Training for Women 1 cr.  
Introduction to basic principles and techniques of weight training as related to women.
- P E 104. Military Physical Fitness 1 cr.  
Directed physical fitness activities designed to develop and maintain muscular strength/endurance, cardiopulmonary efficiency, flexibility, and coordination required for leadership roles after graduation.
- P E 106. Beginning Hapkido 1 cr.  
Introductory course in Korean throwing, falling, pressure point and joint locking techniques. Movements are powerful yet suitable for people of any fitness level.
- P E 108. Inline Hockey Fundamentals 1 cr.  
The fundamentals of inline hockey will be taught through a series of instructional drills, including various skating techniques (forward, backward, step-over), ball/puck handling, shooting, and passing. The playing rules of the game (as regulated by USA Hockey Inline) will also be taught. Students will be evaluated on participation, a cumulative skills mastery test, and a written final exam.
- P E 109. Pilates 1 cr.  
Designed exercise program involves the entire body while focusing on strengthening the core muscles of the torso. Exercises promote coordination, balance, and strength.
- P E 110. Sports Conditioning 1 cr.  
Sport specific conditioning using aerobic and resistive overload training. Prerequisite: consent of instructor. May be repeated for a maximum of 4 credits.
- P E 112. Beginning Volleyball for Men 1 cr.
- P E 113. Beginning Volleyball for Women 1 cr.
- P E 114. Basketball for Women 1 cr.
- P E 115. Basketball for Men 1 cr.
- P E 117. Beginning Soccer 1 cr.  
Introduction to the basic techniques and skills of soccer.
- P E 127. Cardio-Kickboxing 1 cr.  
Activities that mimic punches, blocks, and kicks which have been modified to serve the purpose of providing a cardiovascular workout.
- P E 128. Aerobic Dance 1 cr.  
Designed to increase knowledge of the human body's responses to exercise, enhance the level of muscular development, and cardiovascular endurance with the use of music.
- P E 129. Step Aerobics 1 cr.  
Designed to increase knowledge of the human body's responses to exercise, enhance the level of muscular development, and cardiovascular endurance with the use of music and steps.
- P E 130. Beginning Swimming 1 cr.
- P E 131. Aqua Aerobics 1 cr.  
Designed to increase knowledge of the human body's responses to exercise, enhance the level of muscular development, and cardiovascular endurance through exercise in water.
- P E 132. Intermediate Swimming 1 cr.  
Development of fitness through participation in aquatics activities. Prerequisite(s): Ability to swim 200 yards.
- P E 133. Water Polo 1 cr.  
Fundamentals and team play for men and women. May be repeated one time. Prerequisite: P E 130 or ability to swim 100 yards.
- P E 134. Lifeguard Training 2 cr.  
Skills training for a nonsurf lifeguard. Course will include Standard First Aid and CPR certification. Prerequisites: swim 500 yards, dive to 9-foot depth and retrieve a 10-pound brick, surface dive to 5 feet then swim under water 15 yards, tread water one minute.
- P E 135. Springboard Diving 1 cr.  
May be repeated one time. Prerequisite: ability to swim in deep water.
- P E 145. Beginning Bowling 1 cr.  
Basic skills and methods in bowling.
- P E 147. Beginning Tennis 1 cr.
- P E 148. Beginning Racquetball 1 cr.
- P E 150. Beginning Golf 1 cr.
- P E 153. Beginning Karate 1 cr.
- P E 154. Personal Defense 1 cr.  
Physical conditioning and defense skills for men and women.

- P E 155. Beginning Judo 1 cr.
- P E 157. Archery 1 cr.
- P E 158. Beginning Kung Fu 1 cr.  
Foundations of Chinese martial arts, self defense, and health systems with special emphasis on the Wing Chun style.
- P E 159. Introduction to Brazilian Jiu-Jitsu 1 cr.  
Brazilian Jiu-Jitsu is primarily a ground fighting art. This course will place heavy emphasis on positional strategy and focus on the sportive aspect of the sport. A Judo/Jiu-Jitsu Gi (uniform) is required.
- P E 165. Beginning Handball 1 cr.  
Introduces students to the game of handball and will include right and left handed skills, and the rules of the game.
- P E 166. Futsal (Five-A-Side Soccer) 1 cr.  
Futsal, official form of indoor soccer, approved by FIFA.
- P E 173. Running Fitness 1 cr.  
Basic fitness knowledge techniques and training methods of fitness running are practiced and refined.
- P E 199. Yoga 1 cr.  
A holistic approach to exercise benefiting the body, mind, and spirit. Practices focus on alignment, strength, breath relaxation, and restoration.
- P E 200. Introduction to Sailing 1 cr.  
Course designed to introduce the student to this recreational activity. Two full day outings to sailing venues are required. Travel expenses and associated fees are the responsibility of the student.
- P E 202. Intermediate Weight Training 1 cr.  
Intermediate training and skill techniques in weight lifting. Prerequisites: P E 102 or consent of department head.
- P E 203. Olympic-Style Weightlifting 1 cr.  
Designed to teach the Olympic form-the clean, jerk and snatch. Class format is a preprogrammed style of instruction with preset programs. Emphasis placed on developing sound lifting techniques. Prerequisite: P E 103 or consent of department head.
- P E 204. Cross Training 1 cr.  
Intensive training program that incorporates both aerobic and resistive overload approaches to training.
- P E 205. Walking Fitness 1 cr.  
Basic fitness knowledge techniques and training methods of fitness walking are practiced and refined.
- P E 206. Beginning Physical Fitness 1 cr.  
Progressive exposure to steady state exercise tailored to individual needs for the purpose of determining, improving, and maintaining physical fitness.
- P E 207. Triathlon 1 cr.  
To prepare the student to participate in triathlon races, which include running, swimming, and bicycling.
- P E 208. Marathon Preparation 1 cr.  
Gradual training progression for novice and experienced runners to develop and/or refine a training program enabling completion of or better personal record for the marathon. Discussions on equipment, nutrition, injury prevention and treatment. Prerequisite: presently running three miles, three to four times per week.
- P E 209. Intermediate Pilates 1 cr.  
Intermediate training and skill techniques in Pilates. Prerequisite(s): PE 109 or consent of instructor.
- P E 210. Orienteering 2 cr.  
Same as GEOG 210.
- P E 212. Intermediate Volleyball-Men 1 cr.  
Prerequisite: P E 112 or consent of department head.
- P E 213. Intermediate Volleyball-Women 1 cr.  
Prerequisite: P E 113 or consent of department head.
- P E 215. Intermediate Walking 1 cr.  
A continuation of basic fitness knowledge techniques and training methods of fitness walking are practiced and refined. Prerequisite: P E 205 or consent of department head.
- P E 216. Advanced Walking 1 cr.  
Advanced walking fitness and training techniques are presented, practiced, and refined.
- P E 224. Intermediate Jazz 1 cr.  
Prerequisite: P E 124 or consent of instructor.
- P E 228. Intermediate Aerobic Dance 1 cr.  
Aerobic dance at a high intensity level with a more in-depth study of the body's physiological response to exercise. Prerequisite: P E 128 or consent of department head.
- P E 229. Intermediate Step Aerobics 1 cr.  
Step aerobic dance at a high intensity level with a more in-depth study of the body's physiological response to exercise. Prerequisite: PE 129 or consent of department head.
- P E 230. Advanced Swimming 1 cr.  
Perfection of basic strokes, survival swimming, and physical fitness. Prerequisite(s): P E 130 or ability to swim 100 yards.
- P E 234. Water Safety Instructor 2 cr.  
To become proficient in the WSI program as stipulated by the American Red Cross. IHSE, Standard First Aid, and CPR training included. Prerequisite: must have a current Water Emergency or Lifeguard Training certificate.
- P E 245. Intermediate Bowling 1 cr.  
Instruction in advanced skills and techniques in bowling. Prerequisite: P E 145 or consent of department head.
- P E 247. Intermediate Tennis 1 cr.  
Prerequisite: P E 147 or consent of department head.
- P E 248. Intermediate Racquetball 1 cr.  
Advanced skills and strategies in racquetball. Prerequisite: P E 148 or consent of instructor.
- P E 250. Intermediate Golf 1 cr.  
Prerequisite: P E 150 or consent of department head.
- P E 253. Intermediate Karate 1 cr.  
Prerequisite: P E 153 or consent of department head.
- P E 255. Intermediate Judo 1 cr.  
Designed for the student who is already familiar with the basic history, terminology, and fundamental techniques of Judo up to the 7th Kyu level. The curriculum will cover the Kyu requirements up to 4th Kyu. Prerequisite: P E 155 or consent of department head.
- P E 259. Intermediate Brazilian Jiu-Jitsu 1 cr. (2P)  
Builds upon material learned in Introduction to Brazilian Jiu-Jitsu. Positional dominance will still be stressed but with more focus on submissions. Prerequisites: P E 159 or consent of department head.
- P E 263. Outdoor Recreation Skills 1 cr.  
Selected outdoor activities. Appropriate subtitles, such as hiking and backpacking, camping and survival, hunting and gun safety, casting and angling skills. May be repeated for maximum of 4 credits.
- P E 264. Intermediate Cycling 1 cr.  
Introduction to competitive cycling. Content includes techniques in training, riding, racing, and racing tactics.
- P E 270. Special Topics 1-3 cr.  
Specific subjects to be announced in the Schedule of Classes. Each offering will carry appropriate subtitle. May be repeated for a maximum of 4 credits.
- P E 276. Intermediate Aqua Aerobics 1 cr.  
A continuation of basic fitness to increase knowledge of the human body's responses to exercise, enhance the level of muscular development and cardiovascular endurance through exercise in water.
- P E 299. Intermediate Yoga 1 cr.  
Intermediate training and skill techniques in Yoga. Prerequisite(s): PE 199 or consent of instructor.
- P E 310. Advanced Weight Training: Theory and Practice 3 cr.  
For men and women who wish to continue weight training and learn principles of strength training.
- P E 336. Scuba Diving 2 cr.  
Prerequisites: 1/4 mile continuous swim, 20-minute survival float, 75-foot underwater swim, and towing a person 100 yards. Medical exam required.
- P E 401. Advanced Scuba Diving 2 cr. (1+3P)  
Provides divers a structured means to explore special diving interests and gain dive experience. Allows student divers to customize their training path and learn various underwater tasks that broaden their awareness of the environment and their capabilities as divers. Prerequisite: PADI Open Water Certification or consent of instructor. Must pass a basic diving skills and knowledge assessment. Medical exam required.
- PE P- PROFESSIONAL PHYSICAL EDUCATION**
- PE P 185. Introduction and Foundations 3 cr.  
Historical and cultural foundations and vocational, scientific, and educational data on careers in health education, physical education, and recreation. Restricted to: Main campus only.
- PE P 195. Theory and Technique of Athletics 1 cr.  
Knowledge and skills related to fundamental motor skills, tumbling, track, and field.

- PE P 208. Fitness for Health and Sport 3 cr.  
A study of the fitness needs for health enhancement and sport participation. Restricted to: Main campus only. Restricted to SP M, PE P majors.
- PE P 210. Theory and Technique of Aquatics 2 cr.  
Introduction to fundamental aquatics knowledge and skills. Prerequisite(s): Ability to swim 100 yards.
- PE P 213. Practicum 1-2 cr.  
Directed leadership learning activities for careers in educational, governmental, social, and commercial agencies. Prerequisites: PE P 296 required for coaching-related practicum. Maximum of 2 credits per semester and a total of 4 credits.
- PE P 216. Individual Activities 2 cr.  
Knowledge and skills related to the individual activities of track and field, aerobics, and weight training with emphasis on developmental strategies and skill performance that influence pedagogical content knowledge. Administrative issues will be addressed.
- PE P 217. Dance and Movement 1 cr. (2P)  
Knowledge and skills related to dance movement, with emphasis on the analysis of dance elements, its role in movement education, the arts, and in cultural and multicultural areas.
- PE P 218. Outdoor Activities 1 cr. (2P)  
Knowledge, skill, techniques, policies and procedures related to selected outdoor recreation activities. Class utilizes lectures, small group activities, and outdoor field experiences for an introduction to outdoor recreation activities.
- PE P 280. Perceptual Motor Development 3 cr.  
Designed primarily for early childhood workers in day care centers, nursery and Head Start programs. Focus upon perceptual development in the young child, sequential skill progression, assessment, remediation activities through lab involvement.
- PE P 281. Theory and Technique of Fundamental Motor Skills 1 cr.  
Knowledge and skills related to fundamental motor skills with emphasis on the developmental, kinesiological, and psychological foundations of fundamental motor skill performance.
- PE P 285. Concepts in Physical Fitness 3 cr.  
Physiological benefits of exercise programs, types of programs, fitness evaluation techniques, and fitness leadership skills.
- PE P 286. Wellness and Lifestyle Choices 3 cr.  
A multidisciplinary study in personal decision-making (choices) as it relates to wellness. Issues in fitness, nutrition, and stress will be discussed.
- PE P 296. Theory of Coaching I 3 cr.  
Focus on areas of academic theory associated with coaching athletics. Orientation: theoretical and practical application.
- PE P 302. Coaching Baseball 2 cr. (1+2P)  
Emphasis on the technical and ethical aspects of coaching baseball. Prerequisite: junior standing.
- PE P 306. Coaching Softball 2 cr. (1+2P)  
Covers the technical and ethical aspects of softball coaching. Prerequisite: junior standing.
- PE P 310. Wilderness First Responder 2 cr.  
This course is a medical training course for outdoor leaders and all those who visit back country areas. Certification examination fees are the responsibility of the student. Prerequisite: consent of instructor.
- PE P 311. Organization and Administration 3 cr.  
Organization and administration of physical education programs at the public school and collegiate levels. Prerequisites: PE P 185 or consent of instructor.
- PE P 313. Practicum 1-2 cr.  
Directed leadership learning experiences for careers in educational, governmental, social and commercial agencies. A maximum of 2 credits during any one semester and a grand total of 4 credits. Prerequisites: sophomore standing and consent of instructor; PE P 296 required for coaching related practicum.
- PE P 315. Elementary School Physical Education 3 cr. (2+2P)  
Methods for teaching physical education at the elementary level. Primary focus on creating a learning environment for the acquisition and enhancement of developmentally appropriate locomotor, manipulative, and nonmanipulative skills. Field experience included. Consent of instructor required. Prerequisite(s): GPA of 2.5. Restricted to SED/PE P majors.
- PE P 318. Lifetime Activities I 2 cr.  
Knowledge and skills related to the lifetime sports of tennis, racquetball, handball, and golf. Emphasis on learning progression for these sports.
- PE P 319. Lifetime Activities 2 cr.  
Knowledge and skills related to the lifetime activities of swimming, weight training, and other fitness promoting activities with emphasis on learning progressions. Prerequisite(s): PE P 208.
- PE P 321. Team Sports I 2 cr.  
Knowledge and skills related to the team sports of flag football, soccer, and softball with emphasis on developmental strategies and skill performance that influences pedagogical content knowledge. Administrative issues will be addressed.
- PE P 322. Team Sports II 2 cr.  
Knowledge and skills related to the team sports of basketball, volleyball, and team handball with emphasis on developmental strategies and skill performance that influence pedagogical content knowledge. Administrative issues will be addressed.
- PE P 323. Racquet Sports 2 cr.  
Knowledge and skills related to the racquet sports of tennis, badminton, and pickleball with emphasis on developmental strategies and skill performance that influences pedagogical content knowledge. Administrative issues will be addressed.
- PE P 346. Personal Training 3 cr.  
Combines the theoretical aspects of personal training and associated practical experiences which prepare students to sit for personal training certification by the National Council on Strength and Fitness.
- PE P 363. Theory and Technique of Lifelong Outdoor Leisure Activities 2 cr.  
Knowledge and skills related to lifelong outdoor leisure activities, including the examination of environmental science and awareness, kinesiology, and fundamental motor skills.
- PE P 392. Theory and Technique of Sports and Games 2 cr.  
Knowledge and skills related to team sports and games, with emphasis on developmental strategies and skill performance that influence pedagogical content knowledge. Administrative issues will also be addressed.
- PE P 393. Theory and Technique of Dance and Rhythms 2 cr.  
Knowledge and skills related to dance and rhythms, with emphasis on the analysis of dance elements and its role in physical education.
- PE P 394. Theory and Technique of Sports and Games II 2 cr.  
Knowledge and skills related to individual and dual sports and games, with emphasis on developmental strategies and skill performance that influence the pedagogical content knowledge.
- PE P 408. Outdoor Adventure Expedition 1 cr.  
Expedition to various outdoor activity centers throughout the USA. Activities may include, rafting, canoeing, sailing, hiking, climbing, etc. Travel expenses and permit fees are the responsibility of the student. Prerequisite: Consent of Instructor.
- PE P 410. Physical Education Curriculum and Assessment 3 cr.  
Theoretical and practical applications for curriculum development and assessment. Provides the opportunity to develop curricula and a variety of authentic assessments in physical education settings. Consent of instructor required. Corequisite(s): PE P 466. Restricted to PE P majors.
- PE P 455. Adapted Physical Education 3 cr.  
Selection and scope of corrective activities in posture and body mechanics, and the adaptation of movement activities for the exceptional student. Prerequisite: junior or senior standing.
- PE P 465. Senior Seminar 1 cr.  
Capstone course for physical education. Prerequisite: senior standing. Graded S/U.
- PE P 466. Methods of Teaching Secondary Physical Education 6 cr.  
Theoretical and practical applications of curriculum, pedagogy and assessment for teaching secondary physical education. Provides the students opportunities to develop curriculum, teach, and assess student learning through a supervised practicum in both middle and high school physical education settings. Consent of instructor required. Prerequisite(s): PE P 315 and admittance to TEP required.
- PE P 499. Problems 1-3 cr.  
Problems in physical education and recreation and independent work in their solutions. A maximum of 3 credits during any one semester and a grand total of 6 credits. Prerequisites: senior standing and consent of instructor.



**PHIL- PHILOSOPHY**

- PHIL 100G. Philosophy, Law and Ethics** 3 cr.  
An introduction to practical problems in moral, social, political, and legal philosophy. Topics to be discussed may include ecology, animal rights, pornography, hate speech on campus, same-sex marriage, justice, abortion, terrorism, treatment of illegal immigrants, and New Mexican Aboriginal Peoples' land claims.
- PHIL 101G. The Art of Wondering** 3 cr.  
Introduction to some of the main problems of philosophy, with an emphasis on critical thinking. Philosophy conceived as an aid to living in this world with oneself and with others.
- PHIL 124G. Philosophy of Music** 3 cr.  
This is an introductory course in the philosophy of music. This course will survey three questions: What is music? Why is music important? How can we distinguish good music from bad music? We will draw examples from a wide variety of musical genres, from classical music, jazz and blues to punk and rap. Students will be encouraged to apply philosophical theorizing to think about their preferred musical form.
- PHIL 136G. The Quest for God** 3 cr.  
An effort to understand the religious life; a consideration of some of the traditional approaches to God and what it means to be religious.
- PHIL 201G. Introduction to Philosophy** 3 cr.  
Selected problems within the main branches of philosophy: metaphysics, theory of knowledge, ethics. Practice given in critical thinking.
- PHIL 211G. Informal Logic** 3 cr.  
Logical analysis of ordinary language, construction of definitions, argumentation, analysis of fallacious modes of thought and basic rhetorical considerations.
- PHIL 223G. Ethics** 3 cr.  
The philosophical explication of morality. Significant ethical systems developed in the history of Western thought.
- PHIL 275. Introduction to History and Philosophy of Science** 3 cr.  
Introduction to the history and philosophy of science. Community Colleges only. Same as HIST 275.
- PHIL 302. Business Ethics** 3 cr.  
An analysis of the ethical issues that arise in contemporary business life, including the obligations businesses and employees have to each other, consumers, society and the environment.
- PHIL 303. Asian Philosophy** 3 cr.  
Survey of the most important philosophies of the East; emphasis is on the basic teachings.
- PHIL 305. Philosophy and Literature** 3 cr.  
Examination of philosophical ideas as presented in selected literary works and literary criticism.
- PHIL 306. Philosophy Through Film** 3 cr.  
An exploration of a range of philosophical issues through the use of film. Topics include personal identity and memory, faith and the problem of evil, free will and moral responsibility, and the meaning of life. Films may include *The Prestige*, *Memento*, *The Third Man*, *A Clockwork Orange*, *Fight Club*, and *Synecdoche, New York*.
- PHIL 312. Formal Logic** 3 cr.  
Introduction to symbolic logic and its application in the analysis of arguments in scientific and ordinary discourse.
- PHIL 313. Inductive Logic and Probability** 3 cr.  
A formal introduction to the methods and problems of inductive reasoning and the concept of evidence. The relationship between inductive reasoning and the probability calculus will be explored, with an emphasis on the various interpretations of probability theory.
- PHIL 315. Philosophy of Language** 3 cr.  
A critical examination of philosophical inquiries into the syntactic, semantic, and pragmatic dimensions of language.
- PHIL 316. Philosophy of Mathematics** 3 cr.  
Survey of traditional philosophical problems and views concerning the nature of mathematics including such questions as: What is the nature of mathematical knowledge? What is mathematical truth? What is a number? What is proof? What is the relationship between logic and mathematics?
- PHIL 320. Social and Political Philosophy** 3 cr.  
This course critically examines such fundamental concepts as liberty, equality and human rights.
- PHIL 321. Biomedical Ethics** 3 cr.  
Examines ethical dimensions of such issues as abortion, euthanasia, and physician-assisted suicide; informed consent as a condition of treating patients and experimenting on subjects; genetic engineering; and alternative reproductive methods, including surrogate motherhood. Also considers what implications moral theories have for these issues.
- PHIL 322. Environmental Ethics** 3 cr.  
Explores the ethical and topical issues raised by mining and grazing, air and water pollution, factory farming, global warming, and treatment of animals. It also studies some recent ecological movements such as ecofeminism, social ecology, and deep ecology.
- PHIL 323V. Engineering Ethics** 3 cr.  
The moral legal responsibilities of engineers to clients, employers, the public, and the environment. Topics include criteria for judging when risk is acceptable, the duty to safeguard public health and welfare, conflicts of interest, and whistle-blowing. Prerequisite: Junior standing or higher.
- PHIL 324. Cyberethics** 3 cr.  
Examines contemporary ethical issues related to personal and business use of computers and the Internet, including Internet governance, advertising and privacy, intellectual property rights, free speech and censorship, encryption, anonymity, and security.
- PHIL 325. Topics in Feminist Philosophy** 3 cr.  
Philosophical treatment of issues concerning women, gender, and feminism. Topics may include social and political equality, pornography and freedom of speech, ethical issues raised by reproductive technologies, and feminist critiques of science.
- PHIL 326. Philosophy and Science Fiction** 3 cr.  
Explores a range of philosophical problems brought to light by science fiction novels, short stories, and films.
- PHIL 327. Ethics and Sports** 3 cr.  
Examines contemporary ethical issues related to sports, including the relationship between morally right action and that required for competitive success, strong paternalism in sports, fair play, doping, sportsmanship, and the impact of sports on society.
- PHIL 328. Applied Ethics** 3 cr.  
Examines the implications of utilitarianism, Kantian ethics, natural law theory, and other moral theories for controversial moral issues such as the death penalty, euthanasia, abortion, genetic engineering, gay marriage, affirmative action, and pornography.
- PHIL 329. Sexual Ethics** 3 cr.  
Examines different ethical approaches that address the question of how humans are to live as sexual beings. Explores contemporary moral issues about sexual use, rights and responsibilities, reproduction, orientation, and social policies through the lens of the various ethical perspectives.
- PHIL 330. Ethics and Biomedical Research** 3 cr.  
Explores some ethical issues raised by biological and biomedical research. Topics include: possible abuses of genetic engineering, cloning, and genetically modified foods; experimentation on humans and informed consent; animal experimentation; honesty in research and conflicts of interest; and intellectual property.
- PHIL 331. Philosophy of Religion** 3 cr.  
The nature, fundamental concepts, and problems of religion. Emphasis on the significance of religion for creative and practical value.
- PHIL 332. Ethics and Global Poverty** 3 cr.  
Philosophical scrutiny of and moral reflection on various aspects of global poverty and foreign aid. For example: Is poverty fundamentally a lack of income, or can it be understood as a failure to meet basic needs, or as a lack of valuable freedom? Do human rights exist? What, if any, are the moral obligations of rich countries to poor countries? Can foreign aid be immoral? How should the answers to these questions influence public policy? Restricted to: Main campus only.
- PHIL 341. Ancient Philosophy** 3 cr.  
Introduction to the philosophies of the pre-Socratics, Socrates, Plato, Aristotle, with brief discussion of the Epicureans and Stoics.
- PHIL 342. Medieval Philosophy** 3 cr.  
Examination of the major figures in medieval philosophy, including Augustine, Anselm, Aquinas, Bonaventure, Duns Scotus, and Ockham.
- PHIL 344. Modern Philosophy** 3 cr.  
Foundations of contemporary thought: introduction to the philosophies of Descartes, Bacon, Spinoza, Leibniz, Locke, Berkeley, Hume, Kant, and Hegel.

- PHIL 345. Contemporary Philosophy 3 cr.  
A comparative and critical examination of some twentieth century developments in philosophy, including logical positivism, ordinary language philosophy and phenomenology.
- PHIL 346. Philosophy of Mind 3 cr.  
Examination of some of the most influential accounts of the mind, focusing on such issues as the relation between the mind and the body, mental causation and consciousness.
- PHIL 350. Epistemology 3 cr.  
Introduction to epistemology. The philosophical critique of alleged ways of knowing. An examination of the nature of truth.
- PHIL 351. Philosophy of Science 3 cr.  
Philosophical examination of the methodology of science. The logical, metaphysical, epistemological, and ethical critique of science and its impact on human affairs.
- PHIL 361. Special Topics 3 cr.  
Specific subjects announced in the Schedule of Classes. May be repeated for a maximum of 9 credits.
- PHIL 363. Independent Studies 1-3 cr.  
For students with some background in philosophy. Independent work in a specific area. Prerequisite: consent of instructor. May be repeated for a maximum of 6 credits.
- PHIL 370. Aesthetics 3 cr.  
Theories on the nature and value of art.
- PHIL 373. Ethical Theory 3 cr.  
The critical examination of the justification of ethical theories with particular attention to the language of moral discourse.
- PHIL 376. Philosophy of Law 3 cr.  
Ethical, logical, and epistemological implications of law, together with an analysis of the rhetoric of legal practice.
- PHIL 380. Metaphysics 3 cr.  
Introduction to metaphysics: a treatment of such issues as the meaning of existence, the mind-body problem, the problem of universals, and free will versus determinism.
- PHIL 381. Human Nature and the Good Life 3 cr.  
An examination of some of the most historically and philosophically influential conceptions of human nature and corresponding accounts of the good life.
- PHIL 397. Existentialism 3 cr.  
Existential thought its origins and implications, together with a historical introduction to phenomenology. Contributions from literature are discussed along with more formal philosophical material.
- PHIL 413. Modal Logic 3 cr.  
A formal introduction to the logic of necessity, possibility, and impossibility: the syntactic and semantic aspects of the formal modal systems T, S4, S5, as well as their philosophical implications.
- PHIL 448. Writing Philosophy 3 cr.  
A workshop on writing philosophy papers. Includes how to read and understand philosophical writing, organize a paper effectively, present a clear and forceful argument, and avoid common mistakes. Prerequisite(s): completed 18 hours of philosophy credit.
- PHIL 463. Independent Studies 1-3 cr.  
For students with a strong background in philosophy. Independent work in a specific area. Prerequisite: consent of instructor. May be repeated for a maximum of 6 credits.

### PHTH- PUBLIC HEALTH

- PHTH 100. Introduction to Anatomy and Physiology for the Phlebotomist 4 cr. (3+3P)  
Introduction to the major human body systems and their functions, with primary emphasis on the cardiovascular system. Prerequisite: acceptance into phlebotomy program or consent of instructor.
- PHTH 101. Introduction to Phlebotomy I 3 cr.  
Introduction to basic phlebotomy and the health care field, including ethical and legal issues, medical terminology associated with the various sections of a clinical laboratory, safety, and routine venipuncture equipment and techniques. Prerequisite: acceptance into phlebotomy program or consent of instructor. Corequisite: PHTH 101 L. Restricted to majors.

- PHTH 101 L. Introduction to Phlebotomy I Lab 2 cr. (6P)  
Teaches safety, infection control, routine and special equipment and techniques used for venipuncture and dermal puncture, collection of other specimens, specimen transport, quality assurance, specimen accessioning, use of computers in health care, point-of-care testing, and urinalysis. Prerequisite: acceptance into phlebotomy program or consent of instructor. Corequisite: PHTH 101. Restricted to majors.
- PHTH 102. Introduction to Phlebotomy II 3 cr.  
Teaches specific medical terms and diseases associated with various anatomical locations, complications of venipuncture, total quality management, and quality assurance. Prerequisites: PHTH 101 and 101L. Corequisite: PHTH 103. Restricted to majors.
- PHTH 103. Phlebotomy Practicum 4 cr. (8P)  
Clinical practicum in affiliated facilities, where students will gain additional practice in techniques, point-of-care testing, and observing arterial punctures, and will become oriented with a health care setting. Prerequisite: PHTH 101 and 101L. Corequisite: PHTH 102. Restricted to majors.

### PHYS- PHYSICS

- PHYS 110G. The Great Ideas of Physics 4 cr. (3+3P)  
Conceptual, quantitative, and laboratory treatments of the great ideas and discoveries that have influenced lives and changed perceptions of nature, from Johannes Kepler's laws of planetary motion and Isaac Newton's and Albert Einstein's laws of motion and gravity to the modern concepts of the quantal structure of nature and the big bang universe.
- PHYS 120G. Introduction to Acoustics 4 cr. (3+2P)  
Lecture, demonstration, and laboratory treatment of the general properties of waves, the production, transmission, and reception of sound waves, including musical and vocal sounds, and characteristics of the human ear and several kinds of sources.
- PHYS 133. Elementary Machine Shop Techniques 1 cr. (3P)  
Introduction to basic machine shop skills, including welding techniques, the use of lathes and milling machines, and tool design. Enrollment limited to physics majors.
- PHYS 150. Elementary Computational Physics 3 cr. (2+2P)  
Introduction to computational techniques for the solution of physics-related problems. Prerequisite(s): a C or better in MATH 121G. Restricted to: Main campus only.
- PHYS 208. Physics by Inquiry I 4 cr. (3+3P)  
Selected topics in physics, with emphasis on depth of understanding and development of reasoning skills essential to the scientific process. Develops scientific literacy and provides background for teaching physical science as a process of inquiry. Prerequisite(s): C or better in MATH 120 or higher.
- PHYS 211G. General Physics I 3 cr.  
Non-calculus treatment of mechanics, waves, sound, and heat. Knowledge of simple algebra and trigonometry is required.
- PHYS 211GL. General Physics I Laboratory 1 cr.  
Laboratory experiments in topics associated with material presented in PHYS 211G or PHYS 221G. Students wishing to use the PHYS 211G-212G or PHYS 221G-222G sequence to satisfy the basic natural science General Education requirement must register for either PHYS 211GL or PHYS 212GL. Corequisite: PHYS 211G or PHYS 212G.
- PHYS 212G. General Physics II 3 cr.  
Non-calculus treatment of electricity, magnetism, and light. Prerequisite(s): PHYS 211G or PHYS 221G.
- PHYS 212GL. General Physics II Laboratory 1 cr.  
Laboratory experiments in topics associated with material presented in PHYS 212G or PHYS 222G. Students wishing to use the PHYS 211G-212G or PHYS 221G-222G sequence to satisfy the basic natural science General Education requirement must register for either PHYS 211GL or PHYS 212GL. Pre/Corequisite(s): PHYS 212 or PHYS 222.
- PHYS 213. Mechanics 3 cr.  
Newtonian mechanics. Pre/Corequisite(s): MATH 191G.
- PHYS 213 L. Experimental Mechanics 1 cr. (3P)  
Laboratory experiments associated with the material presented in PHYS 213. Science majors. Pre/Corequisite(s): PHYS 213.
- PHYS 214. Electricity and Magnetism 3 cr.  
Charges and matter, the electric field, Gauss law, the electric potential, the magnetic field, Ampere's law, Faraday's law, electric circuits, alternating currents, Maxwell's equations, and electromagnetic waves. Prerequisite(s): PHYS 213 or PHYS 215G. Pre/Corequisite(s): MATH 192G.

- PHYS 214 L. Electricity and Magnetism Laboratory 1 cr. (3P)  
Laboratory experiments associated with the material presented in PHYS 214. Prerequisite(s): a C or better in PHYS 213L or PHYS 215GL. Pre/Corequisite(s): PHYS 214.
- PHYS 215G. Engineering Physics I 3 cr.  
Calculus-level treatment of kinematics, work and energy, particle dynamics, conservation principles, simple harmonic motion. Prerequisite(s): MATH 191G.
- PHYS 215GL. Engineering Physics I Laboratory 1 cr. (3P)  
Laboratory experiments associated with the material presented in PHYS 215G. Corequisite: PHYS 215G. Students wishing to use the PHYS 215G-216G sequence to satisfy the basic natural science general education requirement must register for either PHYS 215GL or PHYS 216GL.
- PHYS 216G. Engineering Physics II 3 cr.  
A calculus-level treatment of topics in electricity, magnetism, and optics. Prerequisite(s): MATH 192G and (PHYS 213 or PHYS 215G).
- PHYS 216GL. Engineering Physics II Laboratory 1 cr. (3P)  
Laboratory experiments associated with the material presented in PHYS 216G. Prerequisite: a C or better in PHYS 213L or PHYS 215GL. Corequisite: PHYS 216G. Students wishing to use the PHYS 215G-216 sequence to satisfy the basic natural science general education requirement must register for either PHYS 215GL or PHYS 216GL.
- PHYS 217. Heat, Light, and Sound 3 cr.  
Calculus-level treatment of thermodynamics, geometrical and physical optics, and sound. Prerequisite: PHYS 213 or PHYS 215G.
- PHYS 217 L. Experimental Heat, Light and Sound 1 cr. (3P)  
Laboratory experiments associated with the material presented in PHYS 217. Science majors. Prerequisite(s): a C or better in PHYS 213L or PHYS 215GL. Pre/Corequisite(s): PHYS 217.
- PHYS 221G. General Physics for Life Sciences I 3 cr.  
This algebra-based introduction to general physics covers mechanics, waves, sound, and heat. Special emphasis is given to applications in the life sciences. This course is recommended for students in the life sciences and those preparing for the physics part of the MCAT. Prerequisites: a C or better in MATH 120 or higher.
- PHYS 222G. General Physics for Life Sciences II 3 cr.  
This algebra-based course covers electricity, magnetism, light, atomic physics, and radioactivity. Special emphasis is given to applications in the life sciences. This course is recommended for students in the life sciences and those preparing for the physics part of the MCAT. Prerequisite: PHYS 211G or PHYS 221G.
- PHYS 223. Supplemental Instruction to PHYS 221 1 cr.  
This optional workshop supplements Physics for Life Sciences I. The tutorial sessions focus on reasoning and hands-on problem solving. Corequisite(s): PHYS 221G.
- PHYS 224. Supplemental Instruction to PHYS 222 1 cr.  
This optional workshop is a supplement to Physics for Life Science II. The tutorial sessions focus on reasoning and hands-on problem solving. Corequisite(s): PHYS 222G.
- PHYS 280. Independent Study 1-3 cr.  
Individual analytical or laboratory studies directed by a faculty member. Prerequisite: consent of instructor. May be repeated for a maximum of 6 credits.
- PHYS 290. Special Topics 1-3 cr.  
Topics to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits.
- PHYS 301V. Photonics 3 cr.  
Introduction to photonics with applications to telecommunications, optical computing, environmental remote sensing, holography, laser surgery, and biomedical diagnostics.
- PHYS 303V. Energy and Society in the New Millennium 3 cr.  
Traditional and alternative sources of energy. Contemporary areas of concern such as the state of depletion of fossil fuels; nuclear energy, solar energy, and other energy sources; environmental effects; nuclear weapons; and health effects of radiation. Discussion of physical principles and impact on society. Focus on scientific questions involved in making decisions in these areas. No physics background required.
- PHYS 304. Forensic Physics 4 cr. (3+3P)  
Theories, laboratory, and field techniques in the area of forensic physics.
- PHYS 305V. The Search for Water in the Solar System 3 cr.  
Examines the formation, abundance and ubiquity of water in our Solar System stemming from comets, Martian and Lunar poles, Earth's interior and into the outer reaches of the Solar System. Topics will include nuclear synthesis, Solar System formation, remote sensing, as well as past, present and future NASA missions for water.
- PHYS 315. Modern Physics 3 cr.  
An introduction to relativity and quantum mechanics, with applications to atoms molecules, solids, nuclei, and elementary particles. Prerequisites: MATH 291G and PHYS 214 or PHYS 216G.
- PHYS 315 L. Experimental Modern Physics 3 cr. (1+6P)  
Elementary laboratory in modern physics which supports the subject matter in PHYS 315. Required for physics majors. Prerequisite(s): a C or better in PHYS 214L or 216GL. Pre/Corequisite(s): PHYS 315.
- PHYS 350. Special Topics 1-3 cr.  
Lectures, demonstrations, and discussions on such topics as lasers and holography, energy sources, clouds, and biophysics. May be repeated for a maximum of 12 credits under different subtitles.
- PHYS 380. Individual Study 1-3 cr.  
Individual analytical or laboratory studies directed by a faculty member. Prerequisite: consent of instructor. May be repeated for a maximum of 6 credits.
- PHYS 395. Intermediate Mathematical Methods of Physics 3 cr.  
Introduction to the mathematics used in intermediate-level physics courses. Topics include vector calculus, curvilinear coordinates, matrices, linear algebra, function spaces, partial differential equations, and special functions. Prerequisite(s): MATH 291G. Pre/Corequisite(s): MATH 392.
- PHYS 400. Undergraduate Research 1-3 cr.  
May be repeated for a maximum of 6 credits. Prerequisite: consent of instructor.
- PHYS 450. Selected Topics 1-3 cr.  
Readings, lectures or laboratory studies in selected areas of physics. May be repeated for a maximum of 12 credits.
- PHYS 451. Intermediate Mechanics I 3 cr.  
Vector calculus, Lagrangian and Hamiltonian formulations of Newtonian mechanics. Topics include central force motion, dynamics of rockets and space vehicles, rigid body motion, noninertial reference frames, oscillating systems, relativistic mechanics, classical scattering, and fluid mechanics. Prerequisite(s): PHYS 213 or PHYS 215G, and MATH 291G. Pre/Corequisite(s): MATH 392.
- PHYS 454. Intermediate Modern Physics I 3 cr.  
Introduction to quantum mechanics, the modern theory of mechanics governing all fundamental processes. Topics include: distinct quantum states; angular momentum; time evolution of quantum systems; motion in one- and three-dimensions; bound states; perturbation theory, and scattering. Among the many quantum phenomena discussed are: the Stern-Gerlach experiment; the ammonia maser; spin precession and resonance; harmonic oscillation; quantum tunneling; atoms and molecules; radioactive decay; systems of identical particles. Prerequisite(s): MATH 392 and PHYS 315.
- PHYS 455. Intermediate Modern Physics II 3 cr.  
Continuation of topics in PHYS 454. Prerequisites: PHYS 454. Main campus only.
- PHYS 461. Intermediate Electricity and Magnetism I 3 cr.  
Covers electro- and magneto-statics, dielectric and magnetic materials, electromagnetic wave propagation, reflection, refraction, waveguides, radiating systems, interference and diffraction, Newtonian and relativistic electrodynamics and plasma physics. Prerequisite(s): PHYS 214 or PHYS 216G or equivalent and MATH 291G. Pre/Corequisite(s): MATH 392 and PHYS 395.
- PHYS 462. Intermediate Electricity and Magnetism II 3 cr.  
Continuation of topics in PHYS 461. Prerequisites: PHYS 461. Main campus only.
- PHYS 471. Modern Experimental Optics 2 cr. (6P)  
Advanced laboratory experiments in optics related to the material presented in PHYS 470. Prerequisite/corequisite: PHYS 470. Same as E E 481.
- PHYS 472. Non-Linear Optical and Laser Physics 3 cr.  
An introduction to the physics of non-linear optical processes primarily involving the interaction of intense laser radiation with matter. Topics include elements of laser physics, harmonic generation, stimulated Rayleigh, Raman, and Brillouin scattering, self-focusing and optical phase conjugation.

- PHYS 473. Introduction to Optics 3 cr.  
The nature of light, Geometrical optics, basic optical instruments, wave optics, aberrations, polarization, and diffraction. Elements of optical radiometry, lasers and fiber optics. Prerequisite(s): PHYS 216G or PHYS 217. Crosslisted with: E E 473
- PHYS 475. Advanced Physics Laboratory 0-3 cr.  
Advanced undergraduate laboratory involving experiments in atomic, molecular, nuclear, and condensed-matter physics. Prerequisite: PHYS 315 and 315L
- PHYS 476. Computational Physics 3 cr.  
An introduction to finite difference methods, Fourier expansions, Fourier integrals, solution of differential equations, Monte Carlo calculations, and application to advanced physics problems. Prerequisite(s): PHYS 150 or equivalent and MATH 392.
- PHYS 477. Fiber Optic Communication Systems 4 cr. (3+3P)  
See E E 477 Prerequisite(s): C or better in E E 315 or PHYS 461. Crosslisted with: E E 477
- PHYS 478. Optical Sources, Detectors, and Radiometry 4 cr. (3+3P)  
See E E 478. Prerequisite(s): PHYS 217. Crosslisted with: E E 478
- PHYS 479. Lasers and Applications 4 cr. (3+3P)  
See E E 479 Prerequisite(s): C or better in E E 315 or in PHYS 461. Crosslisted with: E E 479
- PHYS 480. Thermodynamics 3 cr.  
Thermodynamics and statistical mechanics. Basic concepts of temperature, heat, entropy, equilibrium, reversible and irreversible processes. Applications to solids, liquids, and gases. Prerequisites: PHYS 217, PHYS 315 and MATH 291G.
- PHYS 485. Independent Study 1-3 cr.  
Individual analytical or laboratory studies directed by a faculty member. Prerequisite: consent of instructor. May be repeated for a maximum of 6 credits.
- PHYS 488. Condensed Matter Physics 3 cr.  
Crystal structure, X-ray diffraction, energy band theory, phonons, cohesive energy, conductivities, specific heats, p-n junctions, defects, surfaces, and magnetic, optical, and low-temperature properties. Prerequisite: PHYS 315.
- PHYS 489. Introduction to Modern Materials 3 cr.  
Structure and mechanical, thermal, electric, and magnetic properties of materials. Modern experimental techniques for the study of material properties. Prerequisite: PHYS 315.
- PHYS 491. High Energy Physics I 3 cr.  
Particle detectors, accelerators, and experimental techniques. Fundamental particles and interactions. Symmetries in particle physics. Quark model of hadrons. Electroweak theory. Strong interactions and QCD. Nuclear interactions at high energies. Grand unification. Super symmetry. Prerequisite(s): PHYS 455.
- PHYS 493. Experimental Nuclear Physics 3 cr. (1+6P)  
Selected experimental investigations in nuclear physics such as measurement of radioactivity, absorption of radiation, nuclear spectrometry. Prerequisite: PHYS 315.
- PHYS 495. Mathematical Methods of Physics I 3 cr.  
Applications of mathematics to experimental and theoretical physics. Topics selected from: complex variables; special functions; numerical analysis; Fourier series and transforms, Laplace transforms. Prerequisite(s): MATH 392 and PHYS 395.
- PL S- PARALEGAL STUDIES**
- PL S 160. Legal System for the Paralegal 3 cr.  
Introduction to the court system, administrative agencies, functions of law offices, and professional conduct and legal ethics.
- PL S 161. Legal Terminology 3 cr.  
Survey of the language of the law that will serve either as an introductory course or as a review course to prepare students for the certification test.
- PL S 162. The Virtual Law Office 3 cr.  
The Virtual Law Office class is a 'hands-on', project oriented course designed to provide the student with the basic law office skills needed to function successfully in a law office setting. The student will gain a practical, working knowledge of the procedures necessary to work in a law office. The skills learned in the class will directly translate to real life situations. Restricted to: Community Colleges only.
- PL S 165. The American Legal System 3 cr.  
A study of the American judicial system with a focus on New Mexico's judicial system; history of Anglo-American law, organization of the modern legal system, and trends in the legal profession.
- PL S 180. Constitutional Law for the Paralegal 3 cr.  
Case standing of the law of the Constitution and Bill of Rights with regard to day-to-day applications in the law practice. Documents dealing with constitutional problems in both civil and criminal areas of law will be drafted and discussed. Prerequisite: PL S 160.
- PL S 190. Criminal Law for the Paralegal 3 cr.  
Introduction to federal and state criminal law; criminal proceedings, prosecution and defense, sentencing and appeal. Prerequisite: PL S 160.
- PL S 200. Legal Ethics for the Paralegal 2 cr.  
Introduction to ethical dilemmas faced in the workforce and the rules of ethics developed by the American Bar Association, various national paralegal organizations, and the Supreme Court of New Mexico.
- PL S 203. Immigration Law 3 cr.  
Survey of the basics of immigration law including the rights and obligations of citizenship and the naturalization process. Prerequisite: PL S 160.
- PL S 205. Legal and Ethical Issues for the Web 2 cr.  
Legal, ethical, copyright, and privacy issues specific to the Internet.
- PL S 221. Cooperative Experience I 2-4 cr.  
Student employed in approved work site; supervised and rated by employer and instructor. Each credit requires specified number of hours of on-the-job work experience. Prerequisite: PL S 274. Restricted to majors.
- PL S 222. Cooperative Experience II 1-3 cr.  
Continuation of PL S 221. Each credit requires specified number of hours of on-the-job work experience. Prerequisite: PL S 221. Restricted to majors.
- PL S 231. The Law of Commerce for the Paralegal 3 cr.  
Law of agency, commercial paper, personal property, consumer rights. Student will study and draft documents relevant to these fields and consider their application and use in routine law practice. Prerequisite: PL S 160.
- PL S 255. Special Topics 1-4 cr.  
Specific subjects to be announced in the Schedule of Classes. May be repeated for a maximum of 6 credits.
- PL S 270. Administrative Law for the Paralegal 3 cr.  
A study of the substantive law, procedures, and forms involved in practice before governmental agencies including worker's compensation, social security, employment security, and state and local administrations. Prerequisite: PL S 160.
- PL S 272. Bankruptcy Law for the Paralegal 3 cr.  
Individual and corporate bankruptcy; the basic principles and processes of bankruptcy law as a system of debtor relief and debt collection. Prerequisite: PL S 160.
- PL S 274. Legal Research and Writing for the Paralegal I 3 cr.  
Legal memoranda, briefs, and pleadings will be prepared and written based on the student's original research. Research materials and techniques will be identified and studied; introduction of computer usage in legal research. Prerequisite: PL S 160 and ENGL 111G.
- PL S 275. Tort and Insurance for the Paralegal 3 cr.  
Primary legal principles of tort and insurance law and means of establishing insurance plans, types of torts and insurance, as well as use of specific forms and procedures relating to these areas. Prerequisite: PL S 160.
- PL S 276. Wills, Trusts, and Probate for the Paralegal 3 cr.  
Cases and statutes dealing with wills, trusts, and probate. Emphasis on preparation and drafting of documents and the application of the law and documents to the client's problems. Prerequisite: PL S 160.
- PL S 277. Family Law for the Paralegal 3 cr.  
Methods of conducting client interviews and drafting of pleadings and research relative to families. Laws relating to marriage, divorce, custody, support, adoption, name change, guardianship, and paternity. Prerequisite: PL S 160.
- PL S 278. Litigation for the Paralegal 3 cr.  
The law of procedure and evidence will be considered through rules and cases. Case situations will be used to identify and solve problems. Prerequisite: PL S 160.
- PL S 279. Legal Research and Writing for the Paralegal II 3 cr.  
Continuation of PL S 274. Advanced training in legal research problems with a focus on analysis, writing, and preparation of sophisticated legal memoranda and documents. Prerequisite: PL S 274.
- PL S 280. Interviewing and Investigation for the Paralegal 3 cr.  
Techniques of legal interviewing and investigation with emphasis on development of human relations and communication skills. Prerequisite: PL S 160.



PL S 298. Independent Study 3 cr.  
Individual studies directed by consenting faculty with prior approval by department head. Prerequisite: PL S 160. May be repeated for maximum of 6 credits. Restricted to majors.

### PLAN- PLANNING

PLAN 401. Internship 3-12 cr.  
Provides the student with an opportunity to participate in planning activities under the supervision of a planning professional and planning faculty. Prerequisite: PLAN 201. May be repeated for a maximum of 12 credits.

PLAN 493. Special Problem Research 1-3 cr.  
For advanced and exceptional students. Research paper in some phase of city and/or regional planning. Maximum of 6 credits. Prerequisite: consent of instructor.

PLAN 495. Directed Readings 1-3 cr.  
Individual study through readings. A maximum of 6 credits may be earned. Prerequisite: consent of instructor.

### PORT- PORTUGUESE

PORT 113. Familiarization with the Portuguese Language and Brazilian Culture 4 cr.  
Portuguese listening, comprehension and vocabulary. Confidence building activities are designed to develop oral skills. This course is offered for students doing intensive study in Brazil. Prerequisite: placement test. Graded S/U.

PORT 213. Portuguese for Romance Language Students I 3 cr.  
Introduction to the Portuguese language, Brazilian culture, and civilization. Taught in Portuguese. Open to students with any previous Romance language study (French, Italian, Portuguese, Romanian, Spanish).

PORT 214. Portuguese for Romance Language Students II 3 cr.  
Continuation of PORT 213. Prerequisite: C or better in PORT 213 or consent of instructor.

PORT 313. Advanced Portuguese Communication 3 cr.  
Exercises in written Portuguese and grammar with emphasis on written communication. Prerequisite: PORT 214 or consent of instructor.

PORT 325. Portuguese Conversation 3 cr.  
Spoken Portuguese with emphasis on contemporary topics. Prerequisite: PORT 214 or consent of instructor.

PORT 449. Special Problems 1-3 cr.  
Directed readings for graduate students in their specific fields to satisfy language requirements for master's or doctoral programs. Course subtitled in Schedule of Classes. May be repeated for a maximum of 6 credits.

PORT 451. Special Topics in Luso-Brazilian Studies 3 cr.  
Selected topics relating to Luso-Brazilian cultures and literatures. Topic to be announced in the schedule of classes. Prerequisite: Consent of instructor.

PORT 453. Independent Luso-Brazilian Studies 1-3 cr.  
Individualized, self-paced projects for advanced students in Luso-Brazilian studies.

### PSY- PSYCHOLOGY

PSY 201G. Introduction to Psychology 3 cr. (3+3P)  
Methods and principles of behavior. Topics include human evolution and development, biopsychology, perception, learning, thinking, motivation, social interaction, and the diagnosis and treatment of abnormal behavior.

PSY 211. Introduction to Research 1 cr.  
Introductory skills in library and on-line research. Emphasizes the scientific method including oral and written presentation of research according to the APA Style Handbook. Does not replace PSY 310 as requirement in B.A. degree. Community Colleges only.

PSY 266. Applied Psychology 3 cr.  
Explanation of the psychological principles of everyday living. Emphasizes motivation, learning of intelligent behavior, and applications of psychology to social issues. Community Colleges only.

PSY 270. Special Topics 1-3 cr.  
Specific subjects to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits. Community College campus only.

PSY 274. A Study of Substance Abuse through Service Learning 3 cr.  
Physiological and psychological impact of drug use on human behavior. Emphasizes practical applications of intervention and prevention in the community. Community Colleges only.

PSY 290. Psychology of Adjustment 3 cr.  
Analyzes the responses people have to conflict, emotional stress, and frustration. It focuses on adapting to these problems and examines both normal and neurotic responses. Community College campus only.

PSY 301. Introduction to Psycholinguistics 3 cr.  
Psychological aspects of language, including linguistic theories of grammar, psychological factors influencing language performance, primary language acquisition and the relationship of language to thought processes. Prerequisites: PSY 201G and one of: STAT 251G, STAT 271G, or E ST 311; and PSY 310 or consent of instructor. Same as LING 301.

PSY 302. Abnormal Psychology 3 cr.  
Introduces the types, causes, and treatment of mental disorders. Descriptions and explanations of the neuroses, affective disorders and the psychoses. Case histories are also analyzed. Prerequisites: PSY 201G, MATH 120 and Eng 111G.

PSY 303. Community Psychology 3 cr.  
Emphasizes prevention (not treatment) of mental health problems through early intervention programs. The role of paraprofessionals, and non-traditional interventions in such fields as education and criminal justice are reviewed. Prerequisite: PSY 201G.

PSY 310. Experimental Methods 4 cr. (2+4P)  
The basic skills of literature search, experimental design, research methodology, and research reporting are emphasized; includes laboratory. Prerequisite(s): STAT 251G, STAT 271G, or E ST 311.

PSY 311. Advanced Research Seminar 4 cr. (2+4P)  
Psychological research in conjunction with designing, conducting, writing, and presenting an independent research project. May also include various computer applications. Will discuss issues regarding application to graduate programs. Course should be taken no later than the first semester of senior year. Prerequisite: PSY 310.

PSY 315. Emotion 3 cr.  
An overview of the past century of research on human emotion from William James to Antonio Damasio. Explores a cognitive science perspective on emotion that includes questions about developmental, physiological, and evolutionary aspects of emotion and an exploration of the proximate and ultimate functions of emotion. Topics range from understanding the feeling component of emotion to understanding the role of facial displays of emotion. Prerequisite(s): PSY 201G, and one of: STAT 251, STAT 271, or A ST 311G, and PSY 310 or consent of instructor.

PSY 317. Social Psychology 3 cr.  
Ways in which people are influenced by the behavior of others are analyzed. Includes aggression, altruism, conformity, attraction, sexual behavior, prejudice, and nonverbal behavior. Prerequisites: PSY 201G, MATH 120, and ENGL 111G.

PSY 320. Learning 4 cr. (3+2P)  
Covers: habituation, Pavlovian conditioning, Thorndikian learning, stimulus generalization, transfer of training, and the learning and forgetting of related and unrelated material. Prerequisites: PSY 201G, and one of: STAT 251G, STAT 271G, or E ST 311, and PSY 310.

PSY 321. Psychology of Personality 3 cr.  
Introduces personality theories and supporting research. Psychoanalytic, physiological, and behavioral theories as they apply to personality are examined. Focuses on normal personality functioning. Prerequisites: PSY 201G, and one of: STAT 251G, STAT 271G, or E ST 311, and PSY 310.

PSY 324. Sexual Behavior 3 cr.  
Examines viewpoints of the evolution, control and function of human sexual behavior. Includes human sexuality, reproduction, male-female conflicts and the social implications of sex. Prerequisites: PSY 201G, MATH 120, and ENG 111G

PSY 325. Health Psychology 3 cr.  
Life stress, surgical stress, coronary-prone behavior, biofeedback, pain control, psychosocial approaches to geriatrics and cancer, behavioral treatments for addictions, obesity, and interpersonal issues in health care. Prerequisite: PSY 201G.

PSY 330. Psychology and the Law 3 cr.  
Discretionary practices in the judicial system including pretrial procedures, jury selection, jury decision making, eyewitness testimony, insanity, expert witnesses, and probation judgments. Prerequisite: PSY 201G.

PSY 340. Cognitive Psychology 3 cr.  
Review of research and theory in the study of human cognitive processes. Topics include information processing, pattern recognition, memory, attention, language, problem solving, decision making, and reasoning. Prerequisites: PSY 201G, and one of: STAT 251G, STAT 271G, or E ST 311, and PSY 310.

- PSY 342. Cognitive Neuroscience 3 cr.  
Introduction to the study of the neural mechanisms underlying cognitive processes. Topics include relations between neural processes and attention, perception, memory, thinking and language; measuring changes in electrical activity, blood flow, and metabolism in the brain during cognition; the problem of consciousness; and evolutionary perspectives. Prerequisites: PSY 201G and PSY 310.
- PSY 345. Human Factors Psychology 3 cr.  
Concepts, methods and findings in the study and prediction of human performance. Emphasizes the human operator as a unified system which receives, stores, and processes information, enumerates and selects alternatives, and acts. Prerequisites: PSY 201G, and one of: STAT 251G, STAT 271G, or E ST 311, and PSY 310 or consent of instructor.
- PSY 350. Developmental Psychology: Conception through Childhood 3 cr.  
Covers a wide range of topics concerning human psychological development from conception through childhood with special emphasis on current research and theory. Prerequisite: PSY 201G.
- PSY 351. Developmental Psychology: Adolescence through Old Age 3 cr.  
Covers a wide range of topics concerning human psychological development from adolescence through old age with special emphasis on current research and theory. Prerequisite: PSY 201G.
- PSY 358. Individual and Group Differences 3 cr.  
The influence of biological and social factors (heredity, race, sex, age, environment, social class) upon psychological variables (intelligence, aptitude, ability, achievement, personality, interests, values). Prerequisites: PSY 201G, and one of: STAT 251G, STAT 271G, or E ST 311, and PSY 310 or consent of instructor.
- PSY 359. Psychology of Women 3 cr.  
Examines theories and research on the psychological functioning of women in North American society. Influential theories of gender in psychology and current controversies in the psychological literature. Topics include women's development across the lifespan, women and work, women's physical and mental health and sexuality, the victimization of women, gender stereotypes, biological, social, and cultural influences on women's behavior, and gender comparisons in abilities and personality. Prerequisite: PSY 201G. Same as W S 359.
- PSY 370. Special Topics 1-3 cr.  
May be taken under different subtitles announced in the Schedule of Classes for unlimited credit. Prerequisite: PSY 201G. May be repeated for a maximum of 12 credits.
- PSY 372. Aviation Psychology 3 cr.  
Human performance in aviation systems: cockpit (displays, controls), National Airspace System, Air Traffic Control, crew coordination, selection, training, simulation, reliability, and analytic strategies. Prerequisites: PSY 201G, and one of: STAT 251G, STAT 271G, or E ST 311, and PSY 310 or consent of instructor.
- PSY 374. Psychopharmacology and Toxicology 3 cr.  
How and why drugs and environmental chemicals affect behavior. Prerequisites: PSY 201G, PSY 310 and PSY 311.
- PSY 375. Behavioral Neuroscience 3 cr.  
Brain mechanisms that underlie cognition, emotion, and behavior. Prerequisite(s): PSY 201G, PSY 310, PSY 311 and one of: STAT 251, STAT 271, or A ST 311G, BIOL 211G, or consent of instructor.
- PSY 376. Evolutionary Psychology 3 cr.  
This course introduces the student to the science of Evolutionary Psychology. In this class we will explore how evolutionary psychologists think about a variety of topics ranging from our capacity for (and appreciation of) art, emotions, and beauty to an exploration of the "design" of our minds in regards to mating, status striving, social behavior and cultural production. Prerequisite(s): PSY 201G, and one of: STAT 251, STAT 271, or A ST 311G, and PSY 310 or consent of instructor.
- PSY 380. Perception 4 cr. (4+4P)  
Primary emphasis on vision. Topics include measurement of sensations, development of visual-motor coordination, reading, speech perception, picture perception, illusions, 3-dimensional space, and causes and consequences of visual abnormalities. Prerequisites: PSY 201G, and one of: STAT 251G, STAT 271G, or E ST 311, and PSY 310.
- PSY 383. Memory 3 cr.  
Examines facets of human memory from the information processing viewpoint, including encoding, storage, and retrieval and memory-aiding techniques. Prerequisites: PSY 201G, and one of: STAT 251G, STAT 271G, or E ST 311, and PSY 310 or consent of instructor.
- PSY 384. Perceptual and Cognitive Development 3 cr.  
Development across the lifespan in perception, memory, attention, reasoning, language and academic skills. Prerequisites: PSY 201G, and one of: STAT 251G, STAT 271G, or E ST 311, and PSY 310 or consent of instructor.
- PSY 400. Research 1-3 cr.  
Individual research projects supervised by a department faculty member. Prerequisites: PSY 310 and consent of instructor. May be repeated for a maximum of 6 credits.
- PSY 401. Directed Readings 1-3 cr.  
Prerequisites: PSY 201G and consent of instructor. May be repeated for a maximum of 6 credits.
- PSY 402. Field Experience 1-3 cr.  
Working with preschool, juvenile delinquent, handicapped, aged, convict, or mentally ill. Approximately five hours scheduled work per week per credit. May be repeated to 6 credits. Prerequisites: 6 psychology credits and consent of instructor.
- PSY 417V. Intercultural Relations 3 cr.  
Exploration of cultural and subcultural differences from a psychological perspective. Emphasis on modern cultural settings. Issues may include: ethnocentrism, stereotyping, intercultural communication, culture shock, cultural differences, nonverbal behavior, conflict management, and developing intercultural interaction skills. Prerequisite: PSY 201G.
- PSY 430. Human-Computer Psychology 3 cr.  
Theories, methodologies, and data from psychology applicable to interface design, with an emphasis on construction and application of conceptual psychological models. Prerequisites: PSY 201G, and one of: STAT 251G, STAT 271G, or E ST 311, and PSY 310 or consent of instructor.
- PSY 440. History and Systems of Psychology 3 cr.  
History of scientific method emphasizing outstanding methodological problems of contemporary science, especially psychology. Also covers recent history of psychology and development of schools of psychology. Prerequisites: PSY 201G, and one of: STAT 251G, STAT 271G, or E ST 311, and PSY 310 or consent of instructor.
- PSY 442. Thinking 3 cr.  
Research and theory pertaining to human thinking and problem solving. Effective problem-solving methods and common obstacles to problem solving are analyzed. Prerequisites: PSY 201G and PSY 310.
- PSY 445. Clinical Psychology 3 cr.  
Basic theories in clinical psychology and techniques of psychotherapy. Prerequisites: PSY 201G, PSY 302, and one of: STAT 251G, STAT 271G, or E ST 311, and PSY 310 or consent of instructor.
- PSY 450. Senior Thesis 3 cr.  
A laboratory or field research project conducted under faculty supervision. Requires written research proposal, conduct of research, data analysis, and final written report. Prerequisites: PSY 310, 6 additional psychology credits, consent of supervising faculty member, and junior or above standing. May be repeated for a maximum of 6 credits.
- PSY 470. Special Topics 1-3 cr.  
Specific subjects to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits.
- RADT- RADIOLOGIC TECHNOLOGY**
- RADT 100. Introduction to Radiologic Technology and Patient Care 2 cr.  
Overview of the profession, including ethics, terminology, and basic radiation protection. Addresses basic and specialized procedures and topics related to the care of the patient. Community Colleges Only. Restricted to Majors.
- RADT 101. Radiographic Positioning I 4 cr. (2+6P)  
Covers radiographic procedure and positioning concepts, techniques, terminology, and mechanics related to the thorax, abdomen, extremities, spine and pelvis. Includes positioning lab and clinical observation.
- RADT 102. Radiographic Positioning II 4 cr. (2+6P)  
Continuation of RADT 101. Includes skull, gastrointestinal, urinary, reproductive, biliary systems, and more advanced skeletal positions. Includes positioning lab and clinical observation. Community Colleges Only. Restricted to Majors. Prerequisite: RADT 101.
- RADT 103. Introduction to Radiographic Imaging 3 cr. (2+2P)  
Provides the student with an in-depth knowledge of radiographic exposure technique and the factors affecting radiographic film quality. Includes lab experiments. Prerequisite: RADT 103. Restricted to majors.

- RADT 104. Special Radiologic Modalities** 2 cr.  
Discussion of various special procedures used in medical imaging such as angiography, ultrasound, computerized tomography, magnetic resonance imaging, digital imaging, nuclear medicine, radiation therapy, etc. Includes guest lectures and field trips. Prerequisite: RADT 203.
- RADT 105. Radiographic Physics and Equipment** 3 cr.  
Fundamentals of rad physics. Includes electromagnetism, x-ray production and interactions, x-ray circuitry, tubes, grids, screens, AES, fluoroscopic and portable units, beam restricting devices, calibration and quality assurance/control. Overview of mammography, US, CT, MRI, and digital radiography. Community Colleges Only. Restricted to Majors. Prerequisite: RADT 103 or consent of instructor.
- RADT 106. Introduction to Clinical Education in Radiology** 6 cr. (40P)  
Introduction to basic policies and procedures in clinical settings; hands-on clinical hours. Community Colleges Only. Restricted to Majors. Prerequisite: RADT 102.
- RADT 110. Radiographic Pathology** 1 cr.  
Overview of pathology demonstrated by radiographic procedures. Prerequisite: RADT 154. Restricted to majors.
- RADT 154. Radiographic Anatomy and Physiology** 3 cr.  
Basic AP for radiographic application. Includes a systems approach to body structures and organs as they relate to anatomical projections, radiographic identification, and various imaging modalities. Restricted to majors. Prerequisite(s): BIOL 225 or BIOL 226 or consent of instructor. Restricted to: Community Colleges only.
- RADT 156. Independent Study** 1-6 cr.  
Individual studies/research on topics related to the radiological sciences. May be repeated for a maximum of 6 credits. Restricted to: Community Colleges only.
- RADT 200. Radiation Biology and Protection** 1 cr.  
Biological effects of ionizing radiation on cells and tissues. Includes radiation measurements, policies and protection measures for self, patients, and others. Prerequisite: RADT 105. Restricted to majors.
- RADT 201. Clinical Education I** 6 cr. (40P)  
Supervised practice in a radiology department under direct supervision of a registered technician. Includes film critiques. Community Colleges Only. Restricted to Majors. Prerequisite: RADT 106.
- RADT 202. Clinical Education II** 11 cr. (36P)  
Continuation of RADT 201. Student will work under indirect supervision of registered personnel. Prerequisite(s): RADT 201. Restricted to: Community Colleges only.
- RADT 203. Clinical Education III** 10 cr. (34P)  
Continuation of RADT 202. Prerequisite: RADT 202. Restricted to majors.
- RADT 205. Radiographic Image Critique** 1 cr.  
Review of radiographs produced in clinical settings to evaluate anatomy and technical issues. Prerequisite: RADT 201. Restricted to majors.
- RADT 206. Applied Radiographic Procedures** 2 cr. (1+3P)  
Advanced course which integrates the principles and techniques of radiologic technology. Prerequisite: RADT 202. Restricted to majors.

### RDG- READING

- RDG 350. Teaching and Learning Reading and Writing** 3 cr. (2+2P)  
The foundation of this course is on understanding the reading process including the relationship between reading, writing, listening, and speaking; individual needs and abilities in reading instruction; and how to organize classrooms and select materials to support literacy development. Concepts of phonemic awareness, phonic instruction, vocabulary development, fluency and comprehension are integrated with the developmentally appropriate use of authentic assessment techniques, language/literacy immersion, and multicultural children's literature. Prerequisite(s): ECED 235. Corequisite(s): ECED 440, ECED 455, ECED 329. Crosslisted with: RDG 360
- RDG 360. Elementary School Literacy I** 3 cr. (2+2P)  
Reading development, curriculum, and instruction in the elementary grades. Required of all elementary education majors as a prerequisite to student teaching. Corequisites: ECED 450, EDUC 451, and EDUC 452 (Block A courses). Same as RDG 560 with differentiated assignments for graduate students.
- RDG 361. Elementary School Literacy II** 3 cr. (2+2P)  
Reading development in curriculum and instruction with assessment and evaluation in the elementary grades (K-8). Prerequisite: RDG 360. Corequisites: EDUC 453, EDUC 454, and EDUC 455 (Block B courses). Same as RDG 561 with differentiated assignments for graduate students.

- RDG 371. Instruction for Special Reading Needs** 3 cr.  
Emphasizes appropriate techniques for teaching reading to learners with special needs. Prerequisites: RDG 356 or RDG 360 and RDG 361. Cannot substitute for RDG 361.
- RDG 395. Special Topics** 1-3 cr.  
Each course will be identified by a qualifying subtitle. A maximum of 3 credits in any one semester and a grand total of 6 credits.
- RDG 414. Content Area Literacy** 3 cr. (2+2P)  
Surveys integrated reading/writing/discursive practices in middle/secondary content areas. Same as RDG 514.

### RESP- RESPIRATORY THERAPY

- RESP 110. Respiratory Therapy I** 3 cr.  
Introduction to basic respiratory care techniques. Includes history, professional organizations, medical gas administration, oxygen therapy, cardiopulmonary AP, patient assessments, and medical terminology. Requires a C or better to remain in program. Restricted to: Community Colleges only. Restricted to DA-RESP-AA majors.
- RESP 110 L. Respiratory Therapy I Lab** 2 cr.  
Laboratory practice of basic respiratory care procedures. Requires a C or better to remain in program. Restricted to: Community Colleges only. Restricted to DA-RESP-AA majors.
- RESP 111. Respiratory Therapy Cardio Pulmonary Diseases** 3 cr.  
Introduction to basic respiratory care techniques and concepts of physics as they apply to the physiology of the lung. Restricted to: Community Colleges only. Restricted to DA-RESP-AA majors.
- RESP 115. Respiratory Therapy Pharmacology** 3 cr.  
Concepts of physics as they apply to the physiology of the lungs. Requires a C or better to remain in program. Restricted to: Community Colleges only. Restricted to DA-RESP-AA majors.
- RESP 120. Respiratory Therapy II** 3 cr.  
Advanced respiratory care techniques. Emphasis on airway management, aerosol treatment, chest physiotherapy, pharmacology, posture pressure breathing, and pulmonary rehabilitation. Requires a C or better to remain in program. Prerequisite(s): Admission to program and RESP 110. Corequisite(s): RESP 120L. Restricted to: Community Colleges only. Restricted to RESP majors.
- RESP 120 L. Respiratory Therapy II Lab** 2 cr. (6P)  
Continuation of lab practices and procedures learned in RESP 120, Respiratory Care II, using equipment and simulations. Requires a C or better to remain in program. Prerequisite(s): Admission to program, RESP 110, RESP 110L and RESP 112. Corequisite(s): RESP 120. Restricted to: Community Colleges only. Restricted to RESP majors.
- RESP 124. Respiratory Therapy II Clinical** 3 cr. (9P)  
Supervised practice and application in a hospital setting. Requires a C or better to remain in program. Prerequisite(s): Admission to program, RESP 110, RESP 110L and RESP 112. Corequisite(s): RESP 120 and RESP 120L. Restricted to: Community Colleges only. Restricted to RESP majors.
- RESP 125. Respiratory Therapy Physics** 3 cr.  
Concepts of physics as they apply to the physiology of the lungs. Emphasis on laws pertaining to gas, gas flow, humidity, and the mechanics of the breathing process. Requires a C or better to remain in program. Prerequisite(s): Admission to program. Restricted to: Community Colleges only. Restricted to RESP majors.
- RESP 155. Respiratory Therapy Special Topics** 1-4 cr.  
Topics to be announced in the Schedule of Classes. May be repeated for a maximum of 10 credits. Consent of instructor required. Prerequisite(s): Admission to program. Restricted to: Community Colleges only. Restricted to RESP majors.
- RESP 210. Respiratory Therapy III** 2 cr.  
Introduction to adult, mechanical, neonatal ventilator theory and concepts of critical care medicine. Requires a C or better to remain in program. Prerequisite(s): Admission to program, and RESP 115, RESP 120, RESP 120L, and RESP 124. Corequisite(s): RESP 210L. Restricted to: Community Colleges only. Restricted to RESP majors.
- RESP 210 L. Respiratory Therapy III Lab** 2 cr.  
Advanced practice procedures using mechanical ventilation devices. Requires a C or better to remain in program. Prerequisite(s): Admission to program, and RESP 115, RESP 120, RESP 120 L, and RESP 124. Corequisite(s): RESP 210. Restricted to: Community Colleges only. Restricted to RESP majors.



- RESP 224. Respiratory Therapy IV Clinical 3 cr. (9P)  
Continuation of RESP 124. Emphasis on mechanical ventilators. Requires a C or better to remain in program. Prerequisite(s): Admission to program, and RESP 115, RESP 120, RESP 120 L, and RESP 124. Restricted to: Community Colleges only. Restricted to RESP majors.
- RESP 230. Respiratory Therapy V 3 cr.  
Continuation of RESP 215. Emphasis on special modalities. Requires a C or better to remain in program. Restricted to: Community Colleges only. Restricted to DA-RESP-AA majors.
- RESP 230 L. Respiratory Therapy V Lab 2 cr.  
Advanced practice and procedures of respiratory care. Requires a C or better to remain in program. Restricted to: Community Colleges only. Restricted to DA-RESP-AA majors.
- RESP 233. Respiratory Therapy Cardiopulmonary 2 cr.  
Concepts of physics as they apply to the physiology of the lung. Emphasis on laws pertaining to gas flow, humidity, and the mechanics of the breathing process. Requires a C or better to remain in program. Restricted to: Community Colleges only. Restricted to DA-RESP-AA majors.
- RESP 234. Respiratory Therapy V Clinical 3 cr.  
Continuation of RESP 214. Emphasis on special modalities. Restricted to: Community Colleges only. Restricted to DA-RESP-AA majors.
- RESP 240. Respiratory Therapy VI 3 cr.  
Advanced theory of hemodynamics, neonate, pediatric, and new specialties that apply to respiratory care. Requires a C or better to remain in program. Prerequisite(s): Admission to program, and RESP 230, RESP 230L, RESP 233 and RESP 234. Corequisite(s): RESP 240L. Restricted to: Community Colleges only. Restricted to RESP majors.
- RESP 240 L. Respiratory Therapy VI Lab 2 cr. (6P)  
Advanced laboratory practice and procedures. Requires a C or better to remain in program. Prerequisite(s): Admission to program, and RESP 230, RESP 230L, RESP 233 and RESP 234. Corequisite(s): RESP 240. Restricted to: Community Colleges only. Restricted to RESP majors.
- RESP 242. Pediatric Advanced Life Support (PALS) 1 cr.  
Etiology, diagnosis, clinical manifestations, and management of cardiopulmonary disorders related to respiratory care. Corequisite: RESP 230. Restricted to majors.
- RESP 243. Respiratory Therapy Neonatal Resuscitation 1 cr.  
Advanced practice of the neonatal resuscitation and certification. Prerequisite(s): Admission to program and RESP 230, RESP 230L, RESP 233, and RESP 234. Corequisite(s): RESP 240 and RESP 244. Restricted to: Community Colleges only. Restricted to RESP majors.
- RESP 244. Respiratory Therapy VI Clinical 3 cr. (9P)  
Clinical experience on special modalities. Requires a C or better to remain in program. Prerequisite(s): Admission to program, and RESP 230, RESP 230L, RESP 233 and RESP 234. Corequisite(s): RESP 240. Restricted to: Community Colleges only. Restricted to RESP majors.
- RESP 246. Respiratory Therapy Board Prep 1 cr.  
Comprehensive review of respiratory therapy topics. Students will take practice exams that cover the materials needed to be successful on the RRT, CRT and SAE exams as required by the National Board and Respiratory Care. Prerequisite: Admission to Program. Graded S/U.
- RESP 255. Respiratory Therapy Special Topics 1-4 cr.  
Specific subjects to be announced in the Schedule of Classes. May be repeated for a maximum of 4 credits. Consent of instructor required. Prerequisite(s): Admission to program. Restricted to: Community Colleges only. Restricted to RESP majors.
- RESP 298. Respiratory Therapy Independent Study 1-10 cr.  
Individual study for respiratory care majors. Chosen topics must have approval of program coordinator. May be repeated for a maximum of 10 credits. Restricted to majors. Prerequisite(s): RESP 110. Restricted to: Alamogordo campus, Carlsbad campus, Dona Ana campus, Grants campus.
- RGSC- RANGE SCIENCE**
- RGSC 150. Rangeland Science Profession 1 cr.  
Introduction to scientific disciplines and career opportunities in rangeland science and management.
- RGSC 294. Rangeland Resource Management 3 cr.  
Overview of arid and semi-arid ecosystems in the US and abroad, rangeland plant physiology, ecology of rangeland plant communities and ecosystems, sustainable management for multiple uses including grazing livestock production, wildlife habitat, recreation and ecosystem services, and economics of rangeland-based enterprises. Restricted to: Main campus only.
- RGSC 302V. Forestry and Society 3 cr.  
Global study of the development and use of forest resources for production of wood, fuel, fiber, and food products. Climatic, edaphic, cultural, and economic influences on forests of the world evaluated. Same as HORT 302V.
- RGSC 307. Rangeland Grasses 3 cr. (1+4P)  
Taxonomy of grasses; variations in grass spikelet structure and use of grass keys for identification.
- RGSC 316. Rangeland Plants 2 cr. (1+3P)  
Identification, classification, and economic importance of native and introduced rangeland plants.
- RGSC 317. Rangeland Communities 3 cr.  
Rangeland associations and communities, their plant species composition, and ecological factors affecting management of communities. Same as GEOG 317.
- RGSC 318. Watershed Management 3 cr. (2+2P)  
Management of rangeland and forest watersheds with emphasis on hydrologic cycle and land use effects on runoff and water quality.
- RGSC 325. Rangeland Restoration Ecology 3 cr.  
Principles and practices of vegetation management and ecological restoration. Course emphasizes problems associated with rangeland degradation, and implementation of rangeland restoration and improvements. Prerequisite(s): Sophomore standing or consent of instructor.
- RGSC 390. Internship 1-3 cr.  
Professional work experience under the joint supervision of the employer and a faculty member. A written report is required. No more than 3 credits toward a degree. Prerequisite: consent of instructor. Graded S/U.
- RGSC 402. Seminar 1 cr.  
Topics in range science. Oral and written reports. Prerequisite: senior standing.
- RGSC 406. Rangeland Team Competition 1 cr.  
Description and characteristics of range plants. May be repeated for a maximum of 4 credits.
- RGSC 440. Rangeland Resource Ecology 3 cr.  
Living and nonliving factors of the range environment, the life forms and role of range plants and animals on succession and interactions in range ecosystems. Prerequisite(s): BIOL 301.
- RGSC 440 L. Rangeland Resource Ecology Lab 1 cr. (2P)
- RGSC 448. Problems 1-4 cr.  
Individual investigation in a specific area of range science. Maximum of 4 credits per semester and a grand total of 6 credits.
- RGSC 452. Rangeland Analysis 4 cr. (2+4P)  
Analysis methods used to determine structure and function of rangelands and their applications to rangeland management and assessment. Prerequisites: RGSC 294 and A ST 311.
- RGSC 458. Livestock Behavior, Welfare and Handling 3 cr. (2+3P)  
Principles of animal behavior and evaluation of management practices on animal welfare in confined and rangeland livestock operations. Low stress livestock handling techniques. Design of livestock handling facilities. Prerequisite(s): RGSC 294 or ANSC 100. Crosslisted with: ANSC 458
- RGSC 460. Advanced Rangeland Management 4 cr. (3+3P)  
Rangeland survey methods; rangeland management plans; problems of rangeland administration; cooperation in rangeland improvement programs. Prerequisites: RGSC 294, RGSC 440, and RGSC 452.
- S WK- SOCIAL WORK**
- S WK 221G. Introduction to Social Welfare 3 cr.  
A broad overview of current social problems and the role of social agencies and community members in addressing these problems.
- S WK 251. Women s Issues in Social Work 3 cr.  
Examines gender-specific social problems and their identification and resolution through the use of social agencies and community resources. Community Colleges only.
- S WK 253. Case Management 3 cr.  
Introduction to case management for social- and human-services workers. Overview of typical duties and responsibilities of a case manager, including setting goals, performing assessments, writing progress notes, and linking clients with other resources in the community. Recommended for students considering a career in social work or human services. Prerequisites: PSY 201G and S WK 221G. Community Colleges only.
- S WK 300. Social Work Practice Skills 3 cr.  
Introduction to generalist social work practice. Interpersonal skills, values, and ethics required in the helping relationship. Taught in a small-group format. Corequisite: S WK 311. Restricted to S WK majors.



- S WK 301. Orientation to Field** 1 cr.  
This course will provide an orientation to social work field practicum requirements and the connection between classroom instruction and future practicum requirements. Corequisite(s): S WK 300. Restricted to S WK majors.
- S WK 302. Service Learning and the Field** 3 cr.  
This course introduces students to field work as an essential component of social work education. Students are required to provide a minimum of 40 hours of service to a human services agency. This course will focus on the connection between coursework, field work, the NASW Code of Ethics and skills needed to work with people. Prerequisite(s): SWK 300, SWK 301, SWK 309, SWK 311, SWK 331. Corequisite(s): SWK 313.
- S WK 309. Sociocultural Concepts** 3 cr.  
Theoretical and sociohistorical perspectives on racism, sexism, ageism, heterosexism, classism, ableism, and other forms of discrimination and oppression. Cultural diversity, strengths, and Southwest and border issues are examined.
- S WK 310. Human Behavior and Social Systems** 4 cr.  
Human growth and development over the life cycle, from conception through death. Study of individual's interrelationship with the major systems will be emphasized. Web-based course and part of CHSS major in Human and Community Service. Prerequisite: consent of instructor. Restricted to HCS majors.
- S WK 311. Human Behavior and the Social Environment I** 3 cr.  
Major theories of human behavior and the life span from conception to adolescence. Restricted to S WK majors.
- S WK 312. Human Behavior and the Social Environment II** 3 cr.  
Continuation of S WK 311. Major theories of human behavior and the life span from young adulthood through old age. Prerequisite(s): S WK 311. Restricted to S WK majors.
- S WK 313. Social Work Practice with Individuals** 3 cr.  
Generalist social work practice theory and skills in engagement, information gathering, assessments, planning, interventions, evaluation, and termination with individual client systems. Prerequisite: S WK 300. Restricted to S WK majors.
- S WK 331V. Introduction to Social Policy: History** 3 cr.  
Historical overview of the economic, political, and cultural impact on social welfare policy, institutions, and professions with international content.
- S WK 352. Social Welfare Policy: Legislation** 3 cr.  
Analysis of recent and proposed social welfare policy, in areas of poverty, family and child welfare, employment and other human service legislation. Prerequisite: majors or consent of instructor.
- S WK 400. Social Work Practice with Groups, Community, and Organizations** 3 cr.  
Generalist social work practice theory and skills in engagement, information gathering, assessment, planning, interventions, evaluation, and termination with multicultural groups, organizations, and community. Prerequisites: S WK 300, S WK 313, and S WK 314. Restricted to S WK majors.
- S WK 401. Field Experience I** 6 cr.  
Supervised professional practice in a community social service agency, providing experiential instruction and learning. 240 clock hours required. Seminar required. Graded: S/U. Prerequisite(s): S WK 300, S WK 311, S WK 312, S WK 313, S WK 314, S WK 352. Restricted to S WK majors.
- S WK 402. Field Experience II** 6 cr.  
Supervised professional practice in a community social service agency, providing experiential instruction and learning. 240 clock hours required. Seminar required. Graded: S/U. Prerequisite(s): S WK 401. Restricted to S WK majors.
- S WK 404. Integrative Field Seminar** 1 cr.  
Students will use the field experience as the backdrop for assessing their own progress toward entry level generalist social work practice; to integrate coursework and field experience and develop their professional foundation. Prerequisite(s): S WK 401, S WK 414, S WK 404, S WK 467. Corequisite(s): S WK 402, S WK 416, S WK 468. Restricted to S WK majors.
- S WK 414. Social Work Practice with Families** 3 cr.  
Generalist social work practice theory and skills in engagement, information gathering, assessments, planning, interventions, evaluation, and termination with multicultural family systems. Prerequisite(s): S WK 300. Restricted to S WK majors.
- S WK 415. Generalist Social Work Practice with Organizations and Communities** 3 cr.  
This course focuses on generalist social work values, knowledge and skills regarding practice with larger systems. Course content will include theories of community and organizational assessment and intervention. Strategies for advocacy and change, leadership for community and organizational change. Prerequisite(s): SWK 300, SWK 313. Corequisite(s): SWK 414, SWK 401, SWK 467.
- S WK 416. Generalist Social Work Practice with Groups** 3 cr.  
This course is designed to assist students to become effective in the practice of generalist intervention strategies with a variety of multicultural groups. Upon completion students will have knowledge, values and skills of generalist social work practice with small groups with an emphasis on cultural and human diversity; and be able to apply relevant theories that underlie generalist social work practice. Prerequisite(s): SWK 300, SWK 313, SWK 414, SWK 415. Corequisite(s): SWK 402, SWK 404, SWK 468.
- S WK 420. Social Welfare Policy: Administration** 3 cr.  
Application of economic, political and cultural theories that explain human behavior in organizations. Focus: effective administration and management of agencies responsible for implementing social welfare policy. Prerequisite(s): S WK 313, S WK 314, S WK 352, S WK 400, and S WK 401. Corequisite(s): S WK 402.
- S WK 443. Family and Child Welfare Practice** 3 cr.  
Current issues and interventions in child protection, foster care, family preservation and support, family reunification, adoption and permanency planning. Cannot receive credit for SWK 443 and MSW 543.
- S WK 449. Independent Study** 1-6 cr.  
Individual studies directed by consenting faculty with the prior approval of the department head. Prerequisite: majors or consent of instructor.
- S WK 463. Social Work Practice with Hispanic Families** 3 cr.  
Theory and skills relating to social work practice with Hispanic families. Emphasis on strengthening and empowering Hispanic families to perform their caregiving roles in their own environment. Prerequisite: S WK 300, S WK 313, S WK 314 and S WK 400.
- S WK 465. Practice with the Elderly** 3 cr.  
Concepts and skills needed for effective practice with older adults, their families, and others in their support systems. Attention to subgroups on an older population, including persons of color, health-impaired individuals, grandparent caregivers, and elderly gay men and women. Taught with MSW 565. Cannot receive credit for S WK 465 and MSW 565. Prerequisite(s): S WK 300, S WK 313, S WK 314 and S WK 400.
- S WK 467. Social Work Research I** 3 cr.  
Development of knowledge and skills needed to build practice knowledge, evaluate service delivery, and be effective consumers of research knowledge. The first of a two-course sequence that covers research methods, history of research, ethics, problem formulation, research design, measurement, and instrumentation. Restricted to S WK majors.
- S WK 468. Social Work Research II** 3 cr.  
Development of knowledge and skills needed to build practice knowledge, evaluate service delivery, and be effective consumers of research knowledge. The second of a two-course sequence that covers research literature, data collection, and data analysis. Prerequisite: S WK 467. Restricted to S WK majors.
- S WK 490. Family and Child Welfare Policy** 3 cr.  
Historical review and evolution of child welfare policies, initiatives and factors that influence child welfare service. Child welfare policies and services specific to the state of New Mexico are infused throughout the course. Taught with MSW 590. Cannot receive credit for S WK 490 and MSW 590. Prerequisite(s): S WK 313, S WK 314 and S WK 400.
- S WK 497. Special Topics** 1-3 cr.  
Specific subjects to be announced in the Schedule of Classes. May be used as a mandatory practice elective. Prerequisite: junior or above standing, majors or consent of instructor. May be repeated for unlimited credit under different subtitles.
- SMET- SCIENCES, MATHEMATICS, ENGINEERING AND TECHNOLOGY**
- SMET 101. Introduction to Science, Mathematics, Engineering, and Technology** 3 cr.  
An introductory course for science, mathematics, engineering, or technology students emphasizing introduction to the disciplines, development of critical thinking and academic success skills for the technical disciplines, as well as degree planning for the major. Consent of instructor required.

SMET 102. Introduction to Engineering Design. 1 cr.  
Fundamental concepts of engineering design developed through analysis of case studies and hands-on design projects. Consent of instructor required.

SMET 201. Research for Visiting Community College Students 1 cr.  
Research experience for visiting community college students. Consent of instructor required. Restricted to: Main campus only.

SMET 301. Undergraduate Research Assistantship .5 cr.  
Undergraduate research experience in science, technology, engineering, and mathematics. Consent of instructor required. Graded: S/U.

### SOC- SOCIOLOGY

SOC 101G. Introductory Sociology 3 cr.  
Introduction to social theory, research, methods of analysis, contemporary issues in historical and cross-cultural contexts. Covers groups, deviance, inequality, family, gender, social change, and collective behavior.

SOC 201G. Contemporary Social Problems 3 cr.  
Introduction to the fundamentals of social analysis through the analysis of contemporary American social problems. Emphasis on methods of analysis and cross-national comparisons showing that the social problems studied are common to all societies. Covers racism, violence, poverty, crime, health care, and substance abuse.

SOC 248. Special Topics 1-3 cr.  
Specific subjects to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits.

SOC 258. Current Issues in Marriage and Family 3 cr.  
Examination of contemporary American family life, including courtship, marriage, divorce, and child rearing. Community Colleges only.

SOC 262. Issues in Death and Dying 3 cr.  
Major personal and social issues related to the process of dying in our culture. Community Colleges only.

SOC 263. Human Sexuality 3 cr.  
Introduction to cultural and personal aspects of human intimacy, sexuality and the life cycle, sexual variation, and sexually transmitted diseases. Community Colleges only.

SOC 269. Sexualities and Society 3 cr.  
Examines various sexualities from a sociological perspective. Topics include sexual identity, intimate relationships, sexual desire, sexual behavior, the sex industry, and the politics of sexuality. Discussion of selected topics is grounded in both macro and micro sociological viewpoints. Restricted to: Main campus only.

SOC 270. Sociology of the Chicano Community I 3 cr.  
Introductory overview of the Chicano/Mexican-American experience in the U.S., with an emphasis on the Southwest. Socioeconomic issues affecting Chicano culture and behavior. Topics include family, la Chicana, mental health, education and language policy, art and literature.

SOC 273. Sex and Gender 3 cr.  
Analysis of changes, behaviors, and stereotypes of women and men in contemporary Western societies. Same as WS 273.

SOC 330V. Introduction to Religious Studies 3 cr.  
Provides an overview of old and new methods and theories for the study of religion. Exposure to the ways groups of people in diverse cultural systems construct and change their religious traditions to serve practical and meaningful ends. Same as ANTH 330V and HIST 330V.

SOC 335. History of Christianity 3 cr.  
Emphasizes perceptions about Jesus, the changing nature and role of the Bible, especially the new testament, interactions of religion and government, issues of faith and culture, and development of modern Christianity. Same as ANTH 335 and HIST 335.

SOC 336V. Sociology of Pop Culture 3 cr.  
This course will provide students with a sociological look at creation, distribution, and effects of popular culture that have shaped, preserved, and conveyed distorted images of social class, race, gender and history to unwary consumers.

SOC 342. Sociology of New Mexico 3 cr.  
Analysis of New Mexico social structure in comparative-historical perspective; cultures and population groups; inter-group relations; economy and restructuring; politics and power; border region; globalization in New Mexico; current topics. Prerequisite: SOC 101.

SOC 343. Sociological Studies of Human Time 3 cr.  
Introductory course on how humans use time and how time affects social life. Topics include time in different cultures, time commodities, shift work, awareness of time, future orientation, times of human crisis and 24 hour human activity.

SOC 348. Special Topics 3 cr.  
Specific subjects to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits.

SOC 350. Sociological Foundations 3 cr.  
Focus is on becoming a sociologist including career opportunities, thinking critically about society, and conducting sociological inquiry. Emphasis is on identifying and using resources available to sociologists, communication skills for sociologists and acquisition of basic analytic techniques. Prerequisite(s): SOC 101G or consent of instructor. Restricted to BA Sociology majors.

SOC 351. Sociological Theory 3 cr.  
Analysis of the main historical themes underlying contemporary sociological theory. Prerequisite(s): SOC 101G and SOC 350. Restricted to BA Sociology majors.

SOC 352. Social Research: Methods 3 cr.  
An introduction to research design and data collection strategies commonly employed in the social sciences. Topics include experiments, survey research and various other quantitative and qualitative methods. Prerequisite(s): SOC 101G and SOC 350. Restricted to BA Sociology majors.

SOC 353. Sociological Research: Analysis 3 cr.  
Elementary data analysis class emphasizing descriptive and inferential statistical techniques commonly employed in the social sciences. Topics range from one variable analysis through regression and correlation analysis of two variables. Prerequisite(s): SOC 101G and SOC 350. Restricted to BA Sociology majors.

SOC 355. Contemporary Sexualities 3 cr.  
Provides a forum for discussion and debate of contemporary sexualities within a sociological context. Topics include the relationship between historical context and sexualities, constructing sexualities, sexual political movements, sexual objectification and power and the intersection of race, class and gender with sexualities

SOC 357. Gender and Society 3 cr.  
Overview of issues related to gender, including how gender is constructed and reproduced in our society. Gender is examined from social psychological and institutional perspectives. Same as WS 357.

SOC 359. Sociology of the Family 3 cr.  
Family patterns, dynamics, and processes in North American and other contemporary families. Emphasis on diversity.

SOC 360V. Introduction to Population Studies 3 cr.  
Determinants and consequences of changes in fertility, mortality and migration patterns. Introduction to techniques of demographic analysis. Focus on U.S. and world population issues and their relation to social, cultural, and economic systems.

SOC 361V. Social Issues in the Rural Americas 3 cr.  
Same as ANTH 361V.

SOC 362. Urban Society in a Global World: Problems, Prospects, and Promises 3 cr.  
Identification and analysis of the causes and consequences of social issues in urban environments including poverty, crime, terrorism, urban social policy, suburban flight, disinvestment, and deindustrialization. Special emphasis on global forces affecting global urban environments around the world.

SOC 365. Environmental Sociology 3 cr.  
Societal responses to environmental problems including social adjustments to natural and technological hazards, socio-cultural aspects of technological risk and impact assessment, and emergence of environmental social movements.

SOC 366. Society and Technology 3 cr.  
Examines the social dynamics shaping technological form and utilization as well as the impacts of technology and socio-technical systems upon society. Topics include: the historical role of technology in socio-cultural evolution, technology and contemporary social change, technological risks and risk management, technology and politics, and the contradictory effects of technology in contributing to and alleviating environmental degradation.

SOC 369. The Challenge of Sustainable Development: Achievable or Not? 3 cr.  
This course will examine the various controversies surrounding sustainable development based on the three components of sustainable development: social equity, environment, and economics. Efforts to achieve sustainable development and the issues involved will be examined at both the local, community level up to the global level.

SOC 371. Race and Ethnic Relations 3 cr.  
Dynamics of racial prejudice and patterns of racial and ethnic interaction in the United States.

- SOC 372. Sociology of Health and Medicine 3 cr.  
Analysis of issues related to health, illness, and health related services and professions; the role of sociology in medicine.
- SOC 373. Aging and Society 3 cr.  
Myths and realities of growing older, including theories and research on roles and image, retirement, health, social activism, quality of life, and death and dying. Same as HL S 373.
- SOC 374V. Comparative Family Systems 3 cr.  
A comparative analysis of family forms and characteristics in various societies. An examination of the diversity of family practices among ethnic and class groups in the United States. Same as WS 374G.
- SOC 375. Social Inequality 3 cr.  
Analysis of the social distinctions arising from sex, age, occupation, and ethnicity. Emphasis on indicators of social class and patterns of social mobility.
- SOC 376V. Social Change 3 cr.  
Explanations of autonomous and directed social change as occurring at the individual, organizational, societal, and international levels. Case studies from around the world.
- SOC 381. Individual and Society 3 cr.  
Ways people influence each other and the mutual interaction of the individual and society. Topics include attitudes, attitude change, conformity, liking and friendship patterns.
- SOC 390. Sociology of Childhood 3 cr.  
This course examines theories, methods, and empirical research in several areas of the sociology of childhood. Major themes are: (1) how social structure constrains children's lives, (2) how children negotiate, share, and create culture, and (3) how children's experiences vary within and across societies.
- SOC 391. Crime and Society 3 cr.  
Analysis of crime at the interpersonal, organizational, and social structure levels in society. Exploration of contemporary images of crime in mass media. Examination of connections between race, class, gender, and crime in U.S. society.
- SOC 392. Juvenile Delinquency 3 cr.  
Nature, extent, and causes of juvenile delinquency; juvenile justice; modern methods of treatment; programs of prevention.
- SOC 393. Youth and Society 3 cr.  
Comparative historical analysis of social, economic and cultural forces affecting young people. Emphasis on organizational and institutional effects on the well being of children and young adults.
- SOC 394V. Sports and Society: A Global Perspective 3 cr.  
A critical examination of sports in a global context, emphasizing the social and cultural factors that shape the world of sports and the consequences of sports for societies. Course examines issues of social inequality, violence, media and corporate influence, religion and sports, and the student-athlete experience.
- SOC 395. Sociology of Media and Violence 3 cr.  
This course will provide a framework for understanding how violence is represented and consumed with emphasis on understanding the impact on children and adolescents.
- SOC 401. Introduction to Sociological Practice 3 cr.  
The application of sociological theory and research method. May be taught as service learning course. Prerequisite(s): SOC 101G, SOC 350, senior standing or consent of instructor. Restricted to BA Sociology majors.
- SOC 430. Social Movement Theory 3 cr.  
Overview of key theories in past and present social movement research. Includes a focus on rational or spontaneous choice theories, resource mobilization, and new social movement theories. Theoretical perspectives focus on analyses of case studies including women's movement, civil rights, and environmental movements.
- SOC 448. Special Topics 3 cr.  
Specific subjects to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits.
- SOC 449. Directed Readings 1-3 cr.  
Individual readings or research for either majors or nonmajors. Prerequisite: consent of instructor. May be repeated for a maximum of 6 credits.
- SOC 449 H. Directed Readings, Honors 1-3 cr.  
Same as SOC 449. Additional work to be arranged. Prerequisite: consent of instructor. May be repeated for a maximum of 6 credits.
- SOC 450. Qualitative Research Methods 3 cr.  
This course will provide an in-depth examination of qualitative research methods, including participant observation techniques, interviewing, and content analysis. Prerequisites: SOC 352, COMM 305, GOVT 300, C J 300, PSY 310, PSY 355 or consent of instructor.
- SOC 451. Advanced Quantitative Techniques 3 cr.  
Advanced methods of sociological analysis are examined in detail. Prerequisite(s): SOC 353 or equivalent or permission of instructor. Restricted to Sociology BA or MA or permission of instructor majors.
- SOC 452. Advanced Social Theory 3 cr.  
Analysis of classical and contemporary theoretical perspectives within the discipline. Prerequisite(s): SOC 351. Restricted to BA Sociology MA Sociology majors.
- SOC 453. Advanced Research Methods 3 cr.  
Exploration of research methods, issues, and practical applications. Builds upon foundation provided by SOC 352 or other junior-level social research courses. Prerequisite(s): One of the following: SOC 352, COMM 305, GOVT 300, C J 300, PSY 310, PSY 355 or consent of instructor. Restricted to BA - Sociology MA - Sociology majors.
- SOC 455. Advanced Social Research: Evaluation 3 cr.  
Logic, design and ethics of evaluations including theory driven and multi-level models. Emphasis on individual, group and community level needs assessment, process and activities assessment and outcomes assessment including social impact assessment. Data collection techniques will include survey questionnaire construction, interviewing, focus groups and case studies. Measures of efficiency and effectiveness will be examined. Prerequisite: Research Methods Course.
- SOC 456. Survey Research Methods 3 cr.  
This course will provide an in-depth examination of survey research techniques, including telephone surveys, mail survey, internet surveys, and multi-modal techniques. The various aspects of questionnaire construction and administration of surveys will be covered. Prerequisites: COMM 305, GOVT 300, C J 300, PSY 355 or consent of instructor.
- SOC 457. Gender, Science, and Technology 3 cr.  
How gender, science and technology are interrelated social constructions. Science and technology are examined as social institutions. Explanations for different rates of participation based on race, class and gender are explored. Same as: WS 467.
- SOC 458V. Comparative Global Family Systems 3 cr.  
The study of families around the world. The comparison will include how capitalism and power differentials have affected the course of family history, gender relations, and family life today.
- SOC 459. Advanced Issues in Sex and Gender 3 cr.  
Comprehensive examination of current gender identity and gender stratification issues. Same as W S 459.
- SOC 460. Sociology of Religion 3 cr.  
Examination of religion in its social context to understand the intricate relations of religion, culture and U.S. society. Recommended preparatory courses: SOC 101G, SOC 273, SOC 376, ANTH 125G.
- SOC 461. Population Trends and Analysis 3 cr.  
Overview of past, present, and future population phenomena and introduction to techniques of demographic analysis.
- SOC 465V. Environmental Sociology 3 cr.  
Advanced examination of societal responses to environmental problems including social adjustments to natural and technological hazards, socio-cultural aspects of technological risk and impact assessment, and emergence of environmental social movements.
- SOC 466. Society and Technology 3 cr.  
Examines the social dynamics shaping technological form and utilization as well as the impacts of technology and socio-technical systems upon society. Topics include: the historical role of technology in socio-cultural evolution, technology and contemporary social change, technological risks and risk management, technology and politics, and the contradictory effects of technology in contributing to and alleviating environmental degradation.
- SOC 467. Internship 1-6 cr.
- SOC 468. Global Sexualities 3 cr.  
Generates a global context to focus on sexual identity and orientation, sexual identity politics, romantic relationships, patterns of sexual behavior, sexual regulation and the impact of different cultures on individual sexualities. Taught with SOC 568. Crosslisted with: W S 468



- SOC 470. Sociology of Latinos/as in the United States 3 cr.  
In-depth examination and comparative analysis of political and economic issues affecting Latino/a culture and behavior. Includes the Chicano/a and larger Latino/a movements, the border, immigration, language policies, education, religion, labor, and Latina women's issues. Recommended preparatory courses: SOC 101G, SOC 270, SOC 371, or HIST 367.
- SOC 471. Advanced Race and Ethnic Relations 3 cr.  
In-depth analysis of the dynamics of prejudice, discrimination, and patterns of intergroup interaction in the U.S.
- SOC 472. Sociology of Medical Ethics 3 cr.  
Focus on ethics as applied in health care from a sociological perspective. Includes cultural issues and the decision making process, with individual and social implications. Same as SOC 572.
- SOC 474. Sociology of Organizations 3 cr.  
Sociological models of formal organizations relevant to business, education, government, healthcare, military, and religion. Focus on internal organizational structure and dynamics plus the reciprocal relationship between organizations and their operating environment.
- SOC 475. Advanced Social Stratification 3 cr.  
Theories of stratification and current methods of stratification research. Focus on differences by ethnicity, race, class, and gender.
- SOC 476. Social Institutions in Appalachia 3 cr.  
Survey of social issues of Appalachia including the emergence and perpetuation of stereotypical images, the impact of the coal industry on the social environment, and consideration of religious, political, and social policy aspects.
- SOC 477. Sociology of Education 3 cr.  
Socio-political and economic factors that shape the structure and operation of educational institutions in modern complex societies. Socio-historical development of the school as a microcosm of society, with examples from American and other school systems.
- SOC 478. Sociology of Development and the World System 3 cr.  
A sociological approach to development and global system. Theories of development and underdevelopment; world poverty/inequality; Latin America, Africa, and Asia in comparative perspectives; transnational borders/U.S.-Mexico border; current topics. Same as GOVT 477.
- SOC 479. Sociology Perspectives on the U.S.-Mexico Border 3 cr.  
Theoretical perspectives and current research on the U.S.-Mexico border region, including topics such as migration, identity, health, gender, and environment.
- SOC 480. Diversity in Alternative Families 3 cr.  
Cross-cultural examination of diversity among and within families: analysis of family diversity includes consideration of the theoretical frameworks, ideological commitments, personal experiences, and methodological approaches to examine family life.
- SOC 481. Social Deviance 3 cr.  
Theoretical approaches to the study of social deviance with emphasis on critical theories. Exploration of forms of deviance in society. Examination of social construction of deviance within mass media and systems of social control.
- SOC 482. Advanced Individual and Society 3 cr.  
Examines reciprocal relationship between individual and society. Topics include socialization, social influence and persuasion, group structure and performance, altruism, aggression, interpersonal attraction, group cohesion and conformity, and inter-group conflict.
- SOC 483. Symbolic Interaction 3 cr.  
Examination of the interaction of self and the social order including society as process, the negotiation of social order, identity as a social product, role taking and the situated self, the social construction of reality with an emphasis on phenomenology and ethnomethodology.
- SOC 489. Globalization 3 cr.  
Analysis of the globalization process. Covers theories of globalization, the global economy, political globalization, global culture, transnational social movements, transnational migration and world labor market, global cities, and local-global linkages. Same as GOVT 469.
- SOC 491. Criminological Theory 3 cr.  
Schools of thought, contrasting approaches, and contemporary efforts in theory construction relevant to adult and juvenile offenders.
- SOC 496. Internship 1-6 cr.  
Supervised participation in an appropriate community setting. Prerequisite: consent of instructor. May be repeated for a maximum of 9 credits. Same as SOC 596.
- SOIL- SOIL**
- SOIL 200. Special Topics 1-4 cr.  
Specific subjects and credits to be announced in the Schedule of Classes. Maximum of 4 credits per semester. No more than 9 credits toward a degree.
- SOIL 252. Soils 3 cr.  
Origin, classification, morphology, and physical, chemical, and biological properties of soils. Prerequisite: CHEM 111G and CHEM 112G.
- SOIL 252 L. Soils Laboratory 1 cr.  
Morphological, chemical, physical and biological properties of soil in the laboratory and field. Corequisite: SOIL 252.
- SOIL 257. Introduction to Weather Science 4 cr. (3+3P)  
Introduction to Earth's atmosphere and the dynamic world of weather as it happens. Working with current meteorological data delivered via the Internet and coordinated with learning investigations keyed to the current weather; and via study of select archives. Consent of instructor required. Crosslisted with: GEOG 257 and AGRO 257
- SOIL 300. Special Topics 1-4 cr.  
Specific subjects and credits announced in the Schedule of Classes. Maximum of 4 credits per semester. No more than 9 credits toward a degree.
- SOIL 312. Soil Management and Fertility 3 cr.  
Management, conservation, and fertility of soils; physical conditions affecting growth, nutrition, and plant production. Prerequisite: SOIL 252. Corequisite: SOIL 312L.
- SOIL 312 L. Soil Management and Fertility Lab 1 cr.  
Hands-on experience. Includes field trips, videos, calculations, visiting lecturers and other lab activities as possible. Prerequisite: SOIL 252. Corequisite: SOIL 312.
- SOIL 350. Soils and Land Use 3 cr. (2+2P)  
Relationship of soils to the limitations and potentials of land use. Emphasis on soil interpretations and soils as a resource in urban, rural, and recreational development. Same as PLAN 350.
- SOIL 357. Climatology 3 cr.  
Elements and controls of climate. Energy and hydrologic cycles, general circulation, climate classification, distribution of climate types, microscale effects, applications. Prerequisites: MATH 120. Same as AGRO/GEOG 357.
- SOIL 370. Environmental Soil Science 3 cr.  
Continuation of SOIL 252 that emphasizes soil properties and processes that directly relate to environmental pollution problems. Prerequisite: SOIL 252. Same as E S 370.
- SOIL 391. Internship 1-6 cr.  
Professional work experience under the joint supervision of the employer and a faculty member. A written report is required. No more than 6 credits toward a degree. Consent of instructor required. Graded: S/U. Crosslisted with: HORT 391 and AGRO 391
- SOIL 424. Soil Chemistry 3 cr.  
Basic elements of soil chemistry including clay mineralogy, cation and anion exchange and the chemistry of problem (acid, saline and flooded) soils. Credit not given for both SOIL 424 and SOIL 479. Prerequisites: SOIL 252L or GEOL 360, or three semesters of chemistry. Same as CHEM 424, GEOL 424.
- SOIL 447. Seminar 1 cr.  
Organization, preparation, and presentation of current topics in agronomy, horticulture, and soil science. Same as AGRO/HORT 447.
- SOIL 449. Special Problems 1-3 cr.  
Research problem, experience training, or other special study approved by a faculty advisor. Maximum of 3 credits per semester and a grand total of 6 credits.
- SOIL 450. Special Topics 1-4 cr.  
Specific subjects to be announced in the Schedule of Classes. Maximum of 4 credits per semester and a total of 9 credits towards a degree.
- SOIL 456. Irrigation and Drainage 3 cr. (2+3P)  
Principles and practices required for irrigation to exist as a permanent economy. Equipment and methods for measurement and control of water.
- SOIL 472. Soil Morphology and Classification 4 cr. (2+2P)  
Terminology used to describe soils. Soil classification systems of the world with emphasis on systems used in the United States. Theory of classification and taxonomy as applied to soils. Prerequisite: SOIL 252. Same as GEOG 472.



- SOIL 476. Soil Microbiology 3 cr.  
Nature and physiology of soil microorganisms, how they affect plant growth and recycle nutrients. Land farming, bioremediation and other environmental problems as influenced by soil microorganisms. SOIL 252 and BIOL 311 recommended. Same as BIOL 476.
- SOIL 476 L. Soil Microbiology Laboratory 1 cr. (3P)  
Enumeration of soil microorganisms, their activities, and transformations they mediate. Prerequisites: SOIL 476 or concurrent enrollment. Same as BIOL 476L.
- SOIL 477. Environmental Soil Physics 3 cr.  
A description of the physical characteristics of porous media including soil. Examination of processes describing the transport of water, chemicals, heat and gases through porous media with application to environmental quality, waste management, and crop production.
- SOIL 477 L. Environmental Soil Physics Laboratory 1 cr.  
Concurrent enrollment with SOIL 477 recommended. Hands on experience with techniques for characterizing soil physical properties such as particle size distribution, bulk density, water retention, hydraulic conductivity and solute transport. Demonstrations of field and laboratory techniques for measuring moisture content, soil water potential, gas/air flow and thermal conductivity. Prerequisite: SOIL 252.
- SOIL 479. Environmental Soil Chemistry 3 cr.  
Basic elements of soil chemistry including discussion of clay mineralogy, cation and anion exchange and the chemistry of problem (acid, saline and flooded) soils. Credit not given for both SOIL 424 and SOIL 479. Prerequisites: SOIL 252L or GEOL 360, or three semesters of chemistry. Same as GEOL 479.
- SP M- SPORTS MEDICINE**
- SP M 190. Introduction to Athletic Training 3 cr.  
Introduction to the principles of athletic training.
- SP M 191. Medical Terminology for Athletic Training 3 cr.  
Study of the structure of medical language with emphasis on athletic training-related terminology. To include analysis and interpretation of medical documentation.
- SP M 195. Introduction to Sport Management 3 cr.  
Designed for Kinesiology majors who are in the business track, the course introduces students to career opportunities in sport management, and introduces some basic business concepts.
- SP M 250. Sport Safety 2 cr.  
Introduction to sports safety. Includes first aid, CPR (Adult, Child, Infant, and AED Training) and application to various sports settings.
- SP M 271. Anatomy & Physiology I 3 cr.  
Detailed study of the structure and function of the human musculoskeletal, cardiovascular, respiratory, and peripheral nervous systems. Designed specifically for students interested in allied health professions.
- SP M 271 L. Anatomy and Physiology Laboratory 1 cr.  
Compliment to SP M 271. Students will engage in activities designed to enhance appreciation of the anatomical structures related to the content areas for SP M 271.
- SP M 272. Clinical Practicum I 3 cr.  
Introduction to the clinical aspects of the athletic training education program. Must maintain at least 2.5 GPA. Consent of instructor required. Pre/Corequisite(s): SP M 190, SP M 191. Restricted to: Main campus only. Restricted to SP M majors.
- SP M 273. Clinical Practicum II 3 cr.  
Clinical experience in an athletic training setting. Assessment of Athletic Training Education Program clinical proficiencies as described by the National Athletic Trainers' Association Education Council. Requires acceptance into the Athletic Training Education Program. Consent of instructor required. Prerequisite(s): SPM 190, SPM 191, SPM 272, Math 121 or 190, ENGR 111G, BIOL 111L or 211L. Restricted to: Main campus only. Restricted to SP M majors.
- SP M 303. Health and Exercise Psychology 3 cr.  
The course examines the reciprocal relationship among physical activity, exercise behavior, and psychological determinants associated with adopting and maintaining an exercise program. Topics include theories of behavioral change, exercise psychology interventions, the benefits/pitfalls of exercise, and psychological factors influencing patient rehabilitation. Prerequisite(s): GPA of 2.5.
- SP M 304. Psychology of Sport 3 cr.  
Development of coaching techniques to enhance sport performance based on understanding and use of psychological principles. Prerequisite(s): GPA of 2.5.
- SP M 305. Biomechanics 3 cr. (2+2P)  
The application of mechanical concepts in understanding, interpreting, and analyzing human movement. Prerequisite(s): SP M 271 a GPA of 2.5.
- SP M 308. Exercise Physiology 3 cr. (2+2P)  
Basic physiological principles as they apply to exercise and fitness programs. Laboratory experiences included. Prerequisite(s): SPM 271 or PEP 208.GPA of 2.4.
- SP M 309. Anatomical Kinesiology 3 cr.  
Overview of basic human body structures and functions appropriate for beginning students in physical education. Fundamental concepts concerning the interaction of biological and mechanical aspects of the musculoskeletal and neuromuscular structures. Emphasis on practical application to the study and teaching of skilled human movement. Prerequisite(s): SP M 271.
- SP M 310. Orthopedic Examination, Evaluation and Diagnosis of Lower Extremity Injuries 3 cr.  
Examines normal human anatomy, mechanisms of athletic injury, and deviation from normal anatomy following athletic injury. Must maintain at least 2.5 GPA. Consent of instructor required. Prerequisite(s): SP M 271, 271L, 273, or consent of instructor. Restricted to SP M majors.
- SP M 330. Exercise Prescription 4 cr.  
This combined lecture and lab class introduces students to the scientific basis for and principles of exercise testing and prescription. The focus is on basic approaches to exercise testing and prescription for healthy adults, while application to some special populations with chronic disease will be discussed. Prerequisite(s): SP M 271 and SP M 308 or consent of instructor.
- SP M 341. Motor Development 3 cr.  
Covers development of motor skills from infancy through maturity. Focus on the principles of motor development, early motor behavior, stage theory, and assessment. Field experiences will augment lecture and readings.
- SP M 342. Motor Learning 3 cr.  
An examination of the theoretical foundations and related literature that underline the learning, performing, and retention of motor skills with implications for effective teaching and coaching. Prerequisite(s): GPA of 2.3.
- SP M 371. Anatomy and Physiology II & Lab 4 cr.  
Detailed study of the structure and function of the human endocrine, immune, digestive, reproductive, integumentary, central nervous and renal systems. Designed specifically for students interested in allied health professions. Prerequisite(s): SP M 271 or consent of instructor. GPA of 2.5.
- SP M 372. Clinical Practicum III 4 cr.  
Clinical experience in an athletic training setting. Assessment of Athletic Training Education Program clinical proficiencies as described by the National Athletic Trainers' Association Education Council. Consent of instructor required. Prerequisite(s): SP M 271, SP M 271L, SP M 273. Restricted to SP M majors.
- SP M 373. Clinical Practicum IV 4 cr.  
Clinical experience in an athletic training setting. Assessment of Athletic Training Education Program clinical proficiencies as described by the National Athletic Trainers' Association Education Council. Consent of instructor required. Prerequisite(s): SP M 310, SP M 372. Restricted to SP M majors.
- SP M 375. Therapeutic Exercise 3 cr.  
An introduction to principles of rehabilitation exercises for the physically active population. Consent of instructor required. Prerequisite(s): SP M 310, SP M 372. Restricted to SP M majors.
- SP M 395. Sport Management II 3 cr.  
Designed for Kinesiology majors who are in the business track, the course builds on foundational knowledge and skills developed in earlier coursework by providing a more applied setting for the development and implementation of business plans as they relate to careers in sport management. Prerequisite(s): P E 275; 6 hours towards business minor.
- SP M 410. Orthopedic Examination, Evaluation and Diagnosis of Upper Extremity Injuries 3 cr.  
Clinical assessment of students' ability to evaluate injuries and illnesses of the physically active person. Consent of instructor required. Prerequisite(s): SP M 310, SP M 372. Must maintain at least 2.5 GPA. Restricted to SP M majors.
- SP M 412. Inferential Statistics in Sport and Exercise Science 3 cr.  
An upper division undergraduate course designed to teach students how to use and interpret inferential statistics using the scientific method. An understanding of sport and exercise science theory is prerequisite for students wishing to enroll in this course. Consent of instructor required. Prerequisite(s): GPA of 2.5.

- SP M 413. Statistical Application in Sports and Exercise Science 3 cr.  
An introduction to descriptive statistics and the interpretation of data in the solution of problems in sport and exercise related research. Prerequisite(s): Junior or senior standing.
- SP M 415. Therapeutic Modalities 4 cr. (3+2P)  
The physiological effects, indications, contraindications, dosage, and maintenance of therapeutic modalities related to the treatment of athletic or activity-related injuries. Consent of instructor required. Prerequisite(s): SP M 373, SP M 375, SP M 410. Restricted to SP M majors.
- SP M 420. Orthopedic Examination, Evaluation and Diagnosis of Core, Spine and Head Injuries 3 cr.  
Advanced clinical assessment techniques and applications. Must maintain at least a 2.5 GPA. Consent of instructor required. Prerequisite(s): SP M 373, SP M 375, SP M 410. Restricted to SP M majors.
- SP M 422. Clinical Practicum V 4 cr.  
Clinical experience in the collegiate athletic training setting, and general medical clinics. Assessment of Athletic Training Education Program clinical proficiencies as described by the National Athletic Trainers' Association Education Council. Consent of instructor required. Prerequisite(s): SP M 373, SP M 375, SP M 410. Restricted to SP M majors.
- SP M 423. Clinical Practicum VI 4 cr.  
Clinical experience in the collegiate athletic training setting. Assessment of Athletic Training Education Program clinical proficiencies as described by the National Athletic Trainers' Association Education Council. Consent of instructor required. Prerequisite(s): SP M 415, SP M 422. Restricted to SP M majors.
- SP M 424. Clinical Practicum VII 4 cr.  
Clinical experience in the collegiate athletic training setting. Assessment of Athletic Training Education Program clinical proficiencies as described by the National Athletic Trainers' Association Education Council. Consent of instructor required. Prerequisite(s): SP M 411, SP M 423, SP M 425. Restricted to SP M majors.
- SP M 425. Management Strategies in Athletic Training 2 cr.  
An introduction to management, leadership, financial strategies, professional development and legal issues related to the athletic training setting. Consent of instructor required. Prerequisite(s): SP M 415, SP M 422. Restricted to SP M majors.
- SP M 445. Internship 6-12 cr.  
A full-time internship in an approved wellness, fitness, athletic or recreation program with experience in all phases of management and operation. Field instructor supervision. This internship may require relocation to a site outside of the Las Cruces area. Consent of instructor required. Graded: S/U. Prerequisite(s): Senior standing, GPA of 2.5, completion of all major courses. Restricted to: Main campus only.
- SP M 451. Advanced Exercise Physiology 3 cr.  
Detailed study of the integrated response of neuromuscular, cardiovascular, and respiratory systems to acute and chronic exercise, nutrition, and environmental conditions with a strong emphasis on laboratory experiences. Prerequisite(s): SP M 271 and SP M 308 or consent of instructor. GPA of 2.5.
- SP M 456. Exercise for Special Populations 3 cr.  
Fundamentals of kinesiology adapted for adults with various diseases and disabilities. Focus will be on the application of exercise assessment and prescription for selected conditions. Prerequisite(s): SPM 308 and SPM 330 or SPM 460. GPA of 2.5.
- SP M 458. Physical Dimensions of Aging 3 cr.  
This course introduces students to physical, physiological, social, mental, and emotional aspects of human aging. Age-related changes in human function are discussed the context of applied healthcare settings, and the implications for appropriate physical activity and functional independence. Prerequisite(s): SP M 308. GPA of 2.5.
- SP M 460. Principles of Strength and Conditioning 3 cr.  
Application of research, theory, and methods of high-intensity, resistive overload training. Performance-specific topics include management, nutrition. Prerequisite(s): SPM 308. GPA of 2.5.
- SP M 460 L. Principles of Strength and Conditioning Laboratory 1 cr. (2P)  
An applied examination of the theory, principles, rules and regulations associated with various strength and conditioning exercises to include but not limited to Olympic lifting, powerlifting, bodybuilding, plyometrics, speed, agility and speed-endurance development. Lab required for Kinesiology majors. Prerequisite(s): SPM 308. GPA of 2.5.
- SP M 499. Topics in Athletic Training 1-3 cr.  
Problems in athletic training and independent work in their solutions. Consent of instructor required. Prerequisite(s): Junior or Senior status; Consent of ATEP director. Restricted to: Main campus only.
- SPAN- SPANISH**
- SPAN 101. Beginning Spanish Conversation 3 cr.  
Beginning conversation and intensive oral practice for non-degree seeking students and SPAN 111 and SPAN 112 students who desire additional conversational practice. This course does not count toward the NMSU second language requirement and is not open to native Spanish speakers without permission of instructor. Restricted to: Community colleges.
- SPAN 111. Elementary Spanish I 4 cr.  
Spanish for beginners. Not open to Spanish-speaking students except by consent of instructor. Prerequisite: language placement and assessment by departmental examination.
- SPAN 112. Elementary Spanish II 4 cr.  
Spanish for beginners. Not open to Spanish-speaking students except by consent of instructor. Prerequisite: language placement and assessment by departmental examination or C or better in SPAN 111.
- SPAN 113. Spanish for Heritage Speakers I 3 cr.  
Emphasis on development of heritage Spanish language skills learned at home and/or in the community. Covers listening comprehension, development of vocabulary and cultural activities to help strengthen heritage language and culture. Students who have previously earned a C or better in SPAN 111 or SPAN 112 may not receive credit for this course.
- SPAN 115. Elementary Spanish I for Hotel, Restaurant and Tourism Managers 4 cr.  
Beginning Spanish for HRTM majors only. Will count towards HRTM degree language requirement. Does not count towards language requirement for other majors. Restricted to: Main campus only. Restricted to HRTM majors.
- SPAN 211. Intermediate Spanish I 3 cr.  
Speaking, reading, and writing. Not open to Spanish-speaking students except by consent of instructor. Prerequisite: language placement and assessment by departmental examination or C or better in SPAN 112.
- SPAN 212. Intermediate Spanish II 3 cr.  
Speaking, reading, and writing. Not open to Spanish-speaking students except by consent of instructor. Prerequisite: language placement and assessment by departmental examination or C or better in SPAN 211.
- SPAN 213. Spanish for Heritage Speakers II 3 cr.  
Emphasis on development of heritage language skills learned at home and/or in the community. Covers spoken Spanish, reading activities, and grammar skills to build on existing knowledge of the language.
- SPAN 214. Spanish for Heritage Speakers III 3 cr.  
Continued development of heritage Spanish language skills learned at home and/or in the community. Emphasis on reading, writing, and critical thinking skills. Review of grammar points will also be stressed in preparation for upper level courses.
- SPAN 230. Spanish for Hotel, Restaurant and Tourism Managers I 3 cr.  
Basic Spanish for Hotel, Restaurant and Tourism Managers. Preparation and practice of situations faced in the workplace. Fulfills language requirement for HRTM majors. Does not fulfill language requirement for A&S majors. The course is taught with HRTM 450 Prerequisite(s): Recommended completion of SPAN 111 and/or SPAN 112, or SPAN 113. Restricted to: Main campus only. Restricted to HRTM majors.
- SPAN 250. Cultures of the Spanish-Speaking World 3 cr.  
Familiarization with cultures of the Spanish-speaking world. Language variations, history, literature, fine arts, and cultural behavior of mainstream Hispanic cultures including U.S. Prerequisite: either SPAN 111, SPAN 112, or SPAN 113.
- SPAN 305. Topics in Hispanic Civilization 3 cr.  
Group study of selected topics focusing on Hispanic culture and civilization. Topics announced in the Schedule of Classes. May be repeated for a maximum of 6 credits. Prerequisite: SPAN 212 or SPAN 214 or consent of instructor.
- SPAN 306. Special Topics 3 cr.  
Group study of Spanish for specialized purposes (e.g. court interpreting; professional language for bilingual teachers; technical writing for the business community). Course subtitled in the Schedule of Classes. Prerequisite: SPAN 212 or SPAN 214 or consent of instructor. May be repeated for a maximum of 12 credits.

- SPAN 312. Grammar for Native Speakers of Spanish 3 cr.  
For students who have been exposed to Spanish at home or in the community. Review of grammatical concepts and analysis of both spoken and written Spanish. Students cannot receive credit for both SPAN 312 and SPAN 313. Prerequisite: SPAN 214 or consent of instructor.
- SPAN 313. Spanish Grammar 3 cr.  
A review of the rules of Spanish grammar. Students cannot receive credit for both SPAN 312 and SPAN 313. Prerequisite: SPAN 212 or SPAN 214 or consent of instructor.
- SPAN 314. Spanish Composition 3 cr.  
Development of written Spanish skills. Students cannot receive credit for both SPAN 312 and SPAN 315. Prerequisite: SPAN 312 or SPAN 313.
- SPAN 315. Composition for Native Speakers of Spanish 3 cr.  
Discussions of history and current political and cultural topics pertaining to the Hispanic world. Emphasis on development of writing skills in formal Spanish. Students cannot receive credit for both SPAN 314 and SPAN 315. Fulfills departmental requirement for SPAN 314. Prerequisite: SPAN 312 or SPAN 313.
- SPAN 325. Advanced Conversation 3 cr.  
Conversation and intensive oral practice. Not open to native Spanish speakers. Students cannot receive credit for both SPAN 325 and SPAN 327. Prerequisite: SPAN 212 or consent of instructor.
- SPAN 327. Spanish in the Community 3 cr.  
Emphasis on use of Spanish outside the classroom in the local communities. Activities include, but are not limited to, oral histories, language mentoring in schools, assisting with cultural activities and language research. Prerequisite(s): Basic communicative fluency in Spanish as determined by departmental advisor.
- SPAN 340. Introduction to Spanish Linguistics 3 cr.  
General aspects of Spanish linguistics: traditional, descriptive, historical, and dialectal. Prerequisite: SPAN 212 or SPAN 213.
- SPAN 350. Introduction to Chicano Studies 3 cr.  
Covers Mexican-American life, including language, history, education, politics and literature. Prerequisite: SPAN 312 or SPAN 313.
- SPAN 352. Spanish in Social Contexts 3 cr.  
The study of Spanish in the contexts of the societies in which it is spoken. Prerequisite: SPAN 312 or SPAN 313.
- SPAN 353. Spanglish and Bilingualism in the United States 3 cr.  
Covers lexical borrowing, code choice, language loss and maintenance and bilingual cognition. Prerequisite: SPAN 312 or SPAN 313.
- SPAN 361. US-Mexico Border Culture 3 cr.  
Study of major artistic and cultural trends in the U.S.-Mexico border. Selected subject to be identified by subtitle in the Schedule of Classes. May be repeated for a total of 6 credits under a different subtitle. Prerequisite(s): SPAN 312 or SPAN 313.
- SPAN 362. Hispanic Cultures and Civilizations 3 cr.  
Study of major artistic and cultural trends in Spain and Spanish-America. Prerequisite: SPAN 314.
- SPAN 363. US-Hispanic Culture 3 cr.  
Study of major artistic and cultural trends among US-Hispanics. Selected topics to be identified by subtitle in the Schedule of Classes. May be repeated for a total of 6 credits under a different subtitle. Prerequisite(s): SPAN 312 or SPAN 313.
- SPAN 364V. Culture and Civilization of Mexico 3 cr.  
Familiarization with culture, civilization, and regions of Mexico. History, geography, art, literature, folklore, customs, economics, and politics of each region. Impact of Mexican culture and civilization on the Southwest United States. Taught in English. Does not satisfy Arts and Sciences second language requirement.
- SPAN 365V. Culture and Civilization of Spanish America 3 cr.  
Familiarization with culture, civilization, and regions of Spanish America. Study of history, geography, art, literature, folklore, customs, economics and politics of each region. Impact of Spanish American culture and civilization on the Southwest United States. Taught in English. Does not satisfy College of Arts and Sciences second language requirement.
- SPAN 380. Introduction to Hispanic Literature 3 cr.  
Works in Spanish, all genres and periods. How to read literature in all forms. Prerequisite: SPAN 312 or SPAN 313.
- SPAN 385. Introduction to Chicano/US-Mexican Literature 3 cr.  
Introduction to the study of major works by Chicano/US-Mexican authors. Prerequisite: SPAN 312 or SPAN 313.
- SPAN 386. Conquest and Colonial Literature 3 cr.  
Study of peninsular and Spanish-American literature from colonial to the 18th century. Prerequisite(s): SPAN 312 or SPAN 313.
- SPAN 387. Romantics and Literary Nation Building 3 cr.  
Study of peninsular and Spanish-American literature of the 19th century. Prerequisite(s): SPAN 312 or SPAN 313.
- SPAN 388. Contemporary Hispanic Literature 3 cr.  
Study of Peninsular and Spanish-American literature from the 20th century to the present. Prerequisite(s): SPAN 312 or SPAN 313.
- SPAN 393. Introduction to Translation 3 cr.  
General aspects of translation from English to Spanish and Spanish to English. Prerequisites: SPAN 312 and SPAN 313.
- SPAN 399. Independent Studies in Literature, Language, or Culture 1-3 cr.  
Individualized, self-paced projects for advanced students. Students must present formal proposal of study. Prerequisite: SPAN 312 and SPAN 313. May be repeated for a maximum of 6 credits.
- SPAN 410. Mitos y Leyendas Indigenas 3 cr.  
Survey in Spanish language of indigenous poetry, myths and legends from Pre-Columbian times to present.
- SPAN 411. Creative Writing 3 cr.  
Creative writing in Spanish. Prerequisite: SPAN 312 or SPAN 313.
- SPAN 412. Spanish-American Poetry 3 cr.  
Study of major works by Spanish-American poets. Prerequisite: SPAN 312 or SPAN 313.
- SPAN 413. Mexican Literature 3 cr.  
Study of major works by Mexican authors. Prerequisite: SPAN 312 or SPAN 313.
- SPAN 414. Literary Translation 3 cr.  
Translation of literary texts from Spanish to English and English to Spanish. Prerequisite: SPAN 312 or SPAN 313.
- SPAN 415. Spanish-American Women Writers 3 cr.  
All genres of Spanish-American literature written by women. Prerequisite: SPAN 312 or SPAN 313.
- SPAN 416. Nineteenth Century Spanish-American Literature 3 cr.  
Study of major works by Spanish-American authors of the 19th century. Prerequisite: SPAN 312 or SPAN 313.
- SPAN 417. Spanish-American Essay 3 cr.  
Study of major works by Spanish-American essayists. Prerequisite: SPAN 312 or SPAN 313.
- SPAN 418. Spanish-American Short Story 3 cr.  
Study of major short stories by Spanish-American authors. Prerequisite: SPAN 312 or SPAN 313.
- SPAN 419. Spanish American Theater 3 cr.  
Study of major works by Spanish-American dramatists. Prerequisite(s): SPAN 312 or SPAN 313.
- SPAN 420. Hispanic Micro Fiction 3 cr.  
Study of micro fiction works by Hispanic Authors and creative writing workshop related to micro fiction.
- SPAN 421. Cuban Literature 3 cr.  
Study of major works or specific topics or periods of Cuban Literature. Selected topic to be identified by subtitle in the Schedule of Classes. May be repeated for a total of 6 credits under a different subtitle. Prerequisite(s): SPAN 312 or SPAN 313.
- SPAN 422. Literature of the Mexican Revolution 3 cr.  
Study of Mexican authors dealing with the Mexican Revolution. Prerequisite: SPAN 312 or SPAN 313.
- SPAN 424. Spanish-Caribbean Literature 3 cr.  
Major works of Cuban, Dominican, and Puerto Rican literature. Prerequisite: SPAN 312 or SPAN 313.
- SPAN 425. Spanish-American Literature Through the Eighteenth Century 3 cr.  
Study of Spanish-American literature through the 18th century. Prerequisite: SPAN 312 or SPAN 313.
- SPAN 426. Spanish-American Novel 3 cr.  
Study of major works by Spanish-American novelists. Prerequisite: SPAN 312 or SPAN 313.
- SPAN 427. Chicano/US Mexican-Literature 3 cr.  
Study of Chicano/US Mexican authors. Prerequisite: SPAN 312 or SPAN 313.
- SPAN 428. Hispanic Literature of the U.S. 3 cr.  
Study of major works by Cuban-American, Dominican-American, and U.S.-Puerto Rican authors. Prerequisite(s): SPAN 312 or SPAN 313. Restricted to: Main campus only.



- SPAN 429. Northern Mexican Literature 3 cr.  
Study of major works by Northern Mexican authors. Prerequisite: SPAN 312 or SPAN 313.
- SPAN 439. Topics in Applied Spanish Linguistics 3 cr.  
Group study of selected topics, to be identified by subtitle in the Schedule of Classes. Prerequisite: SPAN 340. May be repeated once under different subtitle for a maximum of 6 credits.
- SPAN 441. Prosa Modernista 3 cr.  
Study of major prose works by Latin American modernista authors. Prerequisite(s): SPAN 380, or consent of instructor. Restricted to: Main campus only.
- SPAN 445. Dialectos del Espanol 3 cr.  
In-depth exploration of Spanish dialects, including their formal characteristics, historical formation and regional variation. Prerequisite(s): SPAN 340 or SPAN 461.
- SPAN 446. Poesia Modernista 3 cr.  
Study of major poetry works by Latin American modernista authors. Restricted to: Main campus only.
- SPAN 447. Hispanic Film 3 cr.  
Study of major films from Spain and Spanish-America. Restricted to: Main campus only.
- SPAN 448. U.S.-Hispanic Film 3 cr.  
Study of major films about and/or by Hispanics of the U.S. Restricted to: Main campus only.
- SPAN 449. Special Problems 1-3 cr.  
Directed reading for graduate students in their specific fields to satisfy language requirement for master s or doctoral programs. May be repeated for a maximum of 6 credits.
- SPAN 450. Mexican Cultures 3 cr.  
Different aspects of Mexican Culture. Selected topic to be identified by subtitle in the Schedule of Classes. May be repeated for a total of 6 credits under a different subtitle. Prerequisite(s): SPAN 312 or SPAN 313.
- SPAN 451. Hispanic Cultures 3 cr.  
Issues in Hispanic cultures of the U.S., Spanish-America, and Spain. Also focuses on U.S.-Mexico border culture. Selected topics to be identified by subtitle in the Schedule of Classes. May be repeated for a total of 9 credits under a different subtitle. Prerequisite(s): SPAN 312 or SPAN 313.
- SPAN 453. Independent Studies in Hispanic Linguistics 1-3 cr.  
Individualized self-paced projects for advanced students. Prerequisites: consent of instructor. May be repeated for a maximum of 6 credits.
- SPAN 457. Strategies for Teaching Spanish for Native Speakers 3 cr.  
Strategies and techniques appropriate for teaching Spanish for Native Speakers. Emphasis on curriculum development and use of U.S. Hispanic literature in the classroom. Focus on processes of acquisition and evaluation of all four skills. Prerequisite: SPAN 314.
- SPAN 460. Spanish Language Acquisition 3 cr.  
Research and theories of acquisition of Spanish as a first or second language. Prerequisite: LING 200 or SPAN 340, or consent of instructor.
- SPAN 461. Introduction to Spanish Phonetics 3 cr.  
An introduction to Spanish phonetics including basic dialectal variation and comparison with English. Prerequisite: SPAN 340.
- SPAN 462. Spanish Phonology 3 cr.  
An in-depth examination of the sound system of Spanish including formal characterization, dialectal variation and laboratory data. Prerequisite: SPAN 461 or SPAN 492.
- SPAN 469. Gender and Sexuality in Hispanic Film 3 cr.  
The study of gender and sexual orientation issues in relation to identity as portrayed in Hispanic cinema. Crosslisted with: W S 469
- SPAN 470. Methods for Teaching Hispanic Children s and Adolescents Literature 3 cr.  
Current methods for teaching children s and adolescents literature for levels K-16. Researches appropriate literature for each level, and techniques and strategies to design teaching units and activities.
- SPAN 490. Special Topics 3 cr.  
Selected topic to be identified by subtitle in the Schedule of Classes. May be repeated for a total of 9 credits under a different subtitle. Prerequisite(s): SPAN 312 or SPAN 313.
- SPAN 491. History of the Spanish Language 3 cr.  
The development of Spanish from its origins. Prerequisite: SPAN 314 or SPAN 340.
- SPAN 492. Structure of Spanish 3 cr.  
Topics in Spanish linguistics including phonology, morphology, syntax, and semantics. Prerequisite: SPAN 314 or SPAN 340.
- SPAN 493. Studies in U.S. and Borderland Spanish 3 cr.  
Linguistic issues of U.S. and borderland Spanish. Prerequisite: SPAN 340.
- SPCD- SPEECH/ENGLISH AS A SECOND LANGUAGE**
- SPCD 101. Int Eng - Sec Lang I 3-18 cr.  
Instruction for undergraduates in speaking, reading and writing basic conversational English. Class meets 30 hours weekly. Enrollment limited to students in International Intensive English Program. Consent of instructor required.
- SPCD 102. Int Eng - Sec Lang II 3-18 cr.  
Continuation of SPCD 101. Intermediate level. Class meets 20 hours weekly. Enrollment limited to undergraduate students in the International Intensive English Program. Consent of instructor required.
- SPCD 103. Intensive English as a Second Language III 3-18 cr.  
Writing and speaking academic English. Class meets 10 hours weekly, with additional laboratory hours at the instructor's discretion. Enrollment limited to undergraduates in International Intensive English Program. Consent of instructor required.
- SPCD 105. Intensive Training in English I 3-12 cr.  
Instruction in speaking, reading, and writing elementary English as a second language. Course meets 25-30 hours weekly. The first of a series of preparatory academic English courses. Enrollment limited to Center for Intensive Training in English registrants. Prerequisite: consent of instructor. Graded S/U.
- SPCD 107. Intensive Training in English III 3-12 cr.  
Advanced academic training in English. Course emphasizes formal written and speaking skills in preparation for degree work at university. Class meets 25-30 hours weekly. Enrollment limited to Center for Intensive Training in English registrants. Prerequisite: consent of instructor. Graded S/U.
- SPCD 108. Intermediate ESL Listening and Speaking 3 cr.  
Development of listening and speaking skills with attention to pronunciation. Emphasis on conversation and oral practice appropriate to an academic setting. Prerequisites: placement based on English language screening test, and either a minimum TOEFL score of 500 or consent of instructor. Graded S/U.
- SPCD 110. Intermediate ESL Composition and Grammar Review 3 cr.  
Development of fluent academic writing skills, with an emphasis on grammar review for editing purposes. Prerequisite(s): Placement based on English language screening test, and either a minimum TOEFL score of 500 or consent of instructor.
- SPCD 111G. Advanced ESL Composition 4 cr.  
Academic writing, including library research papers and the issue of plagiarism, for students with nonnative English. (SPCD 111G is substituted for ENGL 111G for international students whose native language is not English.). Prerequisite(s): Placement based on English language screening test, and either a minimum TOEFL score of 500 or consent of instructor; or successful completion of SPCD 110. Restricted to: Main campus only.
- SPCD 200. ESL: Independent Study 1-12 cr.  
Independent study of English as a second language tailored to meet the specific needs of students from other countries. Prerequisite: registered in CITE program. Graded S/U.
- SPCD 451. Intensive English as a Second Language I 3-18 cr.  
Instruction in speaking, reading, and writing basic conversational English. Class meets 30 hours weekly. Enrollment limited to beginning level graduate students in the International Intensive English Program. Consent of instructor required.
- SPCD 452. Intensive English as a Second Language II 3-18 cr.  
Continuation of SPCD 401. Class meets 20 hours weekly. Enrollment limited to intermediate-level graduate students in the International Intensive English Program. . Consent of instructor required.
- SPCD 453. Intensive English as a Second Language III 3-18 cr.  
Writing and speaking scientific English. Class meets 10 hours weekly, with additional laboratory hours at the instructor's discretion. Enrollment limited to advanced-level graduate students in the International Intensive English Program. Consent of instructor required. Prerequisite(s): SPCD 402 or consent of instructor.
- SPCD 458. Advanced Speaking and Listening for International Graduate Students 3 cr.  
Advanced speaking and listening skills for active participation at the graduate level. Emphasis on pronunciation and individual goal setting. Includes a theoretical component involving library research or preparation and presentation of a teaching unit. Prerequisites: placement and 530 TOEFL or consent of instructor. Graded S/U, RR.



SPCD 470. Scholarly Writing for International Graduate Students 3 cr.  
Instruction and practice in writing major academic genres, including experimental, descriptive, and problem-solution research reports, proposals, and library referenced papers. Prerequisites: placement based on English language screening test or successful completion of SPCD 110; a minimum TOEFL score of 500 or consent of instructor; and successful completion of SPCD 108/490 where indicated by placement. Main campus only. Graded S/U.

SPCD 490. Seminar Skills for Foreign Students 3 cr.  
Advanced skills required for active participation in academic discussions and oral presentations. Includes extensive video-taping which is replayed for evaluation. Prerequisite: placement based on English language screening test, and a minimum TOEFL score of 500 or consent of instructor. Main campus only.

### SPED- SPECIAL EDUCATION

SPED 201. Topics 3 cr.  
Offered under various subtitles that indicate the subject matter to be covered. May be repeated 3 times for a maximum of 9 credits.

SPED 202. Culture, Learning and Academic Achievement in a Diverse Society 3 cr.  
Development of culturally responsive learning strategies, skills and utilization of support services, to enhance academic achievement. Restricted to: Main campus only.

SPED 210. Introduction to Special Education 3 cr.  
For paraprofessional students who will be working with a teacher in a Special Education classroom. This class will provide an overview of characteristics of children with special needs, legal issues, framework of effective instruction and a variety of practical teaching and learning strategies that are relevant to the tasks and academic demands required in inclusive classrooms.

SPED 350. Introduction to Special Education in a Diverse Society 3 cr.  
Characteristics, identification, and educational needs of exceptional learners. Attention is given to the various types of programs serving exceptional learners. Designed for all professional personnel who work with exceptional learners.

SPED 355. Introduction to Bilingual/Multicultural Special Education 3 cr.  
Introduction to issues related to the provision of services to culturally and linguistically diverse students with exceptionalities. Same as BIL 355.

SPED 360. Elementary Curriculum, Methods, and Materials for Special Education in a Diverse Society 3 cr.  
Curriculum theory and development for special education programs. Various teaching methods utilized with elementary exceptional learners and techniques involved in identifying, adapting, and developing materials will be addressed.

SPED 406. High Incidence Disabilities in a Diverse Society 3 cr.  
Examines those areas of disability that most frequently occur in the special education population, including mental retardation, learning disabilities, communication disorders, and behavioral and emotional disorders.

SPED 407. Low Incidence Disabilities in a Diverse Society 3 cr.  
Examines those disabilities that occur less frequently in the special education population, including hearing loss, visual disorders, autism, and other severe manifestations.

SPED 409. Reading for Elementary Exceptional Learners in a Diverse Society, K-6 3 cr.  
Emphasizes reading diagnosis and materials for students with special developmental and learning problems. Taught with SPED 509.

SPED 411. Reading for Elementary Exceptional Learners in a Diverse Society, 7-12 3 cr.  
Extends information covered in SPED 509, which covers grades K 6. Strategies and materials are addressed.

SPED 415. Working with Families of Exceptional Learners in a Diverse Society 3 cr.  
Methods and techniques for educators and other professionals in parent/professional relationships.

SPED 424. Foundations of Education for Deaf and Hard of Hearing Students 3 cr.  
An examination of historic and current developments in the education of the deaf and hard of hearing including: sound sensation/perception, cognition/intelligence, language/literacy, memory, psychosocial development, counseling, culture, and assessment. Taught with SPED 524 and SPED 622 with differentiated assignments.

SPED 425. Language Development for Deaf & Hard of Hearing Students 3 cr.  
Developmental approach to language learning for individuals with hearing impairments including linguistic and cognitive potential, assessment and intervention strategies, and reading language. Taught with SPED 525 and SPED 623 with differentiated assignments.

SPED 426. Teaching Content Subjects to Preschool-Twelfth Grade for Deaf and Hard of Hearing Students 3 cr.  
Curriculum and instructional procedures common to education of hearing impaired including reading, adaptations to regular curriculum, methods for planning, implementing, and translating diagnostic information into programming. Taught with SPED 526 and SPED 626 with differentiated assignments.

SPED 428. Deafness: Psychological Theories, Assessments and Accommodations 3 cr.  
Developmental psychological and cognitive theories related to deafness. Assessment issues and accommodations for assessment of deaf and hard-of-hearing children. Taught with SPED 528 and SPED 628 with differentiated assignments.

SPED 429. Literacy and Deafness 3 cr.  
Covers literacy development framework. Methods for teaching reading and writing and for assessment of reading and writing skills in deaf and hard-of-hearing children. Taught with SPED 529 and 629

SPED 450. Working with Young Children with Special Needs, Ages 3-8 3 cr.  
Addresses competencies for working with young children with exceptionalities, ages three-eight, and their families. Public school, private school, Head Start and other models are included. Taught with SPED 550. Prerequisite(s): SPED 350 or equivalent.

SPED 451. Assessment of Young Children, Birth-Eight 3 cr.  
Covers instruments and procedures for assessing young children and their families in order to determine atypical development. Screening, diagnosis, program planning, placement and evaluation issues are covered. Prerequisite: SPED 450. Same as SPED 551.

SPED 452. Foundations of Visual Impairment 3 cr.  
Provides the history and theory of teaching students with visual impairments and multiple disabilities. An overview of educational, historical, and psychosocial effects of visual impairments on the individual and means of adapting with a visual impairment will be covered. Taught with SPED 532 and SPED 632 with differentiated assignments. Consent of instructor required.

SPED 453. Anatomy and Functions of the Visual System 3 cr.  
This course will cover the structure and function of the eye and associated diseases and how vision is affected. Appropriate educational recommendations and functional vision assessment techniques will be emphasized. Taught with SPED 533 and SPED 633 with differentiated assignments. Consent of instructor required. Prerequisite(s): SPED 452 or consent of instructor.

SPED 454. Visual Impairment with Multisensory Impairments 3 cr.  
This course is an overview of education services for the student with visual impairments and multiple sensory impairments. Emphasis is on curricula, communication, behavior management, inclusion, transition, and independent living. Taught with SPED 534 and SPED 634 with Differentiated assignments. Consent of instructor required. Prerequisite(s): SPED 452 or SPED 532 or SPED 632 or consent of instructor.

SPED 455. Braille I: Literacy Skills for Students with Visual Impairments 3 cr.  
This course will cover the uncontracted and contracted literary Braille code and methods of teaching Braille to tactile readers. Taught with SPED 536 and SPED 636 with differentiated assignments. Consent of instructor required. Prerequisite(s): SPED 452 or SPED 453 or consent of instructor.

SPED 457. Braille II: Literacy Skills for Students with Visual Impairments 3 cr.  
This course will cover the Nemeth Braille code for mathematics, the abacus, the use of technology for Braille, foreign language, music and Braille translation programs. Taught with SPED 538 and SPED 638 with differentiated assignments. Consent of instructor required. Prerequisite(s): SPED 455 or SPED 536 or SPED 636 or Consent of Instructor.

SPED 458. Intellectual Disabilities in a Diverse Society: An Introduction 3 cr.  
Dealing with history, philosophy, goals and objectives, classification, and characteristics of intellectual disabilities. Taught with SPED 558 and SPED 658 with differentiated assignments. Consent of instructor required. Prerequisite(s): SPED 350 or SPED 500 or consent of instructor. Restricted to SPED majors.

SPED 459. Classroom Management for Diverse Learners 3 cr.  
Behavior-change strategies for exceptional learners.

- SPED 460. Instructional Strategies of Teaching Visually Impaired 3 cr.  
This course covers assessment, curricular adaption's, knowledge of transition age, young children with multiple disabilities, and assistive technology. Prerequisite: Braille I, Braille II and Consent of Instructor Consent of instructor required. Prerequisite(s): Braille I and Braille II and consent of instructor.
- SPED 463. Introduction to Assessment of Diverse Exceptional Learners 3 cr.  
Theory and use of norm and criterion-referenced instruments and learning theories in the classroom; planning of prescriptive instructional programs.
- SPED 464. Working with Young Children with Special Needs, Ages Birth-2 3 cr.  
Provides competencies for working with infants and toddlers (birth-2) with exceptionalities and their families. Neo-natal, home-based, and community-based programs and issues are included. Same as ECED 465 and SPED 564.
- SPED 466. The Learning Disabled Student in a Diverse Society 3 cr.  
Current definitions, conceptualizations, and techniques. Taught with SPED 566 SPED 666 with differentiated assignments. Prerequisite(s): SPED 350 or 500 or consent of instructor. Restricted to SPED majors.
- SPED 467. Behavior Disorders in a Diverse Society 3 cr.  
An in-depth study of the classification, characteristics, educational needs, and professional literature regarding individuals with behavior disorders. Taught with SPED 567 and SPED 667 with differentiated assignments. Prerequisite(s): SPED 350 or SPED 500 or consent of instructor. Restricted to SPED majors.
- SPED 469. Experiential Learning in Career/Technical Education for Exceptional in a Diverse Society 3 cr.  
Addresses the planning, delivering and evaluation of experiential learning activities for students with special needs. Specific strategies for working with students with special needs in a shop or laboratory setting within the Career and Technical Education environment will be included. Taught with AXED 569 and SPED 569. Prerequisite(s): SPED 350. Crosslisted with: AXED 469
- SPED 470. Life Span Development and Transition in a Diverse Society 3 cr.  
Special problems associated with transitions over the life span, with emphasis on adolescent and adult needs. Attention to service approaches for public schools, sheltered workshops, residential hospitals, and group homes.
- SPED 480. Secondary Curriculum, Methods, and Materials for Special Education in a Diverse Society 3 cr.  
Curriculum theory and development for elementary special education programs. Various teaching methods utilized with secondary exceptional learners and techniques for identifying, adapting, and developing materials will be addressed. Taught with SPED 580.
- SPED 481. Practicum in Education, Equity and Cultural Diversity 2-6 cr.  
Supervised experience in special education settings. One semester (2 credits) required. Prerequisite(s): SPED 350 and SPED 360 or consent of instructor.
- SPED 482. Student Teaching SPED 1-12 cr.  
Supervised teaching in a special education classroom and participation in a required seminar. Prerequisite: SPED 481 and admission to student teaching. May be repeated for a maximum of 6 credits. Restricted to special education majors. Same as SPED 582.
- SPED 483. Early Childhood SPED Student Teaching 6 cr.  
A student teaching experience designed for students studying early childhood special education. Prerequisites: SPED 281 and admission to student teaching. Restricted to majors. Same as SPED 583.
- SPED 485. Introduction to Autism 3 cr.  
This course will provide an overview of autism spectrum disorders as a triad of impairments, including historical and theoretical perspectives, assessment issues, characteristics of autism, intervention programs, and family issues. Taught with SPED 585 and SPED 685.
- SPED 486. Behavior and Autism 3 cr.  
This course will cover the first of the triad of impairments. Students will gain an understanding of the behaviors of children with autism. Students will examine several behavior management philosophies and research based interventions and how they can be applied in the educational setting. Attention will also be given to play skills. The family perspective and participation in the proactive behavior management process will be incorporated throughout the course. Taught with SPED 586 and SPED 686 with differentiated assignments. Consent of instructor required. Pre/Corequisite(s): SPED 485 or SPED 585 or SPED 685.

- SPED 487. Social Skills and Autism 3 cr.  
This course will cover the second of the triad of impairments. As a blend of researched based models and evidenced based practical applications, students will gain an understanding of the social skill deficits often associated with autism spectrum disorders. Review a variety of social cognition theories and explore effective social skill interventions for children functioning at a variety of levels along the autism spectrum. Taught with SPED 587 and SPED 687 with differentiated assignments. Consent of instructor required. Pre/Corequisite(s): SPED 485 or SPED 585 or SPED 685.
- SPED 488. Communication and Autism 3 cr.  
This course will cover the third of the triad of impairments. Students will gain an overview of communication characteristics and difficulties often associated with autism spectrum disorders. Review current tools and strategies used to assess speech, language, and interaction skills. Use assessment results to identify needs and implement appropriate interventions. Explore a variety of intervention strategies aimed at building receptive, expressive, and pragmatic language of children functioning at a variety of levels along the autism spectrum. Taught with SPED 588 and SPED 688 with differentiated assignments. Consent of instructor required. Prerequisite(s): SPED485 or SPED585 or SPED685.
- SPED 489. Topics 3 cr.  
Offered under various subtitles which indicate the subject matter to be covered. May be repeated 3 times for a maximum of 9 credits.
- SPED 495. Directed Study courses in Special Education 1-3 cr.  
Each course shall be identified by a qualifying subtitle. A maximum of 3 credits per semester and a grand total of 9 credits.
- SPED 495 H. Directed Study Courses in Special Education. 1-3 cr.  
Designed for students in the honors program. Each course will be identified by a qualifying subtitle. A maximum of 3 credits in any one semester and a grand total of 6 credits.

### STAT- STATISTICS

- STAT 251G. Statistics for Business and the Behavioral Sciences 3 cr.  
Techniques for describing and analyzing data; estimation, hypothesis testing, regression and correlation; basic concepts of statistical inference. Prerequisite: MATH 120 (see note above.) Same as A ST 251G.
- STAT 271G. Statistics for Psychological Sciences 3 cr.  
Techniques for describing and analyzing data; basic concepts of statistical inference; estimation, hypothesis testing, correlation, and analysis of variance. Prerequisite: MATH 120.
- STAT 371. Statistics for Engineers and Scientists I 3 cr.  
Modern probability and statistics with applications to the engineering sciences. Prerequisite: MATH 192G.
- STAT 400. Undergraduate Research 1-3 cr.  
Arrangements must be made with supervising professor before registration. May be repeated for a maximum of 6 credits.
- STAT 470. Probability: Theory and Applications 3 cr.  
Basic probability distributions including binomial, normal; random variables, expectation; laws of large numbers; central limit theorem. Prerequisites: MATH 291G and at least one-300 level Math course.
- STAT 480. Statistics: Theory and Applications 3 cr.  
Point and interval estimation; sufficiency; hypothesis testing; regression; analysis of variance; chi-square tests. Prerequisite: STAT 470.

### SUR- SURVEYING ENGINEERING

- SUR 101. Introduction to Surveying Engineering 1 cr.  
Review and discussion of career paths open to surveying engineers. Restricted to: Main campus only.
- SUR 201. GPS and Spatial Data Applications 3 cr.  
Overview of spatial data applications based on GPS observations. Emphasis on positioning and navigation using code-phase techniques with handheld receivers. Use of coordinate systems. Students encouraged to have their own GPS handheld unit.
- SUR 222. Plane Surveying 3 cr. (2+3P)  
Surveying theory and practice as applied to plane surveying, in these areas: error propagation, linear measurements, angle measurements, area determination, differential and trigonometric leveling, and topographic mapping. Prerequisite(s): MATH 190G.
- SUR 264. Introduction to LIS 3 cr. (2+3P)  
Introduction to land information systems. Land tenure systems, coordinate systems, computer methods. Pre/Corequisite(s): DRFT 109.

- SUR 285. Photogrammetry 3 cr. (2+3P)  
Introduction to the techniques and uses of photogrammetry in surveying and mapping. The geometry of stereo models. Flight planning. Prerequisite(s): MATH 190.
- SUR 292. Public Land Survey System Boundaries 3 cr. (2+3P)  
Detailed study of the U.S. Public Land Survey System Instructions with special emphasis on New Mexico. Sectionalized land subdivision, corner restoration, and field surveys. Field trips required. Prerequisite: SUR 222.
- SUR 312. Legal Principles of Boundary Surveying 3 cr.  
Legal principles of property boundary retracement, land descriptions, and rights-of-way. Systems of law and legal research. Requires a legal research paper. Prerequisite: SUR 292.
- SUR 322. Spatial Data Concepts and Models 3 cr. (2+3P)  
Spatial data concepts, models and computational methods as applied to surveying. Topics include coordinate geometry, state plane coordinates, spherical trigonometry, and data adjustments to models. Limitations of data models will be explored. Prerequisite : SUR 222.
- SUR 328. Principles and Practices of Construction Surveying 3 cr. (2+3P)  
Surveying principles and practice as they are applied to construction surveys. Horizontal, vertical and spiral curves, slope staking, area and volume computations. Prerequisites: SUR 222 and either MATH 191G or MATH 235.
- SUR 330. Computer Applications of Surveying 3 cr. (2+3P)  
Advanced application of concepts and tools used in the manipulation of geospatial data in a computer environment. Topics include the use of surveying-specific software applications for problem solving, analysis and generation of spatial data products. Advanced programming skills in a high level language are presented and applied. Prerequisite(s): DRFT 109 AND SUR 222, and ( MATH 191 or MATH 235) and (C S 187 or ET 262 or E E 161).
- SUR 351. Introductory Survey Measurements, Analysis, and Adjustments 3 cr.  
Applications of mathematics in surveying. Conventional topics of error ellipses and theory of observations. Emphasis on computer applications for adjustments and analysis. Prerequisite(s): SUR 222 and (MATH 192 or MATH 236).
- SUR 361. Introduction to Geodesy 3 cr. (2+3P)  
The ellipsoid of revolution, computations on the ellipsoid, coordinate systems, gravity, and leveling. Prerequisites: SUR 222 and either MATH 191G or MATH 235.
- SUR 370. Control Surveying 3 cr. (2+3P)  
Design and use of survey control networks. Includes Horizontal, Vertical and 3D networks. Use of standards in control surveying. Prerequisite(s): SUR 222. Pre/Corequisite(s): MATH 192G.
- SUR 384. Surveying Practicum 1-3 cr.  
Surveying practice under the direction of a licensed, professional land surveyor requiring 45 hours per credit as per a plan worked out between the student and the surveyor and approved by the Surveying Engineering faculty. Work must be certified by the licensed, professional land surveyor. Requires a written report by the student. Prerequisites: SUR 222 and junior standing.
- SUR 401. Ethics and Professionalism in Surveying and Mapping 3 cr.  
Ethics as applied to the surveying profession. Includes case studies and problems. Prerequisites: SUR 312, SUR 328, and senior standing.
- SUR 410. Advanced Topics in Mapping Sciences 3 cr. (2+3P)  
Development of map projections as the basis for state plane and other coordinate systems. Organization, management, and use of digital spatial data in terms of conventional and evolving three-dimensional models. Spatial data accuracy. Pre/Corequisite(s): SUR 330, SUR 361.
- SUR 412. Advanced Topics in Boundary Surveying 3 cr. (2+3P)  
Advanced land boundary topics including water boundaries, mineral claims, Spanish and Mexican land grants, state and national boundaries. Prerequisite: SUR 312.
- SUR 450. Senior Project 1 cr.  
Research project prepared by student. Includes class presentation. Students will learn how to research after the end of their formal education. Prerequisite(s): Senior Standing.
- SUR 451. Advanced Survey Measurements, Analysis, and Adjustments 3 cr. (2+3P)  
Rigorous analysis of theory of observations as applied to surveying. Conventional topics of error ellipses, least squares, and survey pre-analysis, etc., to be addressed. Emphasis on computer applications for adjustments and analysis. Prerequisite(s): SUR 330, SUR 351, (MATH 280 or MATH 480). Pre/Corequisite(s): STAT 371.
- SUR 452. Land Development Design 3 cr. (2+3P)  
Covers different phases of land development process. Study of New Mexico subdivision and condominium laws. Site evaluation includes boundary, control topographic surveys, and environmental and cultural considerations. Students design lot and building arrangements and streets. Prerequisite(s): SUR 312, SUR 328. Pre/Corequisite(s): DRFT 153.
- SUR 461. Introduction to Satellite Geodesy 3 cr. (2+3P)  
Overview of astronomy concepts, summary of celestial mechanics, history of satellite positioning, modern positioning techniques, impact of gravity, review of geodetic standards and specifications, logistics of GPS data collection. GPS data processing, network adjustments, and evaluation of spatial data accuracy. Prerequisite(s): SUR 361 and (MATH 280 or MATH 480).
- SUR 464. Land Information Systems Applications 3 cr. (2+3P)  
Concepts of real property, land tenure and ethics, and land registration systems; the function and design of multipurpose cadastre and land information systems. Prerequisite(s): SUR 264, SUR 312, and SUR 330.
- SUR 498. Special Topics 1-3 cr.  
Directed studies into current topics. Subject to be agreed upon between student and instructor. Prerequisite: Consent of instructor

### TCEN- ENVIRONMENTAL AND ENERGY TECHNOLOGY

- TCEN 111. Photovoltaic Basic Electrical Principles 4 cr. (3+2P)  
Focuses on resistance, current, voltage, and power in AC and DC circuits; measurements; computations of series and parallel circuits; circuit analysis; and troubleshooting with basic test equipment as applied to renewable energy systems. Corequisite(s): OETS 104.
- TCEN 112. Photo Voltaic Design Fundamentals 4 cr. (3+2P)  
A study of photo voltaic design basics, photo voltaic (PV) Cells, modules, and system components; electrical circuits; grid-tied/grid-interactive PV system design and sizing for use on homes; solar electric products and applications; and understanding energy conversion from sunlight to electricity, and working with solar conversion equipment. Pre/Corequisite(s): TCEN 113.
- TCEN 113. OSHA 10 Hour Construction Hazard Identifications 1 cr.  
Intended for entry-level participants to provide instruction on a variety of construction safety and health standards. Topics include Introduction to OSHA, Electrical, Ladder, Excavation, Scaffold, and Forklift Hazards, Fall Protection, Materials Handling, Personnel Protective Equipment and Confined Space Entry Hazards. Meets OSHA 10-Hour Requirements.
- TCEN 221. Roofing Materials and Methods 3 cr. (2+2P)  
Covers application techniques and estimation of asphalt and wood roofing products and accessories including gutters and flashing. Presents roof penetration, roof loading issues, and energy system installation requirements for mounting photo voltaic or solar thermal systems. Prerequisite(s): TCEN 112.
- TCEN 222. Photo Voltaic Grid Tie Installation 2 cr. (2+1P)  
Concentrates on providing the student photo voltaic installation information necessary to tie into the electrical grid system. In addition, teaches the student how to layout an installation for maximum performance using standard industry tools such as a Solar Path Finder. Conduit bending, wiring, roof penetrations are also part of the course. Prerequisite(s): TCEN 112.
- TCEN 223. Photo Voltaic National Electrical Code Principles 2 cr. (2+1P)  
Focuses on all sections of the National Electrical Code and local code requirements applicable to photo voltaic electrical installation. A partial list of areas covered is chapters one through four and section 690, "Solar Photovoltaic Systems" of the National Electrical Code. Prerequisite(s): TCEN 112. Pre/Corequisite(s): TCEN 222.
- TCEN 250. Photo Voltaic System Integrator Fundamentals 3 cr.  
Teaches the student project management fundamentals for working with homeowners, businesses, government, contractors, and manufacturers to design, build, and install complete alternative energy systems. Covers photovoltaic, small wind, and micro-hydro system designing, permitting, budgeting, and cost estimating requirements. Prerequisite(s): E T 125. Pre/Corequisite(s): TCEN 222.
- TCEN 251. Advanced Photo Voltaic On/Off Grid Installation 3 cr. (2+2P)  
Photo Voltaic advanced topics to include panel racking and installation, battery storage, charge controllers, mechanical integration of arrays on buildings, and key elements involved in choosing a mounting system. Prerequisite(s): TCEN 222.
- TCEN 252. NABCEP Certification Preparation 1 cr.  
Preparation for the North American Board of Certified Energy Practitioners (NABCEP) Photo Voltaic and Solar Thermal Installation Certification. Prerequisite(s): TCEN 222. Pre/Corequisite(s): TCEN 251.



TCEN 253. Photo Voltaic System Troubleshooting and Maintenance 3 cr. (2+2P)  
Covers photo voltaic system troubleshooting and maintenance topics to include equipment, electrical, and installation problem areas.  
Prerequisite(s): TCEN 222. Pre/Corequisite(s): TCEN 251.

### THTR- THEATRE ARTS

THTR 101G. The World of Theater 3 cr.  
An appreciation class introducing the non-major to all aspects of theatre, including its history, literature and professionals. Students attend and report on stage productions.

THTR 105. Acting for Non-Majors 3 cr.  
An introduction to basic performance techniques for non-majors.

THTR 110. Acting I 3 cr.  
Basic understanding of self-expression through a variety of physical exercises, improvisation, and character study, culminating in scene or monologue work. Restricted to THTR majors.

THTR 130. The Art of Theatre 3 cr.  
An introductory class for theatre majors covering the basic elements of campus theatrical endeavor and theory including overviews of theatre history, elements, artists, and literature. Also introduces the Theatre Arts major, faculty, and theatre resources available on campus.

THTR 141. Introduction to Stagecraft 3 cr.  
Basic techniques used in the construction of scenery, props, and sound. Lab required. Pre/Corequisite(s): THTR 141L.

THTR 141 L. Stagecraft Laboratory 1 cr.  
Class members will assist with construction for productions in a studio environment. Pre/Corequisite(s): THTR 141.

THTR 142. Introduction to Costume Crafts 3 cr.  
A survey of all aspects of costuming a theatrical production. Basic construction, use of equipment, knowledge of available materials, dyeing, and millinery. No audits. Pre/Corequisite(s): THTR 142L.

THTR 142 L. Costume Craft Lab 1 cr.  
Class members will assist in construction for productions in a studio environment. Pre/Corequisite(s): THTR 142.

THTR 149. Running Crew I 2 cr. (1+2P)  
Students learn about backstage and front of house production positions and work on a technical aspect of a production in a rehearsal and performance environment. Graded: S/U.

THTR 203. Theatre History I 3 cr.  
History of theatre and drama from ancient Greece to Shakespeare.

THTR 204. Theatre History II 3 cr.  
History of theatre and drama from the Restoration to the modern day.

THTR 205. Vocal Production for the Actor 3 cr.  
Exploration and development of the actor's vocal instrument, including relaxation, projection, diction and articulation.

THTR 210. Acting II 3 cr.  
Monologues and scene work, using character and script analysis. Prerequisite(s): THTR 110. Pre/Corequisite(s): THTR 205.

THTR 222. Theatre Topics 1-3 cr.  
Specific subjects to be announced in the Schedule of Classes. May be repeated for a maximum of 9 credits.

THTR 249. Running Crew II 1 cr.  
Students work on a technical aspect of a production in a rehearsal and performance environment.

THTR 252. Theatre Sound 3 cr.  
Sound, audio, and electricity lectures combined with projects involving working with sound equipment.

THTR 306. Screenwriting I 3 cr.  
Same as CMI 309, ENGL 309. Consent of instructor required. Prerequisite(s): ENGL/CMI 235. Crosslisted with: CMI 309 and ENGL 309

THTR 307V. Costume History 3 cr.  
History of clothing for theatrical purposes, origins and evolution of period clothing in relation to social, political, and aesthetic factors of different periods.

THTR 308. Creative Writing: Playwriting 3 cr.  
Technique of one-act playwriting, and analysis of dramatic structure. Prerequisite(s): ENGL 111. Crosslisted with: ENGL 308

THTR 309. Advanced Creative Writing: Playwriting Workshop 3 cr.  
Technique of full-length playwriting and analysis of dramatic structure. Consent of instructor required. Prerequisite(s): THTR 308 or ENGL 308. Crosslisted with: ENGL 415

THTR 310. Styles in Acting 3 cr.  
Analysis of differing styles of acting through scene work representing various time periods and genres. Prerequisite(s): THTR 210.

THTR 312. Acting Shakespeare 3 cr.  
Acting Shakespeare's tragedies and comedies, including text work, scan-sion, movement, scene work, and monologues. Prerequisite(s): THTR 210.

THTR 313. Improvisation 3 cr.  
Long and/or short form improvisation techniques in addition to a variety of exercises exploring terminology, character work and the elements of comedy. Prerequisite(s): THTR 105 or THTR 110.

THTR 316. Advanced Voice: Stage Dialects 3 cr.  
Studio class emphasizing the production of stage dialects through scene and monologue work. Prerequisite(s): THTR 110 and THTR 115.

THTR 317. Musical Theatre 3 cr.  
Acting class focused on developing and refining skills necessary for performing in musicals. Pre/Corequisite(s): THTR 210.

THTR 321V. Modern European Drama 3 cr.  
Masterworks of European drama from the late 18th century to present. Crosslisted with: ENGL 321G

THTR 323. American Drama 3 cr.  
Masterworks of American drama by noted American playwrights. Cross-listed with: ENGL 323

THTR 329. Studies in Drama 3 cr.  
Emphasis on a group of related works of European or American drama; topics will vary. Crosslisted with: ENGL 329 and CMI 329

THTR 334. Introduction to Stage Makeup 3 cr.  
Basic principles of stage makeup: straight, character, and specialty. Includes study of various products, methods of application, and the effects of lighting on makeup.

THTR 335. Advanced Stage Makeup 3 cr.  
Special problems in styles and character makeup, work with advanced materials, ventilating, and prosthetics. Prerequisite(s): THTR 334.

THTR 337. Independent Study 1-3 cr.  
For highly motivated students. Students propose and create their own course not covered through regular course offerings under the guidance of faculty. May be repeated for a maximum of 6 credits. Consent of instructor required.

THTR 341. Scene Painting 3 cr.  
Use of historical painting techniques in a project-driven classroom. Projects include 2-D and 3-D work, color mixing and theory, painting drops, and the use of paint for effects. Prerequisite(s): THTR 141.

THTR 342. Advanced Costume Craft Techniques 3 cr.  
General application of advanced three-dimensional technical costuming processes. May include buckram, celastic, protoplast, and latex applications. Consent of instructor required. Prerequisite(s): THTR 142, THTR 142L.

THTR 343. Costume Patterning 3 cr.  
Basic techniques in the production of flat patterns for modern and period silhouettes including some draping techniques. Consent of instructor required. Pre/Corequisite(s): THTR 142, THTR 142L.

THTR 345. Costume Practicum 1 cr.  
A practical course intended to provide students additional experience and greater responsibility within the workings of the Costume Shop. Pre/Corequisite(s): THTR 142.

THTR 346. Scenic Practicum 1 cr.  
A practical course intended to provide students additional experience and greater responsibility within the workings of the Scene Shop. Pre/Corequisite(s): THTR 141.

THTR 347. Lighting Practicum 1 cr.  
A practical course intended to provide students additional experience and greater responsibility within the workings of theatrical lighting.

THTR 348. Running Crew III 1 cr.  
Students will work on a technical aspect of a production in a rehearsal and performance environment. Prerequisite(s): THTR 149.

THTR 349. Running Crew IV 1 cr.  
Students will work on a technical aspect of a production in a rehearsal and performance environment. Graded: S/U. Prerequisite(s): THTR 149.

THTR 352. Costume Design 3 cr.  
Basic principles of costume design, including script analysis, study of design, drawing, and painting, and completion of rendered projects.



THTR 353. Scene Design	3 cr.
Design for the performing arts. Basic design skills and projects to exercise those skills, history of design in the theatre and the designer's role in the production process. Final project includes a finished scene design. Prerequisite: THTR 141 or consent of instructor.	
THTR 355. Lighting Design	3 cr.
Basic aspects of theatre lighting, including electricity, color theory, history, and types of theatre lighting. Required work includes hanging and focusing lights and crewing NMSU theatre productions.	
THTR 356. Theatre Production	1-3 cr.
Participation in the production of theatrical performances by stage managing, acting, designing, dramaturgy, or directing. May be repeated for a maximum of 6 credits. Graded S/U.	
THTR 357. Computer Scenographics	3 cr.
Project-oriented course teaching basic computer modeling skills. Projects focus on the creation of communication tools designers use in the theatrical process. Students will develop portfolios of completed projects. Consent of instructor required. Prerequisite(s): THTR 352, THTR 353, or THTR 355.	
THTR 360. Creative Dramatics	3 cr. (2+2P)
Methods of developing original dramatizations. Emphasis on curriculum problems and teaching techniques in elementary and secondary schools.	
THTR 366. Summer Theatre	1-3 cr.
Experience in professional or academic summer theatre. May be repeated for a maximum of 3 credits. Graded: S/U. Prerequisite(s): Consent of department head. Restricted to THTR majors.	
THTR 384. Stage Management	3 cr.
Study of stage management techniques and their application to play production. A working knowledge of union rules, and the procedure to facilitate these through proper communication skills.	
THTR 395. Directing I	3 cr.
Study and application of basic stage directing history and techniques. Prerequisite(s): THTR 105 or THTR 110.	
THTR 396. Theatre Management	3 cr.
Study of issues related to managing a theater company and producing plays.	
THTR 408. Shakespeare I	3 cr.
Same as ENGL 408.	
THTR 409. Shakespeare II	3 cr.
Same as ENGL 409.	
THTR 430. Special Topics	1-3 cr.
Specific subjects to be announced in the Schedule of Classes. May be repeated for a maximum of 9 credits.	
THTR 435. Directed Reading	1-3 cr.
Directed individualized studies. May be repeated for a maximum of 3 credits.	
THTR 439. Senior Seminar	2 cr.
Course preparing students for professions in and related to the theatre. Restricted to THTR majors.	
THTR 440. Senior Seminar Practicum	1 cr.
Capstone course preparing students to apply knowledge of theatre arts toward advanced training or career objectives in the discipline. Consent of instructor required. Pre/Corequisite(s): THTR 439. Restricted to THTR majors.	
THTR 455. Advanced Lighting Design	3 cr.
The design of lighting for live performance. Emphasis on conceptual aspects of design, as well as the uses of special techniques and effects. Crew requirements TBA. Prerequisite: THTR 355 or consent of instructor.	
THTR 457. Advanced Computer Scenographics	3 cr.
Project-oriented course for the advanced modeler. Projects focus on the creation of complex models, custom texturing and shading, virtual lighting, postproduction image work, and animation techniques. Students will develop digital portfolios. Prerequisite: THTR 357 and consent of instructor.	
THTR 495. Directing II	3 cr.
Advanced study of directing, with focus on theory, style, and concept. Prerequisite(s): THTR 395.	

**TOX- TOXICOLOGY**

TOX- TTOX 361. Basic Toxicology	3 cr.
Introduction to the principles of toxicology, discussion of toxic agents, environmental problems, testing procedures, and regulations. Prior course work in biology and chemistry recommended. Prerequisites: CHEM 112G, CHEM 114 or CHEM 110G. BIOL 111G or BIOL 211G recommended. Same as E S 361.	
TOX 423. Environmental Toxicology	3 cr.
Toxicological tests required by the EPA to determine human and environmental safety of pesticides and industrial pollutants; discussion of environmental fate of major pesticide classes and industrial pollutants. Prerequisite: TOX 361 or TOX 461.	
TOX 453. Regulatory Toxicology	2 cr.
Laws and regulations governing production, use and disposal of toxic or hazardous materials. Prerequisite: consent of instructor. Same as E S 453.	
TOX 461. Toxicology I	3 cr.
Introduction to principles of toxicology. Prerequisite(s): BIOL 111G or BIOL 211G, and CHEM 345. Restricted to: Main campus only. Crosslisted with: ANSC 461	

**UNIV- UNIVERSITY STUDIES**

UNIV 101. Tutorial	1-3 cr.
Development of specific skills required for college courses, such as note-taking, listening, and test-taking. To be taken in conjunction with a regular designated college course. May be repeated for a maximum of 3 credits. Graded S/U.	
UNIV 110. Personal Learning Skills I	1-3 cr.
Individualized programs for self-improvement in skill areas necessary for academic success in the university environment. Each course to bear an appropriate subtitle. May be repeated up to 3 credits. Graded S/U.	
UNIV 111. Personal Learning Skills II	1-3 cr.
Individualized programs for self-improvement in skill areas necessary for academic success in the university environment. Each course to bear an appropriate subtitle. Prerequisite: UNIV 110. May be repeated for a maximum of 3 credits. Graded S/U.	
UNIV 112. Academic and Personal Effectiveness	2 cr.
Learn academic self-analysis skills through the application of study and learning techniques to current course demands. Exposure to a variety of topics which enhance university and life-long learning.	
UNIV 113. Speed Reading	1 cr.
Introduction to strategies and techniques for increasing reading rate and comprehension related to academic areas.	
UNIV 150. The Freshman Year Experience	3 cr.
An introduction to the university and its resources; emphasis on development of academic and personal skills that enable freshmen to become successful learners. Prerequisite(s): Freshman Standing Only. Restricted to: Main campus only.	
UNIV 161. NMSU Gospel Choir	1 cr.
Students will gain performance experience and exposure to urban contemporary gospel music. Open to all majors. May be taken for unlimited credit. Restricted to: Main campus only.	
UNIV 300. Preparing for the Graduate Record Examination	1 cr.
Preparation for taking the Graduate Record Examination including review, test taking strategies and practice for the verbal, quantitative and analytical sections. Graded S/U.	
UNIV 350. Peer Education	3 cr.
Overview of college student development theory and its application to college student learning and peer education. Supervised experience as a peer educator with training in structured group facilitation. Prerequisite: consent of instructor.	
UNIV 361. NMSU Gospel Choir	1 cr.
Students will gain performance experience and exposure to urban contemporary gospel music. Open to all majors. May be taken for unlimited credit.	
UNIV 395. Independent Study	1-3 cr.
Individualized projects related to the field of learning assistance. May be repeated for a maximum of 3 credits.	

**W S- WOMEN'S STUDIES**

W S 201G. Introduction to Women s Studies	3 cr.
Analysis of the status of women in society today and history and consequences of gender stratification and inequality from the perspectives of sociology, anthropology, psychology, political science, and other sciences.	

- W S 202G. Representing Women Across Cultures 3 cr.  
Historical and critical examination of women's contributions to the humanities, with emphasis on the issues of representation that have contributed to exclusion and marginalization of women and their achievements. Cross-listed with: HON 218
- W S 250. Special Topics 3 cr.  
The topic of course will vary and will be indicated by subtitle. May be cross-listed with relevant courses at the 200-level from any specific department. May be repeated under different subtitle(s).
- W S 273. Sex and Gender 3 cr.  
Same as SOC 273.
- W S 316. History of Women in the American West 3 cr.  
Experiences and interactions among Native American, Spanish/Mexican, immigrant, and Anglo-American women in the American West from 1500 to the present. Same as HIST 316.
- W S 320. Sex Roles in Education 3 cr.  
Same as C EP 320.
- W S 325. Topics in Feminist Philosophy 3 cr.  
Same as PHIL 325.
- W S 345. Victimology 3 cr.  
Same as C J 345.
- W S 350. Special Topics 3 cr.  
The topic of course will vary and will be indicated by subtitle. May be cross-listed with relevant courses at the 300-level from any specific department. May be repeated under different subtitle(s).
- W S 352. Women in American History II 3 cr.  
Same as HIST 352.
- W S 356. Women and Politics 3 cr.  
Political socialization of children; women's past and present participation in the public sphere; gender-related public policy issues.
- W S 357. Gender and Society 3 cr.  
Overview of issues related to gender including how gender is constructed and reproduced in our society. Gender is examined from social psychological and institutional perspectives. Same as SOC 357.
- W S 359. Psychology of Women 3 cr.  
Same as PSY 359.
- W S 374V. Comparative Family Systems 3 cr.  
Same as SOC 374V.
- W S 380V. Women Writers 3 cr.  
Same as ENGL 380V.
- W S 381V. Women's Health Issues 3 cr.  
Same as HL S 380V.
- W S 382. Women in Mass Media 3 cr.  
Same as JOUR 380.
- W S 388. Women and Europe I 3 cr.  
Same as HIST 388.
- W S 389. Women in Europe II 3 cr.  
The history of women and gender in modern Europe, 1550-Present. Examines how conceptions of gender and sexuality both shaped and were shaped by political and social transformations in European history. Restricted to: Main campus only. Crosslisted with: HIST 389
- W S 397. Law and Sex 3 cr.  
Sex-based discrimination and the impact of constitutional and statutory provisions and their judicial interpretations and executive orders and implementations. Same as GOVT 397.
- W S 401. Women & Immigration 3 cr.  
Exploration of experiences of women immigrants as gender, race and class became increasingly important aspects of US immigration policies in the early 19th century. Explores role of gender in today's immigration experience.
- W S 402. Transnational Feminisms 3 cr.  
Explores dimensions of gender, race, class, and sexuality in conjunction with nationalisms, anti-capitalist struggles, religious fundamentalism, militarism, globalization, eco-critique, and the politics of resistance and social movements.
- W S 403. Gender & Horror 3 cr.  
Explores cultural anxieties and crises through the genre of horror as they relate to issues of gender, sexuality, feminism, and race. Traces ways horror films represent and reconfigure notions of sexuality and gender and ways they reinforce and/or challenge social norms.
- W S 420. Girls, Women and Crime 3 cr.  
Critical social science analysis of concepts of violence and justice as experienced by women impacted by the criminal justice system. Restricted to C J, W S majors. Crosslisted with: C J 420
- W S 422. Advanced Study in a Literary Form or Genre 3 cr.  
Same as ENGL 422. May be repeated for a maximum of 6 credits.
- W S 433. Women, Gender, and Culture 3 cr.  
Same as ANTH 433.
- W S 450. Special Topics 3 cr.  
The topic of course will vary and will be indicated by subtitle. May be cross-listed with relevant courses at the 400-level from any specific department. May be repeated under different subtitle(s).
- W S 451. Women's Studies Practicum 3 cr.  
Supervised field work in community setting relating to women. Prerequisite: consent of instructor. May be repeated for a maximum of 6 credits.
- W S 453. Women and Politics 3 cr.  
Crosslisted with: GOVT 353
- W S 454. Women Crossing Borders 3 cr.  
Experiences of women who cross class, race, cultural, national, or sexual borders including theories regarding women's Interactions across borders. Emphasis will vary with professor and discipline.
- W S 455. Feminist Research Methods 3 cr.  
Feminist research practices and methodologies utilized in various disciplines. Definitions of research, what constitutes valid inquiry, how research can be feminist, and what it means to do interdisciplinary work.
- W S 459. Advanced Issues in Sex and Gender 3 cr.  
Same as SOC 459.
- W S 461. Women's Studies: Independent Study 3 cr.  
Individual study of selected topic and writing of research paper. Prerequisite: consent of instructor. May be repeated for a maximum of 6 credits.
- W S 463. Communication and Gender 3 cr.  
Same as COMM 463.
- W S 465. Sex, Gender and the Body 3 cr.  
Examines forces at work in defining and differentiating gender, race, sexuality. How ideas about what is 'natural' and 'normal' for men and women shifted over time. Considers different discourses shaping embodied experiences and categories of identity. Prerequisite(s): None.
- W S 468. Global Sexualities 3 cr.  
Generates a global context to focus on sexual identity and orientation, sexual identity politics, romantic relationships, patterns of sexual behavior, sexual regulation and the impact of different cultures on individual sexualities. Taught with WS 568. Crosslisted with: SOC 468
- W S 469. Gender and Sexuality in Hispanic Film 3 cr.  
The study of gender and sexual orientation issues in relation to identity as portrayed in Hispanic cinema. Taught in Spanish but assignments accepted in English. Crosslisted with: SPAN 469
- W S 471. Seminar in Feminist Theory 3 cr.  
Current feminist theory. Topic changes by semester. Course subtitled in the Schedule of Classes. Prerequisite: None
- W S 474. Gender in East Asian History 3 cr.  
Same as HIST 474.
- W S 481. Hate Crimes and Hate Groups 3 cr.  
Explores the phenomenon of hate-motivated violence. Examines the hate crime laws, organized hate groups and social theories attempting to explain violent hate.
- W S 482. Gender and Popular Culture 3 cr.  
Intensive study of the representations of gender in popular culture. Examines the historical, aesthetic, and cultural contexts of these representation and the various critical and theoretical lenses we use to understand them. Repeatable under different subtitles. Crosslisted with: ENGL 482
- W S 484. Women's Literature 3 cr.  
Intensive study of literature by women, in particular historical, aesthetic, cultural, or intellectual contexts. Repeatable under different subtitles. Crosslisted with: ENGL 481
- W S 485. Sex Crimes 3 cr.  
Dynamics of sex crimes for victims and offenders; plus consideration of the legal correction systems' response to sex crimes. Same as C J 485
- WATR- WATER UTILITIES**
- WATR 120. Introduction to Water Systems 3 cr.  
Introduction to and theory of groundwater sources, production, treatment, and distribution.

- WATR 130. Wastewater Collection and Basic Treatment Systems 3 cr.  
Introduction to wastewater characteristics, collection, and basic treatment operations.
- WATR 135. Sludge Handling 2 cr.  
Survey of sludge processing units and disposal. Includes aerobic and anaerobic digestion, thickening, conditioning, dewatering, land applications, and ocean dumping. Overview of current sludge regulations.
- WATR 140. Applied Water and Wastewater Math I 3 cr.  
Introduction to basic water and wastewater mathematics, flows through distribution networks and collection systems, and fundamentals of flow measurement. Prerequisite: CCDM 114N or equivalent.
- WATR 160. Systems Maintenance 4 cr. (2+4P)  
Basic tools, equipment, maintenance schedules, chlorinator troubleshooting, and chlorine safety. Hands-on training with valves, pumps, meters and chlorination equipment.
- WATR 165. Backflow Prevention 3 cr. (2+2P)  
Theory of operation of backflow prevention devices and their application. Backflow devices including double check, reduced pressure, and pressure vacuum breakers will be tested for proper operation. Prerequisites: WATR 120 and WATR 140, or consent of instructor.
- WATR 170. Confined Space Entry 2 cr.  
Regulations concerning confined spaces, identification of confined spaces and hazard identification. Hands-on use of SCBA, other entry equipment and atmospheric testing.
- WATR 175. Programmable Logic Controllers 2 cr.  
This course will introduce students to electrical safety, theory, and the function, operations, programming and troubleshooting of the PLC controlling common electrical components utilized in control circuits associated with the water and wastewater industry. Restricted to: Community colleges.
- WATR 180. Water Chemistry 3 cr.  
Basic chemistry with applications to water and wastewater analysis. Prerequisite: CCDM 114N or consent of instructor.
- WATR 182. Water Chemistry Analysis 1 cr. (3P)  
Beginning water and wastewater laboratory analysis including gravimetric, volumetric, and quality control techniques. Prerequisite: CCDM 114N or equivalent or consent of instructor.
- WATR 190. Water and Wastewater Microbiology 3 cr.  
Overview of microorganisms associated with water and wastewater. Growth and reproduction, energy production, and methods of counting. Prerequisite: WATR 130, WATR 180, or consent of instructor.
- WATR 192. Water and Wastewater Microbiological Analysis 1 cr. (3P)  
Introduction to water and wastewater treatment operational tests such as BODs, solids testing, activated sludge control tests, use of microscope, and bacteriological techniques. Prerequisites: WATR 130 and WATR 182, or consent of instructor.
- WATR 200. Cooperative Experience 3-5 cr.  
On-the-job training/work experience with municipalities or industries, working in water or wastewater treatment plants, high purity water plants, industrial waste plants, distribution systems, or wastewater collection systems. Prerequisite: consent of instructor. May be repeated for a maximum of 5 credits. Graded S/U.
- WATR 220. Water Treatment Systems 3 cr.  
Theory of water systems operation including surface water treatment, flocculation, sodium zeolite softening, corrosion control, iron removal, various filtration methods, and overview of SDWA. Prerequisites: WATR 180 and WATR 182 or consent of instructor.
- WATR 222. Water Systems Operation 1 cr. (3P)  
Operations of various water treatment systems including surface water treatment, sodium zeolite softeners, and various filtration methods. Prerequisite: WATR 220 or consent of instructor.
- WATR 230. Advanced Wastewater Treatment 4 cr.  
Calculations and operations involved in wastewater and water reclamation plants. Prerequisites: WATR 140, WATR 190, and WATR 192, or consent of instructor.
- WATR 232. Wastewater Systems Operations 1 cr. (3P)  
Operation of pretreatment, primary, and biological treatment units. Prerequisite: WATR 230 or consent of instructor.
- WATR 240. Advanced Water and Wastewater Math II 3 cr. (2+2P)  
Advanced water and wastewater mathematics. Flow measurement. Systems head and pump curves. Prerequisites: WATR 140.
- WATR 250. Municipal Systems Management 4 cr.  
Management of water utility systems including laws, finance, records, and safety. Prerequisites: WATR 120, WATR 130.
- WATR 255. Special Individualized Problems in Water Technology 1-4 cr.  
Individual studies in areas directly related to water technology. Prerequisite: consent of instructor.
- WATR 257. Industrial Pretreatment 3 cr.  
Industrial pretreatment regulations, program development and implementation, including correspondence, surveys and inspections. Overview of industrial wastewater treatment. Prerequisites: WATR 120, WATR 130.
- WATR 270. Special Topics 1-4 cr.  
Specific subjects to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits.
- WATR 275. Certification Review 3 cr.  
Review of water and wastewater plant operations and laws in preparation for state certification exams. Prerequisites: WATR 220, WATR 230, and WATR 240.
- WATR 285. High Purity Water Treatment Systems 3 cr.  
Principles of high purity water production including microfiltration, ultrafiltration, reverse osmosis, and deionization. Prerequisite: WATR 220.
- WATR 286. Advanced High Purity Water Systems Operation 3 cr.  
Operations of high purity water systems including ultrafiltration, reverse osmosis and deionization. Prerequisite: WATR 220. Corequisite: WATR 285.
- WATR 287. Advanced Water Chemistry Analysis 3 cr. (6P)  
Sampling techniques, analysis, and evaluation of potable water contaminants using gravimetric, volumetric, spectrophotometric, and other instrumentation methods. Prerequisite: WATR 285 or consent of instructor.
- WATR 290. Advanced Wastewater Microbiology and Chemistry 3 cr.  
Covers NPDES permits and DMR calculations and reporting; 503 sludge regs, including pathogen and vector attraction reduction and pollutants; wetlands, composting, and wastewater treatment ponds microbiology; activated sludge bulking and foaming microbiology and treatment; and use of selector to remove nutrients and prevent the growth of filamentous bacteria. Prerequisite: WATR 190, WATR 192.
- WATR 292. Advanced Wastewater Analysis 3 cr. (6P)  
Covers sampling techniques, analysis, and evaluation of wastewater contaminants using gravimetric, volumetric, spectrophotometric, and other instrumentation methods. Prerequisite: WATR 190 and WATR 192.

### WELD- WELDING TECHNOLOGY

- WELD 100. Structural Welding I 6 cr. (3+6P)  
Development of basic skills in SMAW, OFC, and OFW in accordance with the AWS entry-level welder program.
- WELD 101. Fundamentals of Welding 3 cr.  
Set-up and adjustment of ARC and oxyacetylene equipment. Welding safety procedures and terminology. Skill development in laying weld beads with various patterns, positions, and processes.
- WELD 102. Welding Fundamentals 3 cr. (2+2P)  
Survey of welding and cutting processes for nonmajors. Classroom instruction and laboratory work with OFC/OFW, SMAW, GMAW, FCAW, and plasma arc cutting.
- WELD 105. Introduction to Welding 3 cr.  
Welding practices, procedures, and terminology. Welding safety, equipment types, electrode types in usage, joint design and testing procedures.
- WELD 110. Blueprint Reading (Welding) 3 cr.  
Interpretation of prints related to welding. Emphasis on AWS standard symbols for welding, brazing, and nondestructive examination.
- WELD 115. Structural Welding II 6 cr. (3+6P)  
Continuation of WELD 100. Emphasis on AWS entry and advanced level welder skills with SMAW, including all-position welding with mild and stainless steel electrodes. Plasma arc and air-carbon arc cutting, metallurgy, heat treatment, and weld defects. Prerequisite: WELD 100.
- WELD 118. Technical Math for Welders 3 cr. (2+3P)  
Geometry, algebra, and basic arithmetic pertaining to applications in the welding trades.
- WELD 120. Basic Metallurgy 3 cr.  
Properties of ferrous and nonferrous materials. Service conditions and heat treatment of metals related to welding trade. Prerequisites: WELD 100 or consent of instructor.



- WELD 125. Introduction to Pipe Welding 3 cr. (2+2P)  
Pipe fit-up and welding techniques for pipe fittings and pipe weld joint using SMAW, GMAW, and GTAW. Out-of-position fit-up and welding of pipe. Prerequisites: WELD 100, WELD 130, and WELD 140, or consent of instructor.
- WELD 126. Industrial Pipe Welding 3 cr.  
Enhancement of WELD 125. Development of more advanced pipe welding skills. Prerequisites: WELD 110, WELD 130 and WELD 140. Corequisite: WELD 125.
- WELD 130. Introduction to GMAW MIG 3 cr. (2+2P)  
Development of basic skills with gas metal arc welding (MIG) in accordance with AWS entry-level welder objectives. Wire electrodes, shielding/purge gases, and modes of metal transfer.
- WELD 140. Introduction to GTAW TIG 3 cr. (2+2P)  
Development for basic skills with gas tungsten arc welding (TIG) in accordance with AWS entry/advanced welder objectives. Welding mild steel, tungsten electrode preparation, filler wire selection, and equipment set-up.
- WELD 150. Pipe Welding II 3 cr. (2+2P)  
Continuation of WELD 125; with fillet and groove welded joints in a horizontal fixed and 45-degree fixed positions (5-F, 5-G, 6-F, 6-G). Prerequisite: WELD 125.
- WELD 151. Industrial Pipe Welding II 3 cr.  
Enhancement of WELD 150. Development of more advanced pipe welding skills. Emphasis on industry driven test. Prerequisites: WELD 125 and WELD 126. Corequisite: WELD 150.
- WELD 160. Introduction to SAW and FCAW 3 cr. (2+2P)  
Submerged arc and flux-cored arc welding. Demonstrations and practice with both hand-held and machine travel submerged arc welding (SAW). Flux-cored arc welding (FCAW) on mild steel plate and pipe.
- WELD 170. Welded Fabrication 3 cr. (1+4P)  
Development of fabrication skills including basic layout, measuring, and utilization of various welding processes including out-of-position welding. Use of common shop tools. Prerequisites: WELD 100, WELD 110, WELD 130, and OETS 104 or OETS 118.
- WELD 180. GTAW II 3 cr. (2+2P)  
Continuation of WELD 140. Development of more advanced GTAW skills. Emphasis on pipe welding with mild steel, stainless steel, and aluminum. Prerequisite: WELD 140 or consent of instructor.
- WELD 190. Welded Art 3 cr. (1+4P)  
Students explore the possibilities of welded art in the form of sculpture, jewelry, furniture and as a framework to support other art media. Offered as an elective for students who wish to create art using welding. Prerequisite: WELD 102 or consent of instructor.
- WELD 200. Structural Welding III 6 cr. (3+6P)  
Continued application of weld bead patterns and structural welded joints.
- WELD 201. Beginning GMAW and GTAW Processes 6 cr. (3+6P)  
Metal inert gas and tungsten inert gas welding processes with laboratory exercises designed to develop basic welding skills.
- WELD 202. Advanced Layout for Welders 4 cr. (3+2P)  
For welders and pipefitters desiring more layout knowledge and skill.
- WELD 205. Welding Equipment Maintenance 3 cr. (2+2P)  
Hands-on experience in the maintenance and repair of welding equipment, including welding machines and associate shop equipment, as well as the development of preventative maintenance programs. Basic safety, including MSDS and Right-to-Know will be introduced. Prerequisite(s): WELD 100, WELD 130, WELD 140, WELD 160. Restricted to: Community Colleges only.
- WELD 211. Welder Qualification 6 cr. (3+6P)  
Laboratory and classroom instruction on AWS and ASME Welder Performance Qualification Tests. All position plate and pipe techniques and tests for SMAW, GMAW, GTAW, FCAW, and SAW. Nondestructive and destructive examination methods. Basics of welding codes. Prerequisites: OETS 104 or OETS 118; and WELD 100, WELD 110, WELD 120, WELD 130, WELD 140, WELD 160 and WELD 180 or consent of instructor. Restricted to majors.
- WELD 221. Cooperative Experience I 1-6 cr.  
Supervised cooperative work program. Student is employed in an approved occupation and supervised and rated by the employer and instructor. Student will meet in a weekly class. Graded S/U. Prerequisites: WELD 100 or WELD 101 and consent of instructor. Restricted to majors.
- WELD 222. Cooperative Experience II 1-4 cr.  
Continuation of WELD 221. Graded S/U. Prerequisite: consent of instructor.
- WELD 225. Stainless Steel Welding 6 cr.  
A specialized training course for qualified, experienced welders who desire to meet certification requirements of ASME Section IX (American Society of Mechanical Engineers).
- WELD 230. Weld Testing 3 cr. (2+2P)  
Covers destructive and nondestructive examination methods used to test welds. Tensile, compression, bend, hardness, impact, visual, dye-penetrant, magnetic particle, ultrasound, and radiographic methods of testing/examination. Prerequisites: WELD 100, WELD 130, WELD 140, WELD 211, and CCDM 104N, or consent of instructor.
- WELD 255. Special Problems in Welding Technology 1-6 cr.  
Individual studies in areas of welding technology. Prerequisite: consent of instructor. May be repeated for a maximum of 12 credits.
- WELD 295. Special Topics 1-4 cr.  
Topics to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits.
- WERC 300. Introduction to Pollution Prevention and Its Application 3 cr.  
Investigates various approaches to industrial and domestic pollution prevention, waste minimization, and energy efficiency with emphasis on applications in the Southwest. Topics include: industrial case studies, energy conservation, environmental risk analysis, evaluating environmental performance, pollution prevention program development, training and education programs, funding sources, and economic impact.
- WERC 312. Emergency Response to Hazardous Material Incidents 2 cr.  
Same as E S 312, ET 312.
- WERC 330. Environmental Management Seminar I 1 cr.  
Survey of practical and new developments in environmental management field, hazardous and radioactive, waste management, energy, water, and related health issues, provided through a series of guest lectures and reports about on-going research. Restricted to: Main campus only. Cross-listed with: C E 330, CH E 330, E E 330, E S 330, E T 330, I E 330 and M E 330
- WERC 350. Introduction to Energy, Environment and Risk Assessment 3 cr.  
Presents the fundamentals of risks/benefits in energy and environmental issues. Also presents fundamentals of environmental, radiological and ecological risks from an applied perspective.
- WERC 381. Renewable Energy Technologies 3 cr. (2+3P)  
Renewable energy systems, including topics in thermal-solar, photovoltaic, wind, geothermal systems, and other current topics. Theory, practical applications, safety considerations and the economics of alternative renewable energy systems compared to conventional systems. Prerequisite(s): MATH 121G. Crosslisted with: E T 381
- WERC 382. Solar Energy Technologies 3 cr. (2+3P)  
Solar energy technologies, including topics in passive, solar thermal, and photovoltaic systems. Theory, practical applications, safety considerations and the economics of solar renewable energy systems compared to conventional systems. Prerequisite(s): MATH 121G. Crosslisted with: E T 382
- WERC 384. Wind and Water Energy Technologies 3 cr.  
Wind and Water energy technologies, including topics in small and large scale systems. Theory, practical applications, safety considerations and the economics of wind and water renewable energy systems compared to conventional systems. Same as ET 384. Prerequisite: MATH 121G.
- WERC 386. Sustainable Construction and Green Building Design 3 cr.  
Sustainable Building materials, methods, and techniques including green architect and design, codes, standards and Specifications. Same as ET 386. Prerequisite: MATH 121G.
- WERC 430. Environmental Management Seminar II 1 cr.  
Survey of practical and new developments in environmental management fields, hazardous and radioactive waste management, energy, water and related health issues, provided through a series of guest lectures and reports about ongoing research. Restricted to: Main campus only. Cross-listed with: C E 430, CH E 430, E E 430, E S 430, E T 430, I E 430 and M E 430
- WERC 466. Fuel Cell and Hydrogen Technology 3 cr.  
Same as Ch E 466. Prerequisites: CHEM 111G and PHYS 215G
- WERC 471. Health Physics 4 cr.  
Introduction to Radiation Protection, Radiation/Radioactivity, Radioactive Decay/Fission, Interaction of Radiation and Matter, Biological Effects of Radiation, Radiation Measurement/Statistics, Sampling for Radiation Protection Purposes, Radiation Dosimetry, Environmental Transport, Radiation Protection Guidance, External Radiation Protection, Internal Radiation Protection, Waste Management, and Hazards Analysis and Control. Prerequisite(s): MATH 192G and CH E 470. Crosslisted with: CH E 471
- WERC 473. Nuclear Regulations and Compliance Practices 3 cr.  
Same as CH E 473. Consent of instructor required. Prerequisite(s): MATH 191G and (CHEM 111G or Chem 115). Crosslisted with: CH E 473



# SPECIAL COURSES

---

**COURSES OFFERED ONE TIME ONLY, 2012-2013. These courses may be permanently added to the catalog at the request of the department.**

ANSC 308. Horse Evaluation .....	4 cr.
AUTO 208. Introduction to Alternative Fueled Vehicles .....	3 cr.
C D 504. Language Disorders .....	3 cr.
C D 506. Clinical Procedures .....	3 cr.
C D 587. Cleft Palate and Syndromes .....	3 cr.
CAST 303. Prevention, Trauma Informed Treatment and Advocacy .....	3 cr.
HNDS 562. Dietetic Internship: Supervised Practice in Community Nutrition .....	1-3 cr.
HNDS 564. Dietetic Internship: Supervised Practice in Food Service Management.....	1-4 cr.
HOST 239. Introduction to Hotel Management.....	3 cr.
M SC 350. Leadership Internship II.....	1-6 cr.
MATH 540. Directed Reading .....	1-6 cr.
MKTG 181. Level 1, PGA's PGM Education Program (Part 1).....	3 cr.
MKTG 280. Level 1, PGA's PGM Education Program (Part 2).....	3 cr.
MKTG 354. Sports Marketing.....	3 cr.
NA 104. Certified Nursing Assistant Fundamentals.....	4 cr.
NA 110. Electrocardiogram Technician Basic .....	4 cr.
RADT 190. CT Equipment and Methodology.....	3 cr.
RADT 208. Clinical I.....	3 cr.
RGSC 618. Interdisciplinary Modeling: Water & Climate Issues.....	3 cr.
SP M 411. General Medical Conditions and Pharmacology in Athletic Training .....	4 cr.

# PERSONNEL

## Administration

### PRESIDENT'S OFFICE

- Couture, Barbara**, President; Ph.D., 1980, University of Michigan-Ann Arbor
- Kite, Bruce R.**, General Counsel; JD, 1978, Chicago-Kent College of Law
- Woods, Benjamin E.**, Sr VP Ext Rel/Chief Staff; MBA, 1979, Rensselaer Polytechnic Institute
- Prescott, Ruth A.**, Executive Assc; JD, 1990, University of Florida

### PROVOST/ACADEMIC

- Wilkins, Wendy K.**, Executive VP and Provost ; Ph.D., 1977 University of California - Los Angeles
- Derlin, Roberta L.**, Assc Provost; Ph.D., 1994, University of Wisconsin
- Fant, Gregory**, Assc VP & Deputy Provost; Ph.D., 1996, University of Arizona

### VICE PRESIDENTS/VICE PROVOSTS

- Chaitanya, Vimal**, VP Research; Ph.D., 1984, Johns Hopkins University
- Cooper, Shaun H.**, Assc VP, Info Tech; Ph.D., 2000, New Mexico State University
- Howard, Maureen**, Assc VP, Univ Comm/Mkting Svcs; MBA, 1980, Fordham University
- Montoya, Bernadette R.**, VP Student Affairs/Enrl Mgmt; Ed.D., 2000, University of New Mexico
- Prescott, Dennis**, VP Univ Advancement
- Throneberry, Angela M.**, Sr VP Admin & Fin; BACCT, 1987, New Mexico State University, C.P.A.

### DEANS

- Adera, Tilahun**, Dean, Health and Social Services College; Ph.D., 1988, Oregon State University
- Carruthers, Garrey E.**, Dean/VP Econ Devt, Business College; Ph.D., 1968, Iowa State University
- Catlett, Lowell B.**, Dean, Agriculture and Home Econ College; Ph.D., 1980, Iowa State University
- Eamon, William C.**, Dean, Honors Pgm and Crimson Scholars; Ph.D., 1977, University of Kansas
- Jacquez, Ricardo B.**, Dean, Engineering College; Ph.D., 1976, Virginia Polytech-Blacksburg
- Lacey, Linda**, Dean, Graduate School; Ph.D., 1981, Cornell University
- Morehead, Michael A.**, Dean, Education College; Ed.D., 1978, University of Missouri - Columbia
- Slaton, Christa D.**, Dean, Arts and Sciences College; Ph.D., 1990, University of Hawaii - Manoa

- Titus, Elizabeth A.**, Dean, Library; Ph.D., 1998, Northern Illinois University

### ASSOCIATE DEANS

- Boberg, Kevin B.**, Associate Dean/Director, Business College; Ph.D., 1983, Penn State University
- Bond-Maupin, Lisa J.**, Assc Dean, Arts & Sci, Arts and Sciences College; Ph.D., 1992, Arizona State University
- Boren, Jon C.**, Associate Dean/Director Cooperative Extension Service; Ph.D., 1995, Oklahoma State University - Stillwater
- Brook, Kathleen**, Associate Dean, Business College; Ph.D., 1976, University of Texas-Austin
- Brown, Jeffrey P.**, Assc Dean, Arts & Sci, Arts and Sciences College; Ph.D., 1979, University of Illinois in Urbana
- Cooper, Sonya L.**, Assc Dean, Eng, Engineering College; Ph.D., 2000, New Mexico State University
- Libbin, James D.**, Associate Dean/Director, Agriculture and Home Econ College; Ph.D., 1982, Iowa State University
- Mitchell, Martha C.**, Assc Dean, Eng, Engineering Research Ctr; Ph.D., 1996, University of Minnesota
- Pollack, Beth**, Assc Dean, Arts & Sci, Arts and Sciences College; Ph.D., 1988, University of California - Santa Barbara
- Rhodes, Robert**, Associate Dean, Education College; Ph.D., 1994, University of Northern Colorado
- Thompson, David C.**, Associate Dean/Director, Agricultural Experiment Station; Ph.D., 1988, Colorado State University
- Van Winkle, Kenneth D.**, Associate Dean, Development, Arts and Sciences College; DMA, 1994, University of Oregon
- Wagner, Donna L.**, Associate Dean, Health and Social Services College
- Wiburg, Karin**, Associate Dean/Director, Education College; Ed.D., 1987, Cal State University

## Tenured and Tenure-Track Faculty

- Abbott, Laurie**, Assc Prof, Animal and Range Sciences; Ph.D. 1999; University of Arizona
- Abdul Rahman**, Mohd F., Ext Specialist, Cooperative Extension Service; Ph.D., 2008, Ohio State University
- Acharya, Ram**, Assc Prof, Ag Economics and Ag Business; Ph.D., 1997, Auburn University
- Ackleson, Jason M.**, Assc Prof, Government; Ph.D., 2001, London School of Economics And

- Adams, Eve M.**, Assc Prof, Counseling and Educational Psy; Ph.D., 1988, Ohio State University
- Adkisson, Richard V.**, Acad Dept Head, Economics and International Busines; Ph.D., 1995, Univ of Nebraska - Lincoln
- Adler, Terry R.**, Assc Prof, Management, Ph.D., 1996, University of Cincinnati
- Alexander, Rani T.**, Professor, Anthropology; Ph.D., 1993, University of New Mexico
- Allen, John R.**, Ext Agric Agent, Cooperative Extension Service; MA, 2010, New Mexico State University
- Allison, Christopher D.**, Ext Dept Head, Cooperative Extension Service; Ph.D., 1978, Texas A & M Univ-Coll Station
- Almjeld, Jennifer M.**, Asst Prof, English; Ph.D., 2008, Bowling Green State University
- Alt, Jerry A.**, Professor, Music; DMA, 1985, Arizona State University
- Amato, Jeffrey M.**, Professor, Geological Sciences; Ph.D., 1995, Stanford University
- Amatya, Anup K.**, Asst Prof, Health Science; Ph.D., 2011, Univ of Illinois in Chicago
- Andersen, Mark C.**, Professor, Fishery and Wildlife Sciences; Ph.D., 1987, University of Washington
- Andersen, Paul K.**, Assc Acad Dept Head, Chemical Engineering; Ph.D., 1987, Univ of California - Berkeley
- Anderson, Jeffrey L.**, Ext Agric Agent, Cooperative Extension Service; MS, 2002, New Mexico State University
- Andrews, Martha S.**, Assc Prof, Library Archives and Special Collec; MLS, 1999, University of Pittsburgh - Pit
- Angadi, Sangamesh**, Assc Pro, Ag Science Ctr at Clovis; Ph.D., 2001, Univ of Manitoba/Canada
- Arakawa, Fumiyasu**, Asst Prof, Anthropology; Ph.D., 2006, Washington State University
- Armfield, Greg G.**, Asst Prof, Communications Studies; MA, 2000, Wichita State University
- Arroyos, Elsa C.**, Assc Prof, Counseling and Educational Psy; Ph.D., 2002, University of Iowa
- Arterburn, Jeffrey B.**, Professor, Chemistry and Biochemistry; Ph.D., 1990, University of Arizona
- Ashcroft, Nicholas K.**, Ext Specialist, Cooperative Extension Service; Ph.D., 2009, New Mexico State University
- Ashigh, Jamshid**, Ext Specialist, Cooperative Extension Service; Ph.D. 2007
- Ashley, Ryan L.**, Asst Prof, Animal and Range Sciences; Ph.D., 2007, Colorado State University
- Azadegan, Arash**, Asst Prof, Management; Ph.D., 2008, Arizona State University
- Baca, Jacqueline S.**, Ext Home Econ 4H, Cooperative Extension Service; MA, 2002, New Mexico State University
- Bader, Jeff R.**, Director, Northern District, Cooperative Extension Service; EDD, 2004, New Mexico State University

- Bae, Youkyung**, Asst Prof, Special Ed and Comm Disorders; Ph.D., 2009, Univ of Illinois in Urbana
- Baggett, Patricia**, Professor, Mathematical Sciences; Ph.D., 1977, Univ of Colorado - Boulder
- Bailey, Derek W.**, Range Science Coordinator, Animal and Range Sciences; Ph.D., 1988, Colorado State University
- Bailey, Donovan**, Asst Prof, Biology; Ph.D., Cornell University
- Baker, Nancy V.**, Professor, Government; Ph.D., 1989, Tulane University of Louisiana
- Baker, Sarah**, Asst Prof, Library Reference and Research Svcs; MLS, 2005, San Jose State University
- Ballyk, Mary M.**, Asst Prof, Mathematical Sciences; Ph.D., 1994, Mc Master University-Canada
- Bandini, Paola**, Asst Prof, Civil and Geological Engineering; Ph.D., 2002, Purdue University - West Lafay
- Baptiste, H. P.**, Professor, Curriculum and Instruction; EDD, 1968, Indiana University - Bloomingt
- Barany, Ernest**, Asst Acad Dept Head, Mathematical Sciences; Ph.D., 1988, Ohio State University
- Barello, Julia M.**, Professor, Art; MFA, 1992, University of Wisconsin - Milw
- Barnett-Queen, Timothy R.**, Asst Prof, Social Work; Ph.D., 1995, University of South Carolina -
- Barney, David D.**, Asst Prof, Social Work; Ph.D., 1999, University of Kansas
- Barquet, Jesus J.**, Professor, Languages and Linguistics; Ph.D., 1990, Tulane University of Louisiana
- Barraza, Sandra K.**, Ext Agric Agent, Cooperative Extension Service; MS, 1987, New Mexico State University
- Bartley, Sharon J.**, Asst Prof, Family and Consumer Sciences; Ph.D., 1993, University of Tennessee - Knox
- Bawazir, A. S.**, Asst Prof, Civil and Geological Engineering; Ph.D., 2000, New Mexico State University
- Beasley, Jeffrey S.**, Acad Dept Head, Engineering Technology; Ph.D., 1995, New Mexico State University
- Beck, Susan E.**, Professor, Library Reference and Research Svcs; MA, 1990, Ohio University - Athens
- Beckler, Patricia A.**, Professor, Social Work; Ph.D., 2003, Case Western Reserve Univ
- Bejarano, Cynthia L.**, Asst Prof, Criminal Justice; Ph.D., 2001, Arizona State University
- Belcher, Glenda A.**, Ext Home Econ, Cooperative Extension Service; MA, 2001, New Mexico State University
- Benefit, Brenda R.**, Professor, Anthropology; Ph.D., 1987, New York University
- Benson, Philip G.**, Professor, Management; Ph.D., 1982, Colorado State University
- Berman, Bruce**, Asst Prof, Journalism and Mass Communications; MA, 1973, University of Oklahoma - Norman
- Berning, Joseph M.**, Asst Prof, Human Perf Dance & Recreation; Ph.D., 2003, Univ of Nebraska - Lincoln
- Bernstein, Marvin H.**, Professor, Biology; Ph.D., 1970, Univ of California - Los Angel
- Bezhanishvili, Guram**, Professor, Mathematical Sciences; Ph.D., 1998, Tokyo Inst of Tech-Tokyo
- Billiot, Mary J.**, Asst Prof, Accounting and Information Systems; Ph.D., 1997, Mississippi State University
- Bishop, Brenda K.**, Director, County Program, Cooperative Extension Service; MS, 1989, New Mexico State University
- Bishop, James W.**, Asst Prof, Management; Ph.D., 1995, Virginia State University
- Bittner, Laura**, Ext Home Econ, Cooperative Extension Service; MS, 1996, Utah State University
- Blair, Robert G.**, Asst Prof, Social Work; Ph.D., 1996 University of Utah
- Blanch, Gregory**, Asst Prof, Hotel Restaurant and Tourism Mgt; Ph.D., 1996, Claremont Grad School/Calif
- Blank, Larry R.**, Asst Prof, Economics and International Business; Ph.D., 1994, University of Tennessee - Knox
- Bloomquist, Priscilla C.**, Professor, Hotel Restaurant and Tourism Mgt; Ph.D., 1995, New Mexico State University
- Bock, Margaret A.**, Professor, Family and Consumer Sciences; Ph.D., 1983, Kansas State University
- Boecklen, William**, Professor, Biology; Ph.D., 1987, Northern Arizona University
- Boeing, Wiebke J.**, Asst Prof, Fishery and Wildlife Sciences; Ph.D., 2002, Louisiana St Univ-Baton Rouge
- Boham, Mikaela**, Asst Prof, Human Perf Dance & Recreation; MS, 2007, Boise State University
- Boje, David M.**, Professor, Management; Ph.D., 1979, University of Illinois
- Borah, Deva K.**, Asst Prof, Klipsch Sch of Elect Computer Eng; Ph.D., 1999, Australian Nat. Univ.
- Borchert, Laroy H.**, Professor, Music; DMA, 1991, Florida State University
- Borges, Wanda**, Asst Prof, Nursing; DSCI, 2004, Univ of Texas Health Center
- Bosland, Paul**, Professor, Plant and Environmental Sciences; Ph.D., 1985, University of Wisconsin - Madison
- Bosman, Ellen M.**, Dept Head, Library, Library Technical Services; MLS, 1991, Indiana University - Bloomington
- Boucheron, Laura E.**, Asst Prof, Klipsch Sch of Elect Computer Eng; Ph.D., 2008, Univ of California - Santa Barbara
- Boyse, Carol D.**, Dept Head, Library, Library Systems; MALS, 1973, Univ of Michigan-Ann Arbor
- Bradburd, Russell**, Asst Prof, English; MFA, 2002, New Mexico State University
- Brahma, Sukumar**, Asst Prof, Klipsch Sch of Elect Computer Eng; Ph.D., 2003, Clemson University
- Bronstein, Jamie L.**, Professor, History; Ph.D., 1996, Stanford University
- Brooks, Nathan M.**, Asst Prof, History; Ph.D., 1989, Columbia University - Columbia
- Brown, Christopher P.**, Acad Dept Head, Geography; Ph.D., 1998, Univ of California - Santa Barbara
- Brown, Juana W.**, Director, County Program, Cooperative Extension Service; MA, 2008, Western New Mexico University
- Brown, Monica**, Asst Prof, Special Ed and Comm Disorders; Ph.D., 2001, University of Nevada-Las Vegas
- Brown, Thomas K.**, Acad Dept Head, Art; MFA, 1987, University of Pennsylvania
- Buenemann, Michaela**, Asst Prof, Geography; Ph.D., 2007, University of Oklahoma - Norman
- Bugbee, Fred B.**, Asst Prof, Music; Ph.D., 2000, Eastman School of Music
- Bundy, Charles S.**, Asst Prof, Entomology Plant Path and Weed Sci; Ph.D., 1999, University of Georgia
- Burcham, Lon N.**, Asst Prof, Animal and Range Sciences; MS, 1971, Univ of Arkansas Fayetteville
- Burkardt, Matthias R.**, Professor, Physics; Ph.D., 1989, University of Erlangen - Germany
- Burnham, Christopher C.**, Professor, English; Ph.D., 1980, University of Rhode Island
- Butcher, Eric A.**, Asst Prof, Mechanical Engineering; Ph.D., 1997, Auburn University
- Butler, Gregory S.**, Asst Prof, Government; Ph.D., 1989, Catholic University of America
- Byford, Ronnie L.**, Ext Dept Head, Bio Security And Food Safety Center; Ph.D., 1984, Oklahoma State Univ-Stillwater
- Cahill, Elizabeth**, Asst Prof, Curriculum and Instruction; Ph.D., 1994, Kent State University - Kent
- Cai, Chunpei**, Asst Prof, Mechanical Engineering; Ph.D., 2005, Univ of Michigan-Ann Arbor
- Calk, Russell**, Asst Prof, Accounting and Information Systems; Ph.D., 1997, Oklahoma State Univ-Oklahoma
- Campbell, Carol**, Asst Prof, Geography; Ph.D., 2005, Univ of California - Los Angeles
- Cantrell, Ruth**, Professor, Theatre Arts; MFA, 1978, Trinity University
- Cao, Huiping**, Asst Prof, Computer Science; Ph.D., 2007
- Castillo, Maria G.**, Asst Prof, Biology; Ph.D., 2005, University of Wisconsin - Madison
- Chaffin, Lonnie W.**, Acad Dept Head, Music; Ph.D., 2001, Texas Tech University
- Chaiken, Miriam**, Acad Dept Head, Anthropology; Ph.D., 1983, Univ of California - Santa Barbara
- Chamberlin, Barbara A.**, Asst Prof, Agricultural Communications; Ph.D., 2003, Univ of Virginia - Charlottesville
- Chanover, Nancy J.**, Asst Prof, Astronomy; Ph.D., 1997, New Mexico State University
- Chavez, Carolyn I.**, Asst Prof, Management; Ph.D., 2000, Suny in Albany
- Chavez, Melinda A.**, Asst Prof, Family and Consumer Sciences; Ph.D., 2005, New Mexico State University
- Chavez, Rudolfo C.**, Professor, Curriculum and Instruction; EDD, 1980, New Mexico State University
- Cheng, HsiuLan**, Asst Prof, Counseling and Educational Psy; Ph.D., 2006, University of Missouri - Columbia
- Chinn, Kathleen**, Asst Prof, Special Ed and Comm Disorders; Ph.D., 1997, Lamar University in Texas
- Cho, Sang Yeon**, Asst Prof, Klipsch Sch of Elect Computer Eng; Ph.D., 2003, Georgia Institute of Tech
- Choo, Vincent K.**, Asst Prof, Mechanical Engineering; Ph.D., 1982, University of Liverpool

- Christman, Dana E.**, Acad Dept Head, Educational Management and Dev; EDD, 2000, Oklahoma State Univ-Stillwater
- Chun, Heejung**, Asst Prof, Counseling and Educational Psy; Ph.D., 2007, University of Missouri - Columbia
- Chung, Hwiman**, Acad Dept Head, Journalism and Mass Communications; Ph.D., 2001, University of North Carolina
- Churchill, Christopher W.**, Asst Prof, Astronomy; Ph.D., 1997, Univ of California - Santa Cruz
- Cibils, Andres F.**, Asst Prof, Animal and Range Sciences; Ph.D., 1999, Colorado State University
- Clary, Cynda**, Acad Dept Head, Agricultural and Extension Educ; Ph.D., 1993, North Carolina State University
- Clason, Dennis L.**, Asst Prof, Economics and International Busines; Ph.D., 1987, Kansas State University
- Clavel, Joseph B.**, Director, County Program, Cooperative Extension Service; MS, 2000, West Texas A & M University
- Cleveland, Timothy**, Professor, Philosophy; Ph.D., 1986, Johns Hopkins University
- Cohen, Marcus S.**, Asst Prof, Mathematical Sciences; Ph.D., 1977, University of Chicago
- Collins, Margaret M.**, Ext Home Econ, Cooperative Extension Service; Ph.D., 2006
- Conley, Edgar G.**, Asst Prof, Mechanical Engineering; Ph.D., 1986, Michigan State University
- Cook, Jeanine**, Asst Prof, Klipsch Sch of Elect Computer Eng; MS, 1996, University of Colorado
- Cook, Jonathan E.**, Asst Prof, Computer Science; Ph.D., 1996, University of Colorado - Boulder
- Cortes, Douglas D.**, Asst Prof, Civil and Geological Engineering; Ph.D., 2010, Georgia Institute of Tech
- Cowie, James R.**, Professor, Psychology; Ph.D. 1990, Univ of Strathclyde/Glasgow
- Cowley, David E.**, Asst Prof, Fishery and Wildlife Sciences; Ph.D., 1987, University of Wisconsin - Madison
- Cox, H. W.**, Director, County Program, Cooperative Extension Service; MA, 1996, New Mexico State University
- Cramer, Christopher**, Professor, Plant and Environmental Sciences; Ph.D., 1997, North Carolina State University
- Creamer, Rebecca J.**, Professor, Entomology Plant Path and Weed Sci; Ph.D., 1989, Univ of California - Davis
- Creider, Laurence S.**, Interim Dept Head, Library Archives and Special Collec; Ph.D., 1979, Yale University
- Creusere, Charles D.**, Professor, Klipsch Sch of Elect Computer Eng; Ph.D., 1993, Univ of California - Santa Barbara
- Cronin, Kathleen A.**, Asst Prof, Special Ed and Comm Disorders; Ph.D., 2008, Univ of California - Riverside
- Crowley, Joan E.**, Asst Prof, Criminal Justice; Ph.D., 1978, Univ of Michigan-Ann Arbor
- Cull, Ryan**, Asst Prof, English; Ph.D., 2007, Univ of Illinois in Urbana
- Cully, Craig M.**, Asst Prof, Art; MFA, 1999, University of Arizona
- Curtiss, Jennifer**, Asst Prof, Biology; Ph.D., 1997, University of Colorado - Boulder
- Czerniak, Robert J.**, Professor, Geography; Ph.D., 1979, University of Colorado - Boulder
- Daily, Bonnie F.**, Professor, Management; Ph.D., 1991, University of Missouri
- Daniel, David**, Asst Prof, Economics and International Busines; Ph.D., 1992, Southern Methodist University
- Davies, Cindy S.**, Ext Home Econ, Cooperative Extension Service; MA, 2009, New Mexico State University
- Dawe, Angus L.**, Asst Prof, Biology; Ph.D., 1996, University of Tennessee - Knox
- Dawood, Muhammed**, Asst Prof, Klipsch Sch of Elect Computer Eng; Ph.D., 2001, Univ of Nebraska - Lincoln
- De Blassie, Richard D.**, Professor, Mathematical Sciences; Ph.D., 1984, Massachusetts Inst of Tech
- De Boyrie, Maria E.**, Asst Prof, Finance; Ph.D., 1995, Florida International Univ
- De La Rosa, Ivan A.**, Asst Prof, Social Work; Ph.D., 1993, Univ of Michigan-Ann Arbor
- De Necochea, Gladys**, Asst Prof, Counseling and Educational Psy; Ph.D., 1988, Univ of California - Santa Barbara
- Dean, Teresa T.**, Ext 4H Agent, Cooperative Extension Service; BS, 2001, New Mexico State University
- Dean, Tom L.**, Director, County Program, Cooperative Extension Service; MS, 2001, New Mexico State University
- Del Campo, Diana S.**, Ext Specialist, Cooperative Extension Service; Ph.D., 1983, Univ of Michigan-Ann Arbor
- Deleon, Phillip L.**, Professor, Klipsch Sch of Elect Computer Eng; Pd.D., 1995, University of Colorado - Boulder
- DeMers, Michael N.**, Professor, Geography; Ph.D., 1985, University of Kansas
- Deng, Shuguang**, Professor, Chemical Engineering; Ph.D., 1996, University of Cincinnati
- Deshors, Sandra C.**, Asst Prof, Languages and Linguistics; Ph.D., 2011
- Desmond, Martha J.**, Acad Dept Head, Fishery and Wildlife Sciences; Ph.D., 1997, Univ of Nebraska - Lincoln
- Devall, Esther L.**, Interim Acad Dept Head, Family and Consumer Sciences; Ph.D., 1990, University of Georgia
- Diaz Avilez, Violeta**, Asst Prof, Finance; Ph.D., 2011, Univ of Texas-Pan American
- Dickson, Ginger**, Asst Prof, Counseling and Educational Psy; Ph.D., 2002, University of Iowa
- Diemer, Joel A.**, Professor, Ag Economics and Ag Business; Ph.D., 1972, Colorado State University
- Dolgov, Igor**, Asst Prof, Psychology; Ph.D., 2009, Arizona State University
- Dominguez, Ramon**, Asst Prof, Educational Management and Dev; Ph.D., 1986, New Mexico State University
- Dominguez, Thomas**, Ext Agric Agent, Cooperative Extension Service; MAG, 2003, Sul Ross State University
- Dorfman, Peter W.**, Professor, Management; Ph.D., 1972, Univ of Maryland - College Park
- Dormody, Thomas J.**, Professor, Agricultural and Extension Educ; Ph.D., 1989, Cornell University
- Downes, Cara M.**, Asst Prof, Economics and International Busines; Ph.D., 2003, University of New Mexico
- Drummond, Tracy W.**, Director, County Program, Cooperative Extension Service; MS, 1993, New Mexico State University
- Duffey, Janelle L.**, Ext 4H Agent, Cooperative Extension Service; Ph.D., 2006, New Mexico State University
- Dugas, Daniel P.**, Asst Prof, Geography; Ph.D., 1993, University of Oregon
- Duncan, Keith W.**, Ext Specialist, Cooperative Extension Service; Ph.D., 1981, Texas A & M Univ-Coll Station
- Duran, Robert J.**, Asst Prof, Criminal Justice; Ph.D., 2006, University of Colorado - Boulder
- Dylko, Ivan B.**, Asst Prof, Communications Studies; Ph.D., 2011, Ohio State University
- Eastman, Wanda A.**, Professor, Family and Consumer Sciences; Ph.D., 1990, Texas Womans University
- Egginton, Everett**, Professor, Curriculum and Instruction; Ph.D., 1974, Syracuse University
- Eiceman, Gary A.**, Professor, Chemistry and Biochemistry; Ph.D., 1978, University of Colorado - Boulder
- Elias, Steven M.**, Acad Dept Head, Management; Ph.D., 2001, Colorado State University
- Ellis, Lizbeth G.**, Acad Dept Head, Finance; JD, 1984, Arizona State University
- Encinias, A. M.**, Ext Specialist, Cooperative Extension Service; Ph.D., 2002, North Dakota State University
- Engelhardt, Michael**, Asst Prof, Physics; Ph.D., 1994, University of Erlangen - Germany
- Enomoto, Carl E.**, Professor, Economics and International Busines; Ph.D., 1982, Texas A & M Univ-Coll Station
- Erickson, Christopher A.**, Asst Prof, Economics and International Busines; Ph.D., 1989, Arizona State University
- Espy, Blake**, Asst Prof, Music; MM, 2006, Louisiana St Univ-Baton Rouge
- Falk, Constance L.**, Professor, Ag Economics and Ag Business; Ph.D., 1988, Oklahoma State Univ-Stillwater
- Fasenko, Gaylene M.**, Asst Prof, Animal and Range Sciences; Ph.D., 1996, North Carolina State University
- Fernald, Alexander G.**, Professor, Animal and Range Sciences; Ph.D., 1997, Colorado State University
- Fernandez, Ivelisse T.**, Asst Prof, Counseling and Educational Psy; Ph.D., 2003, University of Iowa
- Fine, Peter C.**, Asst Prof, Art; MFA, 2004, University of Arizona
- Finley, Clarence D.**, Director, County Program, Cooperative Extension Service; MA, 1990, New Mexico State University
- Finston, David R.**, Professor, Mathematical Sciences; Ph.D., 1983, Univ of California - San Diego
- Fisher, Derek S.**, Asst Prof, Creative Media; MS, 1998, Massachusetts Inst of Tech
- Flora, Jeanne**, Asst Prof, Communications Studies; Ph.D., 1998, University of Kansas
- Flores, Nancy**, Ext Specialist, Cooperative Extension Service; Ph.D., 2001, Kansas State University
- Flynn, Robert P.**, Ext Specialist, Cooperative Extension Service; Ph.D., 1995, Auburn University
- Forster-Cox, Sue**, Asst Prof, Health Science; Ph.D., 1995, University of New Mexico



- Fortin, Richard D.**, Professor, Finance; Ph.D., 1988, University of Kansas
- Fouillade, Claude J.**, Professor, Languages and Linguistics; Ph.D., 1978, University of New Mexico
- Fouli, Louiza**, Asst Prof, Mathematical Sciences; Ph.D., 2006, Purdue University - West Lafayette
- Fowler, John M.**, Professor, Ag Economics and Ag Business; Ph.D., 1978, Iowa State University
- Frank, Steven M.**, Professor, Engineering Technology; Ph.D., 1994, University of Maine - Orono
- Franz, Owida C.**, Ext Home Econ, Cooperative Extension Service; MS, 1987, Texas Tech University
- Franzak, Judith**, Asst Prof, Curriculum and Instruction; Ph.D., 2003, University of New Mexico
- Furth, Paul M.**, Asst Prof, Klipsch Sch of Elect Computer Eng; Ph.D., 1996, Johns Hopkins University
- Gallegos, Anne**, Professor, Special Ed and Comm Disorders; EDD, 1979, New Mexico State University
- Garay, Rebecca Joyce Z.**, Asst Prof, English; Ph.D., 2003, Arizona State University
- Garcia, Gabe V.**, Asst Prof, Mechanical Engineering; Ph.D., 1996, Texas A & M Univ-Coll Station
- Garcia, Herman S.**, Professor, Curriculum and Instruction; EDD, 1983, New Mexico State University
- Garcia, Jose M.**, Professor, Languages and Linguistics; Ph.D., 1991, University of Kansas
- Garcia, Jose Z.**, Asst Prof, Government; Ph.D., 1974, University of New Mexico
- Garcia-Bryce, Inigo**, Asst Prof, History; Ph.D., 2000, Stanford University
- Garland, Donald W.**, Asst Prof, Finance; JD, 1975, University of New Mexico
- Garlisch, John R.**, Ext Agric Agent, Cooperative Extension Service; MS, 2008, Univ of Illinois in Urbana
- Gegax, Douglas A.**, Professor, Economics and International Busines; Ph.D., 1984, University of Wyoming
- Genin, Joseph**, Professor, Mechanical Engineering; Ph.D., 1963, University of Minnesota - Twin
- Gibbs, William R.**, Professor, Physics; Ph.D., 1961, Rice University
- Gibson, Vera A.**, Ext 4H Agent, Cooperative Extension Service; MBA, 2007, New Mexico State University
- Giorgi, Tiziana**, Asst Prof, Mathematical Sciences; Ph.D., 1997, Purdue University - West Lafayette
- Glazewski, Krista D.**, Asst Prof, Curriculum and Instruction; Ph.D., 2003, Arizona State University
- Gleason, Jeanne B.**, Dept Head, Ag Info, Agricultural Communications; Ed.D., 1991, Virginia Polytech - Blacksburg
- Gnatkowski, Peter H.**, Director, County Program, Cooperative Extension Service; BS, 1972, New Mexico State University
- Goehring, Margaret**, Asst Prof, Art; Ph.D., 2000, Case Western Reserve University
- Goldberg, Natalie P.**, Ext Specialist, Cooperative Extension Service; Ph.D., 1990, University of Arizona
- Gonzalez, Alisa**, Asst Prof, Library Reference and Research Svcs; DLS, 2001, Kent State University - Kent
- Gopalan, Aravamudan S.**, Professor, Chemistry and Biochemistry; Ph.D., 1980, Ohio State University
- Gopalan, Champa S.**, Professor, Plant and Environmental Sciences; Ph.D., 1978, Ohio State University
- Gordon, Elizabeth A.**, Ext Agric Agent, Cooperative Extension Service; MA, 1987, New Mexico State University
- Goss, Ryan M.**, Asst Prof, Plant and Environmental Sciences; Ph.D., 2003, Univ of Nebraska - Lincoln
- Gould, William R.**, Professor, Economics and International Busines; Ph.D., 1994, North Carolina State University
- Grasswitz, Tessa R.**, Ext Specialist, Cooperative Extension Service; Ph.D., 1992, Univ of California - Riverside
- Gray, Samuel R.**, Asst Prof, Management; Ph.D., 1993, Texas A & M Univ-Coll Station
- Grayshield, Lisa**, Asst Prof, Counseling and Educational Psy; Ph.D., 1998, Utah State University
- Greene, Dana**, Asst Prof, Criminal Justice; Ph.D., 2005, City University of New York
- Greenfield, Richard**, Asst Prof, English; Ph.D., 2005, University of Denver
- Gregware, Peter R.**, Asst Prof, Criminal Justice; Ph.D., 1990, Arizona State University
- Grover, Kulbhushan**, Asst Prof, Plant and Environmental Sciences; Ph.D., 2008, Penn State Univ-All Campuses
- Guldan, Steven J.**, Professor, Ag Science Ctr at Alcalde; Ph.D., 1986, University of Minnesota
- Gunapala, Nirmala**, Asst Prof, Library Reference and Research Svcs; Ph.D., 1994, Univ of California - Davis
- Gustafson, John**, Acad Dept Head, Biology; Ph.D., 1994, Universitat Zurich
- Gutierrez, Paul**, Ext Specialist, Cooperative Extension Service; Ph.D., 1985, Oklahoma State Univ-Stillwater
- Guynn, Melissa J.**, Asst Prof, Psychology; Ph.D., 2001, University of New Mexico
- Hacker, Kenneth L.**, Professor, Communications Studies; Ph.D., 1986, University of Oregon
- Hadfield, O. D.**, Asst Prof, Curriculum and Instruction; Ed.D., 1986, Northern Arizona University
- Hagelin, Sarah**, Asst Prof, English; Ph.D., 2007, Univ of Virginia
- Hagevoort, Gerrit R.**, Ext Specialist, Ag Science Ctr at Clovis; Ph.D., 1993, Texas A & M Univ-Coll Station
- Hallford, Dennis M.**, Professor, Animal and Range Sciences; Ph.D., 1975, Oklahoma State Univ-Stillwater
- Hamilton, Wendy V.**, Professor, Cooperative Extension Service; Ph.D., 1991, Montana State University
- Hammond, Kenneth J.**, Professor, History; Ph.D., 1994, Harvard-Radcliffe University
- Hampton, Gerald M.**, Professor, Marketing; Ph.D., 1973, University of Washington
- Hamzeh Al Smadi, Manal**, Asst Prof, Sociology; Ph.D., 2007, New Mexico State University
- Hancock, Tina U.**, Acad Dept Head, Social Work; Ph.D., 1981, Univ of Alabama-Tuscaloosa
- Hanley, Kathryn A.**, Asst Prof, Biology; Ph.D., 1994, Univ of California - San Diego
- Hansen, Immo A.**, Asst Prof, Institute Of Applied Biosciences; Ph.D., 2001
- Hanson, Adrian T.**, Acad Dept Head Civil and Geological Engineering; Ph.D., 1989, Iowa State University
- Hanson, Stephen F.**, Asst Prof, Entomology Plant Path and Weed Sci; Ph.D., 1997, University of Wisconsin - Madison
- Hardee, Harry C.**, Professor, Mechanical Engineering; Ph.D., 1966, Univ of Texas-Austin
- Harding, John**, Professor, Mathematical Sciences; Ph.D., 1991, Mc Master University-Canada
- Harvey, Neil F.**, Acad Dept Head, Government; Ph.D., 1990, Univ of Essex/England
- Hathorn, Shelly R.**, Ext Home Econ, Cooperative Extension Service; MS, 1988, ENMU-Portales
- Hawkes, Gerald M.**, Asst Prof, Ag Economics and Ag Business; Ph.D., 2004, New Mexico State University
- Haynes, Jeanette L.**, Asst Prof, Curriculum and Instruction; Ph.D., 1997, University of New Mexico
- Hearn, Thomas M.**, Asst Prof, Physics; Ph.D., 1985, California Inst of Technology
- Heerema, Richard**, Ext Specialist, Cooperative Extension Service; Ph.D., 2005, Univ of California - Davis
- Hernandez, Anita**, Asst Prof, Curriculum and Instruction; Ph.D., 1999, Stanford University
- Herndon, James W.**, Professor, Chemistry and Biochemistry; Ph.D., 1983, Princeton University
- Herrera, Spencer R.**, Asst Prof, Languages and Linguistics; Ph.D., 2007, University of New Mexico
- Hoang, Lily**, Asst Prof, English; MFA, 2006, University of Notre Dame
- Hodnett, Frank E.**, Ext Dept Head, Cooperative Extension Service; Ph.D., 2003, New Mexico State University
- Hoke, Mary**, Professor, Nursing; Ph.D., 1999, New Mexico State University
- Holecck, Jerry**, Professor, Animal and Range Sciences; Ph.D., 1979, Oregon State University
- Holtzman, Jon A.**, Acad Dept Head, Astronomy; Ph.D., 1989, Univ of California - Santa Cruz
- Horodowich, Elizabeth A.**, Asst Prof, History; Ph.D., 2000, Univ of Michigan-Ann Arbor
- Houde, Peter**, Professor, Biology; Ph.D., 1985, Howard University
- Houghton, Woods E.**, Director, County Program, Cooperative Extension Service; MS, 1982, New Mexico State University
- Houston, Jessica P.**, Asst Prof, Chemical Engineering; Ph.D., 2002, Texas A & M Univ-Coll Station
- Houston, Kevin D.**, Asst Prof, Chemistry and Biochemistry; Ph.D., 2004, Univ of Texas Health Center
- Huang, Hong**, Asst Prof, Klipsch Sch of Elect Computer Eng; Ph.D., 2002, Georgia Institute of Tech
- Huang, Yu-Li**, Asst Prof, Industrial Engineering; Ph.D., 2008, Univ of Michigan-Ann Arbor
- Hubbell, Anne P.**, Acad Dept Head, Communications Studies; Ph.D., 2000, Michigan State University
- Hubbert, Michael E.**, Professor, Clayton Livestock Res Ctr; Ph.D., 1987, Univ of Alaska - Fairbanks
- Huerta, Luis M.**, Asst Prof, Curriculum and Instruction; Ph.D., 2003, New Mexico State University
- Huhmann, Bruce A.**, Asst Prof, Marketing; Ph.D., 1999, Univ of Alabama-Tuscaloosa

- Hunner, Jon**, Acad Dept Head, History; Ph.D., 1996, University of New Mexico
- Hurd, Brian H.**, Asst Prof, Ag Economics and Ag Business; Ph.D., 1992 Univ of California - Davis
- Huttlinger, Kathleen W.**, Professor, Nursing; Ph.D., 1988, University of Arizona
- Hyde, Anthony M.**, Professor, Engineering Technology; MS, 1991, Univ of Texas-El Paso
- Hyman, Michael R.**, Professor, Marketing; Ph.D., 1984, Purdue University - West Lafay
- Idowu, Omololu J.**, Ext Specialist, Cooperative Extension Service; Ph.D., 1997
- Idriss, Rola L.**, Professor, Civil and Geological Engineering; Ph.D., 1989, New Mexico State University
- Ivey, Shanna L.**, Asst Prof, Animal and Range Sciences; Ph.D., 2002, New Mexico State University
- Ivory, Gary M.**, Asst Prof, Educational Management and Dev; EDD, 1982, Texas Tech University
- Jackiewicz, Jason**, Asst Prof, Astronomy; Ph.D., 2005, Boston College
- Jasso, Ivonne M.**, Asst Prof, Marketing; Ph.D., 2004, University of Houston
- Jauregui, David V.**, Asst Prof, Civil and Geological Engineering; Ph.D., 1999 Univ of Texas-Austin
- Jenkins, Thomas W.**, Professor, Engineering Technology; MS, 1988, New Mexico State University
- Jiang, Ruinian**, Asst Prof, Engineering Technology; Ph.D., 2005, New Mexico State University
- Jimenez, Desaree C.**, Ext Home Econ, Cooperative Extension Service; MS, 1999, New Mexico State University
- Jin, Yuho**, Asst Prof, Computer Science; Ph.D., 2009, Texas A & M Univ-Coll Station
- Johnson, Charles L.**, Professor, Chemical Engineering; Ph.D., 1971, Washington University
- Johnson, Michael D.**, Professor, Chemistry and Biochemistry; Ph.D., 1983, New Mexico State University
- Johnson, Paula C.**, Asst Prof, Library Reference and Research Svcs; MLS, 2002, University of Wisconsin - Milwaukee
- Jones, Stanley H.**, Director, County Program, Cooperative Extension Service; MA, 1990, New Mexico State University
- Jonet, Melody**, Asst Prof, Sociology; Ph.D., 2007, Purdue University - West Lafay
- Joy, Nancy**, Asst Prof, Music; MM, 1986, New Mexico State University
- Jun, Minjoon**, Professor, Management; Ph.D., 1989, Georgia State University
- Kammerdiner, Alla R.**, Asst Prof, Industrial Engineering; Ph.D., 2008, University of Florida
- Kang, Jun Won**, Asst Prof, Civil and Geological Engineering; Ph.D., 2010, Univ of Texas-Austin
- Kanim, Stephen**, Asst Prof, Physics; Ph.D., 1999, University of Washington
- Kaplan, Allan R.**, Asst Prof, Music; Ph.D., 1978, New York University
- Keele, Becky**, Asst Prof, Nursing; Ph.D., 2000, University of Kansas
- Keeley, David W.**, Asst Prof, Human Perf Dance & Recreation; Ph.D., 2011, Univ of Arkansas Fayetteville
- Keleher, Loretta W.**, Asst Prof, Philosophy; Ph.D., 2007, Univ of Maryland - College Park
- Keller, Teresa L.**, Asst Prof, Nursing; Ph.D., 1999, St Louis University
- Kelley, Amy L.**, Ext 4H Agent, Cooperative Extension Service; MA, 2010, New Mexico State University
- Kelley, Robyn**, Ext 4H Agent, Cooperative Extension Service; M ED, 2002, Hardin-Simmons University
- Kelly, Lynn S.**, Asst Acad Dept Head, Engineering Technology; MS, 1994, New Mexico State University
- Kent, Cheryl E.**, Ext Agric Agent, Cooperative Extension Service; MS, 2006, New Mexico State University
- Ketelaar, Timothy**, Asst Prof, Psychology; Ph.D., 1993, Univ of Michigan-Ann Arbor
- Kew, Kristin**, Asst Prof, Educational Management and Dev; Ph.D., 2010, Boston College
- Keys, David**, Asst Prof, Criminal Justice; Ph.D., 1998, University of Missouri - Columbia
- Kiefer, Boris**, Asst Prof, Physics; Ph.D., 2002, Univ of Michigan-Ann Arbor
- Kim, Koomi**, Asst Prof, Curriculum and Instruction; Ph.D., 2003, University of Arizona
- King, James P.**, Asst Prof, Civil and Geological Engineering; Ph.D., 1990, Colorado State University
- Kinzer, Cathy J.**, Asst Prof, Curriculum and Instruction; Ph.D., 2005, New Mexico State University
- Kircher, Patrick D.**, Ext Agric Agent, Cooperative Extension Service; MS, 2001, Oklahoma State Univ-Stillwater
- Kittleson, Mark J.**, Acad Dept Head, Health Science; Ph.D., 1986, University of Akron
- Klein, Lonnie D.**, Professor, Music; DMA, 1993, Univ of Illinois in Urbana
- Kliwer, Joerg**, Asst Prof, Klipsch Sch of Elect Computer Eng; Ph.D., 1999
- Klypin, Anatoly**, Professor, Astronomy; Ph.D., 1980
- Knapp, Debra W.**, Asst Prof, Human Perf Dance & Recreation; EDD, 2008, New Mexico State University
- Knight, Kelly R.**, Ext Home Econ, Cooperative Extension Service; MS, 2003, New Mexico State University
- Koukel, Sonja**, Ext Specialist, Cooperative Extension Service; Ph.D., 2005, Texas Tech University
- Kozel, Charles T.**, Asst Prof, Health Science; Ph.D., 1995, University of New Mexico
- Kratzke, Cynthia**, Asst Prof, Health Science; BS, 1971, Shippensburg State College
- Kreie, Jennifer**, Asst Prof, Accounting and Information Systems; Ph.D., 1998, Univ of Arkansas Fayetteville
- Krishnan, Uma D.**, Asst Prof, Family and Consumer Sciences; Ph.D., 2004, Ohio State University
- Kroger, James K.**, Asst Prof, Psychology; Ph.D., 1998, Univ of California - Los Angeles
- Kuehn, Glenn D.**, Professor, Chemistry and Biochemistry; Ph.D., 1968, Washington State University
- Kurtz, Douglas S.**, Professor, Mathematical Sciences; Ph.D., 1978, Rutgers State University - New
- Lakey, Joseph D.**, Acad Dept Head, Mathematical Sciences; Ph.D., 1991, Univ of Maryland - College Park
- Lammers, Peter J.**, Research Faculty, Energy Research Laboratory; Ph.D., 1982, Portland State University
- Lamonica, Mary M.**, Asst Prof, Journalism and Mass Communications; Ph.D., 1993, Michigan State University
- Lanasa, Amy E.**, Asst Prof, Creative Media; MA, 2008, Florida State University
- Landers, Katherine A.**, Director, County Program, Cooperative Extension Service; MA, 1994, New Mexico State University
- Lapid, Yosef**, Professor, Government; Ph.D., 1981, Columbia University of N Y
- Lara, Antonio S.**, Asst Prof, Chemistry and Biochemistry; Ph.D., 1990, New Mexico State University
- Lara, Dulcinea M.**, Asst Prof, Criminal Justice; Ph.D., 2006, Univ of California - Berkeley
- Lawton, Timothy F.**, Professor, Geological Sciences; DBA, 1983, University of Arizona
- Lee, Young**, Asst Prof, Mechanical Engineering; Ph.D., 2006, Univ of Illinois in Urbana
- Lee, Yu-Feng L.**, Asst Prof, Economics and International Business; Ph.D., 2003, Southern Illinois Univ-Carbond
- Leinauer, Bernhard**, Ext Specialist, Cooperative Extension Service; Ph.D., 1998, Hohenheim Univ/Germany
- Leslie, Ian H.**, Interim Acad Dept Head, Mechanical Engineering; Ph.D., 1984, Stanford University
- Leung, Hing**, Professor, Computer Science; Ph.D., 1987, Penn State Univ-All Campuses
- Lewis, Philip W.**, Acad Dept Head, Creative Media; Ph.D., 2007
- Lillywhite, Jay M.**, Asst Prof, Ag Economics and Ag Business; Ph.D., 2003, Purdue University - West Lafay
- Lindemann, William C.**, Professor, Plant and Environmental Sciences; Ph.D., 1978, University of Minnesota - Twin
- Linkin, Harriet K.**, Professor, English; Ph.D., 1985, Univ of Michigan-Ann Arbor
- Liu, Wenxin**, Asst Prof, Klipsch Sch of Elect Computer Eng; Ph.D., 2005, University of Missouri
- Lodder, Gerald**, Professor, Mathematical Sciences; Ph.D., 1987, Stanford University
- Loest, Clint A.**, Asst Prof, Animal and Range Sciences; Ph.D., 1999, Kansas State University
- Lombard, Kevin A.**, Asst Prof, Ag Science Ctr at Farmington; Ph.D., 2007, New Mexico State University
- Lopez, Boe C.**, Ext Agric Agent, Cooperative Extension Service; MAG, 2004, New Mexico State University
- Lucero, Steve**, Ext 4H Agent, Cooperative Extension Service; MS, 1989, New Mexico State University
- Lujan, Nicole D.**, Ext Home Econ, Cooperative Extension Service; BS, 2006, New Mexico State University
- Luo, Hongmei**, Asst Prof, Chemical Engineering; Ph.D., 2006, Tulane University of Louisiana
- Lusetti, Shelley L.**, Asst Prof, Chemistry and Biochemistry; Ph.D., 2002, University of Wisconsin - Madison
- Lyons, Barbara A.**, Asst Prof, Chemistry and Biochemistry; Ph.D., 1989, Cornell University
- Ma, Ou**, Professor, Mechanical Engineering; Ph.D., 1991, Mc Gill University-Canada
- Mabry, Karen E.**, Asst Prof, Biology; Ph.D., 2007, Univ of California - Davis
- MacDonald, Justin**, Asst Prof, Psychology; Ph.D., 2003, Purdue University - West Lafay

- MacGregor-Mendoza, Patricia**, Professor, Languages and Linguistics; Ph.D., 1996, Univ of Illinois in Urbana
- Mack Haynes, Robin C.**, Ext Home Econ, Cooperative Extension Service; MA, 2002, New Mexico State University
- Mack, Gregory**, Professor, Geological Sciences; Ph.D., 1977, Indiana University - Bloomington
- Madrid, Eva M.**, Ext 4H Agent, Cooperative Extension Service; MA, 2009, New Mexico State University
- Madson, Laura J.**, Asst Prof, Psychology; Ph.D., 1996, Iowa State University
- Mahaffy, Mardi**, Asst Prof, Library Reference and Research Svcs; MLS, 1999, Indiana University - Bloomington
- Maio, William**, Asst Prof, Chemistry and Biochemistry; Ph.D., 2009, Johns Hopkins University
- Malamud, Margaret I.**, Professor, History; Ph.D., 1990, Univ of California - Berkeley
- Mandabach, Keith H.**, Asst Prof, Hotel Restaurant and Tourism Mgt; EDD, 1998, University of Houston
- Manning, Michael R.**, Professor, Management; Ph.D., 1979, Purdue University - West Lafay
- Maratea, Ray**, Asst Prof, Criminal Justice; Ph.D., 2009, University of Delaware
- Marez, Leigh A.**, Director, County Program, Cooperative Extension Service; MA, 2004, New Mexico State University
- Marks, Michael**, Asst Prof, Psychology; Ph.D., 2007, Univ of Illinois in Urbana
- Marsalis, Mark A.**, Ext Specialist, Cooperative Extension Service; Ph.D., 2004, Texas Tech University
- Martin, Kenneth J.**, Professor, Finance; Ph.D., 1987, Purdue University - West Lafay
- Martinez, Karim A.**, Director, County Program, Cooperative Extension Service; MS, 2002, New Mexico State University
- Martinez-Rios, Jorge**, Asst Prof, Music; MM, 2008, Kent State Univ-Geauga
- Maupin, James R.**, Acad Dept Head Criminal Justice; Ph.D., 1990, Arizona State University
- McAteer, Robert T. J.**, Asst Prof, Astronomy; Ph.D., 2004
- McCleneghan, J. S.**, Professor, Journalism and Mass Communications; Ph.D., 1979, Univ of Texas-Austin
- McCrossin, Monte L.**, Dir, Museum, Anthropology; Ph.D., 1994, Univ of California - Berkeley
- McDonald, James E.**, Asst Prof, Psychology; Ph.D., 1981, New Mexico State University
- McDowall, Siriporn**, Asst Prof, Hotel Restaurant and Tourism Mgt; Ph.D., 1999, Kansas State University
- McFerrin, Randy**, Asst Prof, Economics and International Busines; Ph.D., 1995, Texas A & M Univ-Coll Station
- McGuckin, J. T.**, Professor, Economics and International Busines; Ph.D., 1980, University of Wisconsin - Madison
- McKee, Lisa J.**, Professor, Family and Consumer Sciences; Ph.D., 1990, Texas Tech University
- McKimmie, Timothy I.**, Asst Prof, Agriculture and Home Econ College; MALS, 1990, University of Arizona
- McMillan, Nancy J.**, Acad Dept Head, Geological Sciences; Ph.D., 1986, Southern Methodist University
- McNamara, Bernard J.**, Professor, Astronomy; Ph.D., 1975, Univ of California - Santa Cruz
- McNelis, L K.**, Asst Prof, Accounting and Information Systems; Ph.D., 1996, Univ of Texas-Arlington
- Medina, Christina A.**, Asst Prof, Government; Ph.D., 2008, University of Colorado - Denver
- Melendrez, Kevin D.**, Asst Prof, Accounting and Information Systems; Ph.D., 2004, University of Arizona
- Melendrez, Samuel P.**, Ext Agric Agent, Cooperative Extension Service; MA, 1988, New Mexico State University
- Mellen, Roger**, Asst Prof, Journalism and Mass Communications; Ph.D., 2007, George Mason University
- Mercado, Maria D.**, Asst Prof, Curriculum and Instruction; Ph.D., 2000, University of New Mexico
- Metzger, Jerald W.**, Director, County Program, Cooperative Extension Service; MA, 1997, New Mexico State University
- Mexal, John**, Asst Dept Head, Plant and Environmental Sciences; Ph.D., 1974, Colorado State University
- Miller, Elizabeth A.**, Asst Prof, Library Technical Services; MLS, 1997, University of Wisconsin - Milwaukee
- Miller-Tomlinson, Tracey E.**, Asst Prof, English; Ph.D., 2002, Yale University
- Milligan, Brook G.**, Professor, Biology; Ph.D., 1985, Univ of California - Davis
- Mills, Sherry K.**, Professor, Accounting and Information Systems; Ph.D., 1989, Texas Tech University
- Misra, Satyajayant**, Asst Prof, Computer Science; Ph.D., 2009, Arizona State University
- Molloy, Molly**, Professor, Library Reference and Research Svcs; MLS, 1990, Louisiana St Univ-Baton Rouge
- Monger, Hugh C.**, Professor, Plant and Environmental Sciences; Ph.D., 1990, New Mexico State University
- Montanez, Marcel**, Asst Prof, Family and Consumer Sciences; Ph.D., 2004, Michigan State University
- Moore, Gerald R.**, Ext Agric Agent, Cooperative Extension Service; MA, 1988, New Mexico State University
- Mora-Monge, Carlo A.**, Asst Prof, Accounting and Information Systems; Ph.D., 2007, University of Toledo
- Morandi, Patrick J.**, Professor, Mathematical Sciences; Ph.D., 1988, Univ of California - San Diego
- Morgan, Eric L.**, Asst Prof, Communications Studies; Ph.D., 2002, University of Massachusetts
- Morrell, Michael**, Asst Prof, Engineering Technology; MA, 2000, Brandeis University
- Moulton, Robert D.**, Professor, Exec Vice President and Provost; Ph.D., 1974, Michigan State University
- Moyers, Connie S.**, Ext Home Econ, Cooperative Extension Service; M ED, 1988, ENMU-Portales
- Mullen, John P.**, Asst Prof, Industrial Engineering; Ph.D., 1994, Iowa State University
- Mullins, Iris L.**, Asst Prof, Nursing; Ph.D., 2003, Georgia State University
- Munson-Mcgee, Stuart**, Professor, Family and Consumer Sciences; Ph.D., 1982, University of Delaware
- Murphy, James R.**, Asst Prof, Astronomy; Ph.D., 1991, University of Washington
- Nakotte, Heinrich**, Professor, Physics; Ph.D., 1994, University of Amsterdam - Netherlands
- Nelson, James A.**, Asst Prof, Accounting and Information Systems; Ph.D., 1975, University of Missouri - Columbia
- Newby, Cassie A.**, Asst Prof, Sociology; Ph.D., 1999, Univ of Texas-Austin
- Newton, Craig M.**, Asst Prof, Civil and Geological Engineering; Ph.D., 1997, University of Washington
- Ng, Kwong T.**, Professor, Klipsch Sch of Elect Computer Eng; Ph.D., 1985, Ohio State University
- Ni, James F.**, Professor, Physics; Ph.D., 1984, Cornell University
- Niculescu, Mihai**, Asst Prof, Marketing; Ph.D., 2009, University of Cincinnati
- Nirmalakhandan, Nagamany**, Professor, Civil and Geological Engineering; Ph.D., 1988, Drexel University
- Nishiguchi, Michele K.**, Professor, Biology; Ph.D., 1994, Univ of California - Santa Cruz
- O'Connell, Mary A.**, Professor, Plant and Environmental Sciences; Ph.D., 1980, Cornell University
- O'Donnell, James F.**, Acad Dept Head, Curriculum and Instruction; EDD, 1990, University of Massachusetts-Am
- Oesterrich, Heather**, Asst Prof, Curriculum and Instruction; EDD, 2003, Columbia University - Columbia
- Oklobdzija, Vojin G.**, Professor, Klipsch Sch of Elect Computer Eng; Ph.D., 1982, Univ of California - Los Angeles
- Olberding, Bruce**, Professor, Mathematical Sciences; Ph.D., 1996, Wesleyan University
- Oliver, Kimberly L.**, Professor, Human Perf Dance & Recreation; Ph.D., 1997, Virginia Polytech - Blacksburg
- Oliver, Richard L.**, Asst Prof, Accounting and Information Systems; Ph.D., 1997, New Mexico State University
- O'Loughlin, Judy S.**, Ext Home Econ, Cooperative Extension Service; MA, 2009, New Mexico State University
- O'Neill, Michael K.**, Professor, Ag Science Ctr at Farmington; Ph.D., 1982, University of Arizona
- Orelus, Pierre**, Asst Prof, Curriculum and Instruction; Ph.D., 2008, University of Massachusetts-Am
- Oretskin, Nancy A.**, Professor, Finance; JD, 1988, Case Western Reserve Univ
- Ortega, Aishah**, Asst Prof, Special Ed and Comm Disorders; MA, 2001, Univ of Illinois in Urbana
- Orzoff, Andrea**, Asst Prof, History; Ph.D., 2000, Stanford University
- Osanloo, Azadeh**, Asst Prof, Educational Management and Dev; Ph.D., 2006, Arizona State University
- Osborne, Cary G.**, Asst Prof, Library Archives and Special Collec; MLS, 2007, University of Oklahoma - Norman
- Painter, Craig S.**, County Program Director, Cooperative Extension Service; MA, 2002, New Mexico State University
- Palacios, Rebecca**, Asst Prof, Health Science; Ph.D., 2006, Univ of Texas-El Paso



- Palmer, Marsha L.**, Ext Home Econ, Cooperative Extension Service; MS, 1989, New Mexico State University
- Pan, Mingming**, Asst Prof, Economics and International Busines; Ph.D., 2011, Univ of Nebraska - Lincoln
- Papavassiliou, Vassilios**, Assc Prof, Physics; Ph.D., 1988, Yale University
- Papelis, Charalambos**, Assc Prof, Civil and Geological Engineering; Ph.D., 1992, Stanford University
- Park, Young H.**, Assc Prof, Mechanical Engineering; Ph.D., 1994, University of Iowa
- Parra, Julia L.**, Asst Prof, Extended Learning; Ed.D., 2010, Pepperdine University - Malibu
- Pase, Marilyn**, Assc Prof, Nursing; MSN, 1975, Vanderbilt University
- Pate, Stephen F.**, Professor, Physics; Ph.D., 1987, University of Pennsylvania
- Patrick, John M.**, Ext Specialist, Cooperative Extension Service; Ph.D., 1977, Michigan State University
- Payne, Collin R.**, Asst Prof, Marketing; Ph.D., 2005, Brigham Young Univ-Provo
- Paz, Robert A.**, Assc Prof, Klipsch Sch of Elect Computer Eng; Ph.D., 1991, Univ of Illinois in Urbana
- Peach, James T.**, Professor, Economics and International Busines; Ph.D., 1978, University of Texas-Austin
- Peterson, Robin T.**, Professor, Marketing; Ph.D., 1972, University of Washington
- Picchioni, Geno**, Professor, Plant and Environmental Sciences; Ph.D., 1989, Texas A & M University-College Station
- Pierard, Cynthia K.**, Dept. Head, Library; Library Reference and Research Svcs; MLS, 1993, Indiana University - Ft. Wayne
- Pierce, Jane B.**, Assc Prof, Ag Science Ctr at Arteria; Ph.D., 1990, Rutgers State University
- Pines, Edward**, Acad Dept Head, Industrial Engineering, Ph.D., 1994, Penn State University
- Pivkina, Inna V.**, Assc Prof, Computer Science, Ph.D., 2001, University of Kentucky - Lexington
- Platero, Leah H.**, Ext Home Econ, Cooperative Extension Service; MSW, 2005, New Mexico State University
- Poel, Elissa**, Assc Prof, Special Ed and Comm Disorders; Ph.D., 1998, New Mexico State University
- Pontelli, Enrico**, Acad Dept Head, Computer Science; Ph.D., 1997, New Mexico State University
- Porras, Claudia**, Asst Prof, Counseling and Educational Psy; Ph.D., 2011, Oklahoma State University-Stillwater
- Posadas, Carlos E.**, Asst Prof, Criminal Justice; Ph.D., 2007, Arizona State University
- Post, Phillip G.**, Asst Prof, Human Perf Dance & Recreation; Ph.D., 2010, University of Tennessee - Knoxville
- Prasad, Nadipuram**, Assc Prof, Klipsch Sch of Elect Computer Eng; Ph.D., 1985, New Mexico State University
- Pratt, Richard C.**, Acad Dept Head, Plant and Environmental Sciences; Ph.D., 1985, Purdue University - West Lafayette
- Prentice, Mary**, Assc Prof, Educational Management and Dev; Ph.D., 2001, University of Texas-Austin
- Preszler, Ralph**, Assc Prof, Biology; Ph.D., 1992, Northern Arizona University
- Query, J. T.**, Assc Prof, Finance; Ph.D., 1999, University of Georgia
- Quintana, William**, Acad Dept Head, Chemistry and Biochemistry; Ph.D., 1988, University of Pennsylvania
- Ramirez-Angulo, Jaime**, Professor, Klipsch Sch of Elect Computer Eng; Ph.D., 1982, University of Stuttgart-German
- Ramos, Frank C.**, Asst Prof, Geological Sciences; Ph.D., 2000, Univ of California - Los Angeles
- Ramras, Daniel A.**, Asst Prof, Mathematical Sciences; Ph.D., 2007, Stanford University
- Ranade, Satishkuma J.**, Acad Dept Head, Klipsch Sch of Elect Computer Eng; Ph.D., 1981, University of Florida
- Rao, Satyapriya**, Assc Prof, Health Science; Ph.D., 1994, Texas Womans University
- Ray, Ian**, Professor, Plant and Environmental Sciences; Ph.D., 1989, University of Wisconsin - Madison
- Rayson, Gary D.**, Professor, Chemistry and Biochemistry; Ph.D., 1983, Univ of Texas-Austin
- Reinhardt, Anita C.**, Asst Prof, Nursing; Ph.D., 2003, Oregon Health & Science University
- Reka, Katerina**, Asst Prof, Art; MFA, 2011, Indiana University - Bloomington
- Reyes, Loui**, Assc Prof, Curriculum and Instruction; Ph.D., 1997, New Mexico State University
- Rhein, Deborah**, Asst Prof, Special Ed and Comm Disorders; Ph.D., 2003, University of Arizona
- Rice, James**, Asst Prof, Sociology; Ph.D., 2006, Washington State University
- Rice, Julie**, Asst Prof, Sociology; Ph.D., 2008, Washington State University
- Rice, Stephen C.**, Assc Prof, Psychology; M.A., 2003, Univ of Illinois in Urbana
- Richardson, Frederick L.**, Ext Specialist, Cooperative Extension Service; M.A., 1988, New Mexico State University
- Ricketts, Craig**, Assc Prof, Engineering Technology; Ph.D., 1992, Univ of Karlsruhe-Germany
- Robinson, James**, Professor, Health Science; Ed.D., 1980, University of Northern Colorado
- Rockstraw, David A.**, Professor, Chemical Engineering; Ph.D., 1989, University of Oklahoma
- Rodriguez, Cristobal**, Asst Prof, Educational Management and Dev; Ph.D., 2009, Univ of Texas-Austin
- Roemer, Gary W.**, Assc Prof, Fishery and Wildlife Sciences; Ph.D., 1999, Univ of California - Los Angeles
- Romero, Alvaro**, Asst Prof, Entomology Plant Path and Weed Sci; Ph.D., 2009, University of Kentucky - Lexington
- Romero, Frank E.**, Assc Prof, Music; Ph.D., 2001, University of Oklahoma
- Rosencrans, Carlos**, Assc Prof, Agricultural and Extension Educ; Ph.D., 1996, Iowa State University
- Rosile, Grace Ann M.**, Assc Prof, Management; Ph.D., 1982, University of Pittsburgh
- Ross, Timothy**, Acad Dept Head, Animal and Range Sciences; Ph.D., 1981, North Carolina State University
- Roth, Gregory P.**, Assc Prof, Finance; Ph.D., 1995, University of South Carolina
- Rourke, Brian**, Assc Prof, English; Ph.D., 1999, Stanford University
- Rowe, Martha L.**, Assc Prof, Music; DMA, 1995, University of Arizona
- Rowland, Aaron M.**, Asst Prof, Chemistry and Biochemistry; Ph.D., 2005, University of Utah
- Ruiz, Marisol**, Asst Prof, Curriculum and Instruction; Ph.D., 2008, University of New Mexico
- Rushforth, Scott**, Professor, Anthropology; Ph.D., 1977, University of Arizona
- Rutledge, David W.**, Assc Prof, Curriculum and Instruction; Ph.D., 2002, Univ of Colorado - Boulder
- Sachse, James E.**, Ext 4H Agent, Cooperative Extension Service; M.A., 1991, New Mexico State University
- Salamanca-Riba, Susana A.**, Assc Prof, Mathematical Sciences; Ph.D., 1986, Massachusetts Inst of Technology
- Salas, Loretta**, Assc Prof, Special Ed and Comm Disorders; Ed.D., 1998, New Mexico State University
- Salas-Provance, Marlene**, Assc Prof, Special Ed and Comm Disorders; Ph.D., 1990, Univ of Illinois in Urbana
- Samani, Zohrab A.**, Professor, Civil and Geological Engineering; Ph.D., 1983, Utah State University
- Sammis, Theodore W.**, Professor, Plant and Environmental Sciences; Ph.D., 1974, University of Arizona
- Sankaran, Harikumar**, Assc Prof, Finance; Ph.D., 1987, University of Houston
- Sanogo, Soumaila**, Assc Prof, Entomology Plant Path and Weed Sci; Ph.D., 1995, Penn State University
- Sanyal, Amit**, Asst Prof, Mechanical Engineering; Ph.D., 2004, Univ of Michigan-Ann Arbor
- Sautter, Elise T.**, Acad Dept Head, Marketing; Ph.D., 1991, Florida State University
- Scheller, Daniel S.**, Asst Prof, Government; Ph.D., 2010, Florida State University
- Schirmer, Elizabeth**, Assc Prof, English; Ph.D., 2001, Univ of California - Berkeley
- Schmotzer, Geri**, Asst Prof, Nursing; Ph.D., 2009, Univ of California - San Francisco
- Schneider, Ingrid**, Asst Prof, Library Technical Services; MLS, 2008, Indiana University - Bloomington
- Scholljegerdes, Eric J.**, Asst Prof, Animal and Range Sciences; Ph.D., 2005, University of Wyoming
- Schroeder, Jill**, Acad Dept Head, Entomology Plant Path and Weed Sci; Ph.D., 1985, University of Georgia
- Schultz, Linda L.**, Ext Specialist, Cooperative Extension Service; MS, 1979, Oregon State University
- Schultz, Pam**, Acad Dept Head, Nursing; Ph.D., 2003, Texas Womans University
- Schutte, Brian J.**, Asst Prof, Entomology Plant Path and Weed Sci; Ph.D., 2007, Ohio State University
- Schwartz, Jonathan**, Acad Dept Head, Counseling and Educational Psy; M.A., 1997, New Mexico State University
- Scoccia, Danny**, Acad Dept Head, Philosophy; Ph.D., 1985, Univ of California - San Diego
- Scott, Mary Alice T.**, Asst Prof, Anthropology; Ph.D., 2010, University of Kentucky - Lexington
- Scribner, Edmund A.**, Acad Dept Head, Accounting and Information Systems; Ph.D., 1985, Oklahoma State Univ-Stillwater



- Seevers, Brenda S.**, Professor, Agricultural and Extension Educ; Ph.D., 1991, Ohio State University
- Serrano, Elba**, Professor, Biology; Ph.D., 1983, Stanford University
- Sevostianov, Igor**, Asst Prof, Mechanical Engineering; Ph.D., 1993, St. Petersburg University, Russia
- Shashikanth, Banavara N.**, Asst Prof, Mechanical Engineering; Ph.D., 1998, University of Southern California
- Shearer, James E.**, Professor, Music; DMA, 1990, Eastman School of Music
- Sheppard, Jennifer**, Asst Prof, English; Ph.D., 2003, Michigan Technological University
- Shu, Fangjun**, Asst Prof, Mechanical Engineering; Ph.D., 2005, Purdue University - West Lafayette
- Shukla, Manoj K.**, Asst Prof, Plant and Environmental Sciences; Ph.D., 1998, University of Vienna
- Shuster, Charles**, Asst Prof, Biology; Ph.D., 1996, Tufts University
- Shuster, Michele**, Asst Prof, Biology; Ph.D., 1994, Tufts University
- Siepel, Charles E.**, Ext Dept Head, Cooperative Extension Service; MS, 1977, New Mexico State University
- Simon, Dominic A.**, Acad Dept Head, Psychology; Ph.D., 1997, Univ of California - Los Angeles
- Sizemore, Mary H.**, Asst Prof, Nursing; Ed.D., 1979, Nova University
- Skaggs, Rhonda**, Professor, Ag Economics and Ag Business; Ph.D., 1989, Utah State University
- Skelton, Peter D.**, Asst Prof, Cooperative Extension Service; Ph.D., 2004, Univ of Nebraska - Lincoln
- Smallidge, Samuel T.**, Ext Specialist, Cooperative Extension Service; Ph.D., 2005, New Mexico State University
- Smirnov, Sergei**, Professor, Chemistry and Biochemistry; Ph.D., 1987, Novosibirsk State University
- Smith, Carmen E.**, Asst Prof, English; M.F.A., 1997, University of Iowa
- Smith, David E.**, Asst Prof, Chemistry and Biochemistry; Ph.D., 1989, Univ of California - Berkeley
- Smith, Geoffrey**, Professor, Biology; Ph.D., 1989, North Carolina State University
- Smith, Jeanette C.**, Professor, Library Information Services, M.A., 1970, Univ of Minnesota-Duluth; M.A., 1973, University of Minnesota - Twin Cities
- Smith, Jeremy**, Asst Prof, Chemistry and Biochemistry; Ph.D., 1996, University of Witwatersrand, S. Africa
- Smith, Timothy T.**, Acad Dept Head, Theatre Arts; M.F.A., 1994, University of Missouri - Kansas
- Smith, William L.**, Asst Prof, Accounting and Information Systems; M.A., 1985, New Mexico State University
- Smitley, Roselyn G.**, Asst Prof, Family and Consumer Sciences; Ph.D., 1989, Texas Woman's University
- Smits, Robert G.**, Asst Prof, Mathematical Sciences, Ph.D., 1996, Purdue University - West Lafayette
- Sohn, Hansuk**, Asst Prof, Industrial Engineering; Ph.D., 2004, University of Iowa
- Song, Mingzhou**, Asst Prof, Computer Science; Ph.D., 2002, University of Washington
- Soto-Navarro, Sergio A.**, Asst Prof, Animal and Range Sciences; Ph.D., 1999, New Mexico State University
- Spencer, Linda J.**, Asst Prof, Special Ed and Comm Disorders; Ph.D., 2006, University of Iowa
- Spitzer, Laura**, Asst Prof, Music; Ph.D., 2000, University of Southern California
- St Hilaire, Rolston**, Professor, Plant and Environmental Sciences; Ph.D., 1998, Iowa State University
- Staffeldt, Ross E.**, Professor, Mathematical Sciences; Ph.D., 1977, University of California - Berkeley
- Stair, Kristin S.**, Asst Prof, Agricultural and Extension Educ; Ed.D., 2009, North Carolina State University
- Stanford, Charles B.**, Asst Prof, Library Archives and Special Collections; MLS, 2006, University of Pittsburgh
- Stanford, M. L.**, Asst Prof, Anthropology; Ph.D., 1989, University of Florida
- Stanford, Theodore B.**, Asst Prof, Mathematical Sciences, Ph.D., 1993, Columbia University of N.Y.
- Steiner, Robert L.**, Professor, Economics and International Business; Ph.D., 1993, Oklahoma State Univ-Stillwater
- Stevens, Kenny**, Asst Prof, Engineering Technology; MS, 1990, New Mexico State University
- Stevens, Rachel B.**, Professor, Art; MFA, 1993, Syracuse University
- Stochaj, Steven J.**, Professor, Klipsch Sch of Elect Computer Eng; Ph.D., 1990, Univ of Maryland - College Park
- Stolte, Tyson M.**, Asst Prof, English; Ph.D., 2009, Univ of British Columbia-Canada
- Storm, William**, Asst Prof, Theatre Arts; Ph.D., 1995, Univ of California - Santa Barbara
- Stringam, Elizabeth C.**, Asst Prof, Hotel Restaurant and Tourism Mgt; Ed.D., 1991, Northern Arizona University
- Summers, Linda C.**, Asst Prof, Nursing; DSCI, 2003, Univ of Texas Health Center
- Taggart, William A.**, Professor, Government; Ph.D., 1982, Florida State University
- Talamante, Marcella E.**, Ext 4H Agent, Cooperative Extension Service; MAG, 2009, Colorado State University
- Tator, Kyle**, Director, County Program, Cooperative Extension Service; B.S., 2005, New Mexico State University
- Taylor, David**, Professor, Art; M.S., 1994, University of Oregon
- Taylor, Stephanie L.**, Asst Prof, Art; Ph.D., 2001, Boston University
- Teich, Jeffrey E.**, Professor, Management; Ph.D., 1991, SUNY - Buffalo
- Thatcher, Barry**, Asst Prof, English; Ph.D., 1997, Purdue University - West Lafayette
- Thayer, Frank**, Asst Prof, Journalism and Mass Communications; Ph.D., 1993, New Mexico State University
- Thomas, Jack D.**, Professor, Animal and Range Sciences; Ph.D., 1980, University of Missouri - Columbia
- Thomas, Stephen**, Professor, Entomology Plant Path and Weed Sci; Ph.D., 1980, Iowa State University
- Thompson, Laura A.**, Professor, Psychology; Ph.D., 1987, Univ of California - Santa Cruz
- Throop, Heather L.**, Asst Prof, Biology; Ph.D., 2002, SUNY - Stonybrook
- Torelli, L. A.**, Professor, Ag Economics and Ag Business; Ph.D., 1984, Utah State University
- Torres, Monica F.**, Acad Dept Head, English; Ph.D., 2002, University of New Mexico
- Torres, Myriam N.**, Asst Prof, Curriculum and Instruction; Ph.D., 1995, University of New Mexico
- Torres, Patrick W.**, Director, County Program, Cooperative Extension Service, M.A., 1988, New Mexico State University
- Trafimow, David**, Professor, Psychology; Ph.D., 1993, Univ of Illinois in Urbana
- Tran, Son C.**, Professor, Computer Science; Ph.D., 2000, Univ of Texas-EI Paso
- Tunnell, Cindy S.**, Professor, Accounting and Information Systems, Ph.D., 1990, Oklahoma State Univ-Stillwater
- Tunnell, P. L.**, Professor, Accounting and Information Systems; Ph.D., 1990, Oklahoma State Univ-Stillwater
- Turner, Carol W.**, Ext Specialist, Cooperative Extension Service; Ph.D., 2005, New Mexico State University
- Turner, Jason L.**, Ext Specialist, Cooperative Extension Service, Ph.D., 2001, Kansas State University
- Turner, Mindy G.**, Ext Specialist, Cooperative Extension Service; MS, 2001, Tarleton State University
- Uchanski, Mark E.**, Asst Prof, Plant and Environmental Sciences; Ph.D., 2007, Univ of Illinois-Urbana
- Ulery, April L.**, Professor, Plant and Environmental Sciences; Ph.D., 1992, Univ of California - Riverside
- Unc, Adrian**, Asst Prof, Plant and Environmental Science; Ph.D., 2002, University of Guelph Ontario
- Unguez, Graciela A.**, Asst Prof, Biology; Ph.D., 1994, Univ of California - Los Angeles
- Uribe-Florez, Lida J.**, Asst Prof, Curriculum and Instruction; MS, 2002, University of Puerto Rico
- Urquidi, Jacob**, Asst Prof, Physics; Ph.D., 2001, Texas Tech University
- Valdez, Alfred**, Asst Prof, Special Ed and Comm Disorders; Ph.D., 2008, University of New Mexico
- Valdez, Carlos F.**, Director, County Program, Cooperative Extension Service; MA, 1996, New Mexico State University
- Valdez, Raul**, Professor, Fishery and Wildlife Sciences; Ph.D., 1970, Texas A & M Univ-College Station
- Valdez, Tony A.**, Director, County Programs, Cooperative Extension Service; MS, 1989, New Mexico State University
- Valentine, Kathryn**, Asst Prof, English; Ph.D., 2003, Michigan Technological University
- Valles-Rosales, Delia J.**, Asst Prof, Industrial Engineering; MS, 1995, New Mexico State University
- Van Winkle, Lisa K.**, Asst Prof, Music; DMA, 2005, University of Arizona
- Vanleeuwen, Dawn**, Professor, Economics and International Business; Ph.D., 1993, Oregon State University

**Vasiliev, Igor V.**, Asst Prof, Physics; Ph.D., 2000, University of Minnesota - Twin Cities

**Vazquez, Eneida G.**, Professor, Counseling and Educational Psy; Ph.D., 1990, University of Iowa

**Vega-Albela, Daniel**, Asst Prof, Music; MM, 2004, Western Michigan University; MM, 2007, Kent State University

**Vessel, Jean-Paul**, Asst Prof, Philosophy; Ph.D., 2003, University of Massachusetts-Amherst

**Viers, Joran A.**, Ext Agric Agent, Cooperative Extension Service; MS, 1994, University of Florida

**Villa, Daniel**, Professor, Languages and Linguistics; Ph.D., 1992, University of New Mexico

**Villaverde, Karen**, Asst Prof, Computer Science, Ph.D., 2003, New Mexico State University

**Voelz, David G.**, Professor, Klipsch Sch of Elect Computer Eng; Ph.D., 1987, Univ of Illinois in Urbana

**Vogt, Nicole P.**, Asst Prof, Astronomy; Ph.D., 1995, Cornell University

**Voisine, Connie**, Asst Prof, English; Ph.D., 2000, University of Utah

**Walden, George R.**, Director, County Program, Cooperative Extension Service; MAG, 1997, Sul Ross State University

**Waldo, Michael M.**, Professor, Counseling and Educational Psy, Ph.D., 1980, University of Utah

**Walker, Mark A.**, Asst Prof, Philosophy; Ph.D., 1994, Australian National University

**Walker, Stephanie**, Asst Prof, Cooperative Extension Service; Ph.D., 2007, New Mexico State University

**Walker, William H.**, Professor, Anthropology; Ph.D., 1995, University of Arizona

**Walterbos, Reinirus**, Professor, Astronomy; Ph.D., 1986, University of Leiden

**Waltermire, Mark**, Asst Prof, Languages and Linguistics; Ph.D., 2006, University of New Mexico

**Wang, Haobin**, Professor, Chemistry and Biochemistry; Ph.D., 1996, Wayne State University

**Wang, Tonghui**, Professor, Mathematical Sciences; Ph.D., 1992, Univ of Windsor/Canada

**Ward, Frank A.**, Professor, Ag Economics and Ag Business; Ph.D., 1977, Colorado State University

**Watkins, Cynthia A.**, Asst Prof, Library Reference and Research Svcs; MLS, 1995, Univ of Texas-Austin; MS, 2002, New Mexico State University

**Watts, M. L.**, Ext Agric Agent, Cooperative Extension Service; MA, 1988, New Mexico State University

**Way, Sandra M.**, Asst Prof, Sociology; Ph.D., 2003, University of Arizona

**Wei, Mingjun**, Asst Prof, Mechanical Engineering; Ph.D., 2004, Univ of Illinois in Urbana

**Weisinger, Judith Y.**, Asst Prof, Management; Ph.D., 1996, Case Western Reserve University

**Weldon, Brad D.**, Asst Prof, Civil and Geological Engineering; Ph.D., 2010, University of Notre Dame

**Wenzel, John C.**, Asst Prof, Cooperative Extension Service; DVM, 1986, Kansas State University

**Westbrock, Theresa M.**, Asst Prof, Library Reference and Research Svcs; MS, 2002, Wayne State University

**White, Laura**, Asst Prof, Animal and Range Sciences; Ph.D., 2009, Clemson University

**Whittlesey, Wanda**, Asst Prof, Social Work; Ph.D., 1997, Univ of Texas-Arlington

**Widner, Benjamin**, Asst Prof, Economics and International Business; Ph.D., 2005, Colorado State University

**Wilson, Susan L.**, Asst Prof, Health Science; Ph.D., 1982, Southern Methodist University

**Winfree, Latham T.**, Professor, Criminal Justice; Ph.D., 1976, University of Montana

**Winn, Derrell G.**, Ext Agric Agent, Cooperative Extension Service; MA, 1988, New Mexico State University

**Wise, Mark**, Professor, Bio Security And Food Safety Center; Ph.D., 1981, University Of Nebraska - Omaha

**Wojahn, Patricia**, Asst Prof, English; Ph.D., 1999, Carnegie-Mellon University

**Wolf, Mary E.**, Acad Dept Head, Languages and Linguistics; Ph.D., 1983, Rice University

**Wood, Robert H.**, Acad Dept Head, Human Perf Dance & Recreation; Ph.D., 1996, Louisiana State Univ-Baton Rouge

**Wooton, Shannon**, Ext Home Econ, Cooperative Extension Service; MA, 1990, ENMU-Portales

**Wosick, Kassia R.**, Asst Prof, Sociology; Ph.D., 2007, Univ of California - Irvine

**Wright, John B.**, Professor, Geography; Ph.D., 1990, University of California - Berkeley

**Wright, Timothy F.**, Asst Prof, Biology; Ph.D., 1997, Univ of California - San Diego

**Wurm, Kurt B.**, Asst Prof, Engineering Technology; Ph.D., 2002, University of Maine - Orono

**Xu, Jiannong**, Asst Prof, Biology; MD, 2004

**Yao, Shengrui**, Asst Prof, Cooperative Extension Service; Ph.D., 2005, Cornell University

**Young, Michael**, Asst Acad Dept Head, Health Science; Ph.D., 1975, Texas A & M Univ-College Station

**Zarur, Elizabeth N.**, Asst Prof, Art; Ph.D., 1998, University of Georgia

**Zhang, Jinfa**, Asst Prof, Plant and Environmental Sciences; Ph.D., 1999, Univ of Arkansas Fayetteville

**Zollner, Stefan**, Acad Dept Head, Physics; Ph.D., 1991, University of Stuttgart-German

**Zoski, Cynthia**, Professor, Chemistry and Biochemistry; Ph.D., 1985, Queens University - Canada

## COMMUNITY COLLEGE CAMPUSES

### Administration

#### ALAMOGORDO

**Jimeno, Cheri**, Campus President; Ph.D., 2000, Utah State University

**Teachman, Debra K.**, VP for Acad Affairs ALCC; Ph.D., 1990, University of California - Davis

**Salinas, Antonio A.**, VP for Bus & Finance ALCC; BACCT, 1997, New Mexico State University

#### CARLSBAD

**Gratton, John B.**, Campus President; Ed.D., 1978, Texas A&M University

**Dyck, Catherine**, VP for Bus & Finance CACC; MPA, 2002, Portland State University

#### DOÑA ANA

**Huerta, Margie**, Campus President; Ph.D., 1990, New Mexico State University

**Burke, Andrew J.**, VP Bus & Finance DACC; MACCT, 1989, New Mexico State University

**Walker, John**, Asst VP Acad Affairs DACC; Ed.D., 2007, New Mexico State University

#### GRANTS

**Casados, Felicia R.**, Campus President; MA, 1975, New Mexico Highlands University

**Yanke, Gaylyn A.**, VP for Bus & Finance GRCC; MBA, 2007, Ashford University

**Sheski, Harry**, VP for Acad Affairs GRCC; Ph.D., 1999, University of New Mexico

## Tenured and Tenure-Track Faculty

### NMSU—ALAMOGORDO

**Aguilar-Morgan, Catherine A.**, Asst Prof, ALCC Reg Academic Instruction; MS, 1981, New Mexico Institute of Mining

**Allred, Tanya J.**, Asst Prof, ALCC Reg Academic Instruction; MA, 2006, New Mexico State University

**Alterson, Rhonda L.**, Asst Prof, ALCC Reg Academic Instruction; BA, 1990, Northeastern Illinois University

**Atkinson, Steven R.**, Instructor, ALCC Occupational and Voc Instructor

**Baca, Ernestine**, Professor, ALCC Reg Academic Instruction; EDD, 2005, New Mexico State University

**Baldwin, Carrie M.**, Asst Prof, ALCC Reg Academic Instruction; MA, 2001, Syracuse University

**Breeding, Connie J.**, Asst Prof, ALCC Reg Academic Instruction; MA, 1983, University of North Dakota

**Carlson, Stan R.**, Asst Prof, ALCC Reg Academic Instruction; MS, 1991, New Mexico State University

**Deinert, Jenna L.**, College Instructor, ALCC Reg Academic Instruction; MA, 2009, New Mexico State University

**Eisele, Rita L.**, Asst Prof, ALCC Reg Academic Instruction; Ph.D., 1999, Indiana State Univ-Terre Haute

**Elser, Glenda W.**, Asst Prof, ALCC Reg Academic Instruction; MS, 1988, Montana State University

**Eydenberg, Francis M.**, Professor, ALCC Reg Academic Instruction; MS, 1983, University of Southern California

**French, Doris A.**, Asst Prof, ALCC Reg Academic Instruction; EDD, 1989, University of The Pacific

**Furphy, Michael J.**, Instructor, ALCC Reg Academic Instruction

**Gallagher, James D.**, Professor, ALCC Reg Academic Instruction; Ph.D., 1994, University of Washington

**Gonzalez-Gonzalez, Jose M.**, Asst Prof, ALCC Reg Academic Instruction; MA, 1996, New Mexico State University

**Grundhoffer, Elizabeth L.**, Instructor, ALCC Reg Academic Instruction; MA, 2003, New Mexico State University

**Haley, John D.**, Professor, ALCC Reg Academic Instruction; MA, 1990, New Mexico State University

**Hill, Joyce A.**, Asst Prof, ALCC Reg Academic Instruction; Ph.D., 2004, New Mexico State University

**Keith, Mary E.**, Asst Prof, ALCC Occupational and Voc Instructor; JD, 1970, University of Houston

**Lockhart, William W.**, Professor, ALCC Reg Academic Instruction; MA, 1995, Univ of Texas-El Paso

**Lombrana, Vicente**, Professor, ALCC Reg Academic Instruction; Ph.D., 1992, New Mexico State University

**Lopez, Kim T.**, Asst Prof, ALCC Reg Academic Instruction; MA, 1996, St John's College

**Luscumb, Jane**, Asst Prof, ALCC Reg Academic Instruction; MSN, 2009, Walden Univ-Minneapolis

**McGowan, Wayne A.**, Asst Prof, ALCC Reg Academic Instruction; MA, 1996, University of Denver

**McNeel, Ronald J.**, Professor, ALCC Reg Academic Instruction; MA, 1976, Northern Arizona University

**Miller, David**, Asst Prof, ALCC Reg Academic Instruction; Ph.D., 1998, Stanford University

**O'Neill, Erin**, Asst Prof, ALCC Reg Academic Instruction; Ph.D., 1991, Univ of Louisiana-Lafayette

**Placencio, Matthew A.**, Instructor, ALCC Occupational and Voc Instructor; BICT, 2007, New Mexico State University

**Reid, Karen M.**, Asst Prof, ALCC Reg Academic Instruction; Ph.D., 2009, University of Nevada-Las Vegas

**Roark-Diehl, Kathy L.**, Professor, ALCC Reg Academic Instruction; MS, 1992, New Mexico State University

**Rupe, Jarrod C.**, Professor, ALCC Reg Academic Instruction; MBA, 1990, Univ of Texas-El Paso

**Sadowski, Karen E.**, Asst Prof, ALCC Reg Academic Instruction; MS, 2009, Western Governors University

**Starr-Maciulski, Janice J.**, Asst Prof, ALCC Occupational and Voc Instructor; MSN, 1991, Univ of Texas-El Paso

**Villaverde, Gloria A.**, Asst Prof, ALCC Reg Academic Instruction; MS, 1998, New Mexico State University

**Wakkinen, Wanda S.**, Asst Prof, ALCC Reg Academic Instruction; MA, 2004, New Mexico State University

**Walker, Sylvia E.**, Instructor, ALCC Reg Academic Instruction; BS, 1976, New Mexico State University

**Wheeler, Sherrell L.**, Asst Prof, ALCC Reg Academic Instruction; MA, 1985, West Texas A & M University

**Yancey, Bryan A.**, Professor, ALCC Occupational and Voc Instruc; MFA, 1983, Claremont Grad School/Calif

## NMSU—CARLSBAD

**Airhart, James T.**, Instructor, CACC Reg Academic Instruction; BS, 2001, ENMU-Portales

**Bickerstaff, Lynda**, College Instructor, CACC Grant Funded PGMS; MSN, 1992, Univ of Texas-El Paso

**Buckholz, Mark A.**, Professor, CACC Reg Academic Instruction; EDD, 2009, New Mexico State University

**Christensen, Samuel**, Asst Prof, CACC Reg Academic Instruction; MA, 1999, Bethel Theological Seminary

**DeBlasis, Shelly**, Asst Prof, CACC Reg Academic Instruction; MA, 2003, University of South Florida

**Estrada, Claudia S.**, Asst Prof, CACC Nursing Pgm; MS, 2002, University of Phoenix

**Girmus, Ronald**, Asst Prof, CACC Reg Academic Instruction; Ph.D., 1992, University of Arizona

**Goad, Faith E.**, Asst Prof, CACC Nursing Pgm; MS, 2003, University of New Mexico

**Greenwood, Kathy L.**, Professor, CACC Reg Academic Instruction; Ph.D., 1981, Ohio State University

**Hayes, Robyn**, Asst Prof, CACC Reg Academic Instruction; MS, 1988, Univ of Nebraska - Lincoln

**Heinrich, Eric J.**, Asst Prof, CACC Reg Academic Instruction; Ph.D., 1998, Fordham University

**Jaco, Mary E.**, Asst Prof, CACC Nursing Pgm; MA, 1989, New Mexico State University

**Johnston, Dianna M.**, Assistant Professor, CACC Nursing Pgm; MSN, 2009, Walden Univ-Minneapolis

**Josselet, Kenda**, Instructor, CACC Reg Academic Instruction; MA, 2001, West Texas A & M University

**Lee, Chang S.**, Asst Prof, CACC Reg Academic Instruction; Ph.D., 1996, Univ of California - Los Angeles

**Lovelace, Margaret L.**, Professor, CACC Reg Academic Instruction; EDD, 2008, New Mexico State University

**Mahung, Anthony A.**, Instructor, CACC Reg Academic Instruction; BS, 1988, New Mexico State University

**Nichols, Nita F.**, Asst Prof, CACC Reg Academic Instruction; MA, 2006, New Mexico State University

**Niedland, Cynthia L.**, Instructor, CACC Reg Academic Instruction; MFA, 2008, City College of NY

**Nosakhere, Akilah S.**, Asst Prof, CACC Lib and Learnng Assist Ctr; MLS, 1987, Atlanta University

**Packer, Debra L.**, Professor, CACC Reg Academic Instruction; MA, 1996, Central Michigan University

**Rayroux, Carolyn J.**, Professor, CACC Nursing Pgm; MS, 2002, University of Phoenix

**Redford, David L.**, Asst Prof, CACC Reg Academic Instruction; MA, 1981, Univ of Illinois-Springfield

**Strahan, Jon**, Instructor, CACC Reg Academic Instruction; MS, 1992, Arizona State University

**Vacca, John J.**, Asst Prof, CACC Reg Academic Instruction; Ph.D., 2006, Union Institute & University

**Valdiviez, Matthew R.**, Instructor, CACC Reg Academic Instruction; MA, 2007, Yale University

**Vallejos, Shannon L.**, Asst Prof, CACC Nursing Pgm; MSN, 2002, University of Phoenix

**White, Evelyne B.**, Asst Prof, CACC Reg Academic Instruction; Ph.D., 2007, New Mexico State University

**Wiedenmann, Richard T.**, Asst Prof, CACC Reg Academic Instruction; MS, 1991, Baylor University

**Yeh, Li-Hao**, Asst Prof, CACC Reg Academic Instruction; Ph.D., 2011, Univ of Texas-El Paso

**Zhao, Yaxi**, Asst Prof, CACC Reg Academic Instruction; Ph.D., 2008, University of Kentucky - Lexington

**Zuniga, Gina**, Asst Prof, CACC Nursing Pgm; MSN, 2007, University of New Mexico

## DOÑA ANA COMMUNITY COLLEGE

**Ahmad, Ali M.**, Professor, DACC Math and Physical Sci Dept; Ph.D., 2000, New Mexico State University

**Alden, Donna J.**, Dept Chair, DABCC, DACC Arts and Humanities Dept; Ph.D., 2007, New Mexico State University

**Aranda, Jose**, Asst Prof, DACC Library Technology Pgm; MA, 2003, University of South Florida

**Avitia, Hillary K.**, Instructor, DACC Business Office Tech Pgm; MA, 2007, New Mexico State University

**Baca, Kathleen A.**, Professor, DACC English and Commun Dept; MA, 1987, Western New Mexico University

**Balisan, Sarah V.**, Instructor, DACC Health Occupation Prm 1; MS, 2009, New Mexico State University

**Barnet, Jeffrey**, Instructor, DACC English and Commun Dept; MFA, 1993, University of Arizona

**Benoit, Leilani M.**, Dept Chair, DABCC, DACC Business and Info Sys Div; MA, 1998, New Mexico State University

**Bettinger, Kathleen C.**, Instructor, DACC DENTAL HYGIENE PROGRAM; BA, 2004, Metropolitan State University

**Bradley, Joyce S.**, Program Director, DABCC, DACC Emergency Med Paramed Pgm; BHCS, 2005, New Mexico State University

**Bradley, Shannon M.**, Asst Prof, DACC Education Pgm; MA, 2002, New Mexico State University

**Briggs, Timothy B.**, Dept Chair, DABCC, DACC Technical Studies Div; MS, 1993, New Mexico State University

**Brokate, Robert**, Instructor, DACC Water Technology; BS, 2002, Northwest Missouri State University

**Brown, Michael D.**, Asst Prof, DACC Digital Graphics Pgm; MA, 2006, New Mexico State University

**Burleson, David**, Asst Prof, DACC Arts and Humanities Dept; MS, 1993, Troy State University

**Byrnes, Matthew E.**, Dept Chair, DABCC, DACC Technical Studies Div; BIS, 2007, New Mexico State University

**Caldwell, Karen A.**, Instructor, DACC Health Occupation Prm 1; Ph.D., 1985, University of Wyoming

**Campos, Margaret**, Instructor, DACC Technical Studies Div; BS, 2003, New Mexico State University

**Carter, John H.**, Asst Prof, DACC Computer Tech Pgm; MA, 2009, New Mexico State University



- Chaffee, Tammara M.**, Asst Prof, DACC Radiologic Technology Pgm; MED, 2011, Grand Canyon University
- Chambers, Layle M.**, Instructor, DACC Arts and Humanities Dept; MA, 2001, Univ of Texas-El Paso
- Chappell, Hilda O.**, Instructor, DACC Business Office Tech Pgm; BS, 2008, University of Phoenix
- Chappell, Timothy**, Professor, DACC Computer Tech Pgm; MS, 1992, Florida Institute of Tech
- Chavez, Robert M.**, Professor, DACC Computer Tech Pgm, MA, 1997, New Mexico State University
- Chu, Jiming**, Professor, DACC Health Occupation Prm 1; PHD, 1996, New Mexico State University
- Cline, Paul R.**, Asst Prof, DACC Emergency Med Paramed Pgm; BS, 1978, New Mexico State University
- Collins, Amy C.**, Asst Prof, DACC Health Occupation Prm 1; MS, 1999, Univ of Texas-El Paso
- Corran, Rebecca**, Instructor, DACC Nursing Assistant Pgm; MPH, 2006, University of Arizona
- Cox, Annja M.**, Program Director, DABCC, DACC Radiologic Technology Pgm; MA, 2005, New Mexico State University
- Credeur, Carrie E.**, Instructor, DACC DENTAL HYGIENE PROGRAM; BACH, 2011, ENMU-Portales
- Davis, Jonathan E.**, Asst Prof, DACC Health Occupation Prm 1; Ph.D., 1988, Univ of Nebraska - Lincoln
- De La Cruz, Laura K.**, Instructor, DACC Merchandising Pgm; MBA, 2000, University of Phoenix
- Depner, Kurt M.**, Asst Prof, DACC English and Commun Dept; MA, 1994, New Mexico State University
- Derouen, Richard G.**, Asst Prof, DACC Fire Science Pgm; MBA, 2002, University of Phoenix
- Dhillon, Tarlochan S.**, Asst Prof, DACC Electronic Technology Pgm; Ph.D., 1999, Univ of Texas-El Paso
- Durant, Virginia K.**, Program Director, DABCC, DACC Respiratory Therapy Pgm; MA, 2005, New Mexico State University
- Ellis, Sarah K.**, Asst Prof, DACC Math and Physical Sci Dept; MS, 2005, New Mexico State University
- Fetherlin, Sheila W.**, Program Director, DABCC, DACC Nursing Assistant Pgm; BS, 2008, New Mexico State University
- Figuroa, Tiffany K.**, Instructor, DACC Nursing Associate Deg Pgm; MSN, 2007, University of Phoenix
- Gamboa, Elizabeth**, Instructor, DACC Math and Physical Sci Dept; MAT, 2010, New Mexico State University
- Gantzler-Woods, Tamara K.**, Asst Prof, DACC Education Pgm; MA, 2005, New Mexico State University
- Garay, Marco**, Instructor, DACC Manufacturing Tech Pgm; AS, 2004, Dona Ana Comm College N M S U
- Garcia, Amy N.**, Asst Prof, DACC English and Commun Dept; MA, 2000, New Mexico State University
- Gomez, Jose E.**, Asst Prof, DACC Welding Technology Pgm
- Gonzalez, Rita V.**, Dept Chair, DABCC, DACC Math and Physical Sci Dept, Ph.D., 2004, New Mexico State University
- Gonzalez, Victoria B.**, Dept Chair, DABCC, DACC English and Commun Dept; Ph.D., 1997, New Mexico State University
- Gordon, Anthony C.**, Asst Prof, DACC Arts and Humanities Dept; MS, 1986, University of Central Texas
- Gurrola, Lucy B.**, Professor, DACC Math and Physical Sci Dept; MA, 1991, New Mexico State University
- Guzman-Armijo, Michelle**, Asst Prof, DACC English and Commun Dept; MA, 2002, New Mexico State University
- Hernandez, Eugene F.**, Asst Prof, DACC Comp Draft And Graphics Pgm; AAPLSC, 2005, New Mexico State University
- Hill, Suzanne M.**, Asst Prof, DACC Math and Physical Sci Dept; MS, 1994, New Mexico State University
- Hoffman, Vita**, Asst Prof, DACC Dental Auxiliary Pgm, BAS, 2011, New Mexico State University
- Huchmala, Matthew A.**, Instructor, DACC Legal Assistant Pgm; JD, 2005, Thomas Jefferson School of Law
- Huff, Fred D.**, Asst Prof, DACC Computer Tech Pgm; BS, 1984, New Mexico State University
- Hutson, Faith**, Asst Prof, DACC Sonography Pgm; BS, 1989, Univ of Maryland - College Park
- Jarry, Laura A.**, Instructor, DACC Nursing Assistant Pgm, BS, 1999, New Mexico State University
- Javaher, Nina**, Asst Prof, DACC Computer Tech Pgm; Ph.D., 2010, New Mexico State University
- Juarez, Jon E.**, Dept Chair, DABCC, DACC Computer Tech Pgm; MA, 1999, New Mexico State University
- Kelly, Melinda R.**, Instructor, DACC Nursing Associate Deg Pgm, MSN, 2011, Walden Univ-Minneapolis
- Koller, Bryan M.**, Asst Prof, DACC Business Office Tech Pgm; MA, 2000, New Mexico State University
- Kozel, Krista H.**, Asst Prof, DACC English and Commun Dept; MFA, 2005, University of New Mexico
- Laroche, Pierre O.**, Professor, DACC English and Commun Dept; MA, 1991, New Mexico State University
- Layer, Douglas A.**, Asst Prof, DACC Arts and Humanities Dept; MA, 2000, Florida International Univ
- Levine, David A.**, Asst Prof, DACC Fire Science Pgm; MCJ, 2009, New Mexico State University
- Lewis, Lynn D.**, Instructor, DACC Education Pgm; MA, Western New Mexico University
- Lopez, Edward G.**, Asst Prof, DACC Heating AC And Refrig Pgm; AAPLSC, 1989, New Mexico State University
- Lopez, Tracy K.**, Program Director, DABCC, DACC Nursing Associate Deg Pgm; MN, 2008, University of New Mexico
- Loring, Margaret**, Asst Prof, DACC English and Commun Dept; MA, 1995, New Mexico State University
- Lowe, Karen R.**, Professor, DACC Math and Physical Sci Dept; MA, 1988, New Mexico State University
- Ludington, Steve T.**, Professor, DACC English and Commun Dept; MA, 1992, New Mexico State University
- Mabry, William**, Asst Prof, DACC Math and Physical Sci Dept; MS, 1997, Univ of Texas-El Paso
- Manshad, Shakir J.**, Professor, DACC Math and Physical Sci Dept; Ph.D., 1987, New Mexico State University
- Mason, Paul A.**, Professor, DACC Math and Physical Sci Dept; Ph.D., 1996, Case Western Reserve Univ
- Mason, Shana M.**, Asst Prof, DACC English and Commun Dept; MA, 2005, New Mexico State University
- Matthew, Darla J. M.**, Program Director, DABCC, DACC Sonography Pgm; ASSC, 1981, New Mexico State University
- McCaslin, Martha L.**, Program Director, DABCC, DACC Dental Auxiliary Pgm; MA, 2008, New Mexico State University
- Meza, Luis R.**, Instructor, DACC Manufacturing Tech Pgm; MBA, University of Phoenix
- Montes-Sandoval, Lucy A.**, Instructor, DACC Nursing Associate Deg Pgm; Ph.D., 2004, New Mexico State University
- Moore, Chipper E.**, Asst Prof, DACC Comp Draft And Graphics Pgm; BS, 2008, ENMU-Portales
- Moreno, German A.**, Asst Prof, DACC Math and Physical Sci Dept; Ph.D., 2011, New Mexico State University
- Mount, Terry L.**, Dept Chair, DABCC, DACC Technical Studies Dept; BS, 1978, New Mexico State University
- Nicholson, Gemma**, Asst Prof, DACC Hospitality Service Pgm; MA, 2003, George Washington University
- Nunez, Ariel A.**, Instructor, DACC Nursing Associate Deg Pgm; MS, 2010, New Mexico State University
- Osborne, Abigail A.**, Asst Prof, DACC Digital Graphics Pgm; MA, 2004, New Mexico State University
- Pankayatselvan, Ratnadevi**, Program Director, DABCC, DACC Health Occupation Prm; Ph.D., 1991, University of Oklahoma
- Pankayatselvan, Sinnathamby**, Professor, DACC Math and Physical Sci Dept, MS, 1994, New Mexico State University
- Perez, Larry C.**, Program Director, DABCC, DACC Fire Science Pgm; MS, 2000, Texas A & M University - Corpus Christi
- Pina, Gustavo A.**, Instructor, DACC Computer Tech Pgm; BS, 1997, University of Phoenix
- Pinkerton, Susan L.**, Professor, DACC Library Technology Pgm; Ph.D., 2008, New Mexico State University
- Prince, Linda D.**, Asst Prof, DACC Business Office Tech Pgm; MA, 2005, New Mexico State University
- Retana, Jose**, Asst Prof, DACC Industrial Technology Dept; AA, 1985, El Paso Community College
- Rios, Luis C.**, Professor, DACC Comp Draft And Graphics Pgm; BS, 1984, New Mexico State University
- Rivas, Elfeda B.**, Asst Prof, DACC Nursing Assistant Pgm; MA, 2003, University of Phoenix
- Roby, Patricia L.**, Asst Prof, DACC Nursing Assistant Pgm; BS, 1985, New Mexico State University
- Roychowdhury, Hiranya**, Asst Prof, DACC Health Occupation Prm; Ph.D., 1991, Univ of Calgary/Canada



**Ruiz, George B.**, Instructor, DACC Automotive Tech Pgm; A GS, 2010, New Mexico State University

**Saucedo, Andy C.**, Professor, DACC Business Occupations Pgm; MBA, 1986, Sul Ross State University

**Saulsberry, Donna**, Asst Prof, DACC Computer Tech Pgm; MA, 1993, New Mexico State University

**Schneider, Ellen M.**, Professor, DACC Math and Physical Sci Dept; Ph.D., 1995, Univ of Texas-Austin

**Schwaiger, Glenn**, Asst Prof, DACC Arts and Humanities Dept; MFA, 1990, New Mexico State University

**Seifert, Kim A.**, Dept Chair, DABCC, DACC Business and Mktg Dept; Ed.D., 2011, New Mexico State University

**Sierra, Rene L.**, Professor, DACC Math and Physical Sci Dept; MS, 1994, New Mexico State University

**Skalic, Linda M.**, Asst Prof, DACC Business Office Tech Pgm; MAT, 2003, Western New Mexico University

**Sletten, Mary J.**, Asst Prof, DACC Business Office Tech Pgm; Ph.D., 2003, University of Phoenix

**Stewart, Michael T.**, Professor, DACC Radiologic Technology Pgm; BS, 1973, University of Florida

**Tadeo, Joaquin**, Asst Prof, DACC Business Occupations Pgm; MBA, 2000, Univ of Texas-El Paso

**Taylor, Ronald F.**, Asst Prof, DACC Facilities Maintenance Pgm; BS, 2007, New Mexico State University

**Teitsworth, Mike S.**, Asst Prof, DACC English and Commun Dept; MA, 2004, New Mexico State University

**Telles, John E.**, Asst Prof, DACC Math and Physical Sci Dept; MA, 2007, New Mexico State University

**Torres, Maria G.**, Instructor, DACC English and Commun Dept; MFA, 2008, Boston University

**Twitty, David L.**, Professor, DACC Welding Technology Pgm; BS, 1992, Arizona State University

**Vasconcellos, Mark A.**, Instructor, DACC Digital Graphics Pgm; BA, 1985, San Jose State University

**Vaughn, Lamaia H.**, Asst Prof, DACC Digital Graphics Pgm; MFA, 1991, Univ of California - Los Angeles

**Viramontes, Olga T.**, Professor, DACC Arts and Humanities Dept; Ph.D., 1998, Univ of Texas-Austin

**Vonnahme, Paul**, Asst Prof, DACC Arts and Humanities Dept; MA, 1997, New Mexico State University

**Watson, Edward R.**, Instructor, DACC Emergency Med Paramed Pgm; AAPLSC, 2000, New Mexico State University

**Williams, Heather M.**, Asst Prof, DACC Arts and Humanities Dept; MA, 2000, New Mexico State University

**Williams, Susan**, Professor, DACC Business Occupations Pgm; MS, 1987, New Mexico State University

**Wood, Susan**, Professor, DACC English and Commun Dept; MA, 1990, University of Utah

**Wootton, Derrik A.**, Instructor, DACC Electronic Technology Pgm; BS, 2008, New Mexico State University

## NMSU—GRANTS

**Blazquez, Louise**, Asst Prof, GRCC Student Services Ctr; MS, 2003, Northern Illinois University

**Chavez-Toivanen, Marlene J.**, Professor, GRCC Regular Academic Instruction; MA, 1997, New Mexico State University

**Erben, Joan**, Professor, GRCC Regular Academic Instruction; Ph.D., 1997, Idaho State University

**Gallagher, Neal K.**, Asst Prof, GRCC Vocational Instruction; BS, 1983, Western Connecticut State College

**Gutierrez, Richard G.**, Professor, GRCC Vocational Instruction; BA, 1983, University of Northern Colorado

**Habiger, Betty J.**, Professor, GRCC Vocational Instruction; MA, 1992, University of New Mexico

**Humphreys, Elizabeth A.**, Asst Prof, GRCC Regular Academic Instruction; MA, 2002, St John's College

**Larson, Douglas M.**, Asst Prof, GRCC Vocational Instruction; MS, Capella University

**Leach, Michael T.**, Professor, GRCC Regular Academic Instruction; MA, 1999, University of New Mexico

**Mcdowell, Bruce**, Asst Prof, GRCC Vocational Instruction; BS, 1982, Univ of Texas-Tyler

**O'Connor, Kathleen**, Asst Prof, GRCC Regular Academic Instruction; MA, 2001, Prescott College

**Ott, Charlotte L.**, Asst Prof, GRCC Regular Academic Instruction; Ph.D., 1991, University of Arizona

**Romero, Alfred G.**, Asst Prof, GRCC Regular Academic Instruction; MFA, 1999, University of Iowa

**Rust, Crystal A.**, Asst Prof, GRCC Regular Academic Instruction; MS, 1994, University of Houston

**Walsh, Sharon L.**, Asst Prof, GRCC Grants CC; Ph.D., 2007, University of New Mexico

## Emeriti

**Aaron, Patricia**, Ext. Home Economist Emeritus, (1991-2008)

**Abernathy, George**, Professor Emeritus, (1957-1987)

**Aguirre, Francisco**, Associate Professor Emeritus, (1992-2006)

**Albert, Austin**, County Agent Southern Pueblos Emeritus, (1947-1976)

**Alexander, George**, Professor Emeritus, (1978-2006)

**Alexander, Martin**, Professor Emeritus, (1964-1999)

**Allen, Orphia**, Associate Professor Emeritus, (1981-1999)

**Alt, Kerry**, Associate Professor Emeritus, (1986-2010)

**Alvarez, Josefina**, Professor Emeritus, (1990-2010)

**Ames, Lynford**, Interim Associate VP Emeritus, (1966-2001)

**Anderson, Martha**, Professor Emeritus, (1982-2000)

**Anderson, Stephen**, Professor Emeritus, (2001-2012)

**Apodaca, Roberto**, Extension Agent Emeritus, (1993)

**Armentariz, Abe**, Associate Professor Emeritus, (1996-2009)

**Armijo, Esequiel**, County Director Emeritus, (1953-1982)

**Armstrong, Joe**, Professor Emeritus, (1979-2001)

**Arnold, David**, Professor Emeritus, (1969-1990)

**Arreola, Jose**, Associate Professor Emeritus, (1993-2006)

**Baca, Herman**, County Program Director Emeritus, (1952-1980)

**Baca, Odelio**, District Supervisor Emeritus, (1948-1976)

**Bagby, Richard**, Assoc. Academic Dept. Head Emeritus, (1968-2002)

**Bailey, Alton**, Extension Specialist Emeritus, (1958-1988)

**Baird, Douglas**, County Program Director Emeritus, (1973-1996)

**Baltensperger, Arden**, Professor Emeritus, (1963-1988)

**Barnes, Carl**, Professor Emeritus, (1965-1999)

**Barnes, Raymond**, County Director Emeritus, (1964-1984)

**Baron, Charles David**, Professor Emeritus, (1980-2001)

**Barrera, Cecilio**, Associate Dean Emeritus, (1975-1998)

**Beck, Larry**, Professor Emeritus, (1992-2005)

**Beck, Reldon**, Professor Emeritus, (1971-2002)

**Beebe, Herbert**, Professor Emeritus, (1969-1989)

**Beebe, Reta**, Professor Emeritus, (1970-2000)

**Benavidez, Rudy**, County Program Director Emeritus, (1986-2011)

**Benson, Joseph**, Professor Emeritus, (1981-2002)

**Bergsma, Harold**, Professor Emeritus, (1977-1994)

**Best, Joy**, County Program Director Emeritus, (1977-1997)

**Bhada, Rohinton**, Associate Dean/Director Emeritus, (1988-1999)

**Birnbaum, Edward**, Professor Emeritus, (1968-1992)

**Black, Lorine**, Associate Professor Emeritus, (1965-1978)

**Blake, Bradley**, Director Emeritus, (1965-1996)

**Blanton, Anita**, County Program Director Emeritus, (1976-2002)

**Bloss, Fred**, Associate Professor Emeritus, (1988-2000)

**Boney, John**, Farm/Ranch Supervisor II Emeritus, (1980-2008)

**Bradley, James**, Professor Emeritus, (1967-1986)

**Brandon, Jeffrey**, Professor Emeritus, (1989-2011)

**Brandon, Mary**, Program Director Emeritus, (1990-2011)

**Bridges, Charles**, Professor Emeritus, (1976-1999)

**Briggs, Dinus**, AES Admin Speclst Emeritus, (1982-2002)

**Brookey, Dorman**, Ext Training Emeritus, (1950-1984)

**Brooks, James**, Associate Professor Emeritus, (1967-1989)

**Brown, Irene**, College Associate Professor Emeritus, (1985-2004)

**Brown, Jerome**, Associate Professor Emeritus, (1966-2002)

**Buchanan, Bruce**, Associate Professor Emeritus, (1971-1991)

**Buckingham, Robert**, Professor Emeritus, (1994-2009)

**Buker, Suzanne**, College Professor Emeritus, (1981-2011)

- Bullock, James**, Academic Department Head Emeritus, (1978-1996)
- Burke, Gerald**, VP Administration Emeritus, (1962-1992)
- Burkholder, Earl**, Associate Professor Emeritus, (1998-2010)
- Burleson, Clinton**, Professor Emeritus, (1983-2009)
- Burleson, George**, Academic Department Head Emeritus, (1972-2000)
- Burr, Alexander**, Professor Emeritus, (1966-1997)
- Call, William**, Professor Emeritus, (1972-1992)
- Cameron, Robert**, Associate Professor Emeritus, (1978-2001)
- Carden, Frank**, Professor Emeritus, (1968-1994)
- Carlson, David**, Associate Professor Emeritus, (1977-2002)
- Casillas, Edmund**, Dean Emeritus, (1976-2002)
- Chacon, Gerald**, Associate Vice Provost Emeritus, (1974-2008)
- Chavez, Jesus**, County Agent FE Emeritus, (1941-1973)
- Chen, Laura**, Assistant Professor Emeritus, (1971-1999)
- Chen, Tuan**, Professor Emeritus, (1968-1996)
- Cherry, Myron**, Associate Professor Emeritus, (1967-1985)
- Chornesky, Alice**, Associate Professor Emeritus, (1992-2012)
- Clark, Marian**, Assistant Professor Emeritus, (1983-1996)
- Clark, William**, Academic Department Head Emeritus, (1985-1999)
- Clemons, Frankie**, Assistant Dean/Director Emeritus, (1972-1993)
- Clevenger, Thomas**, Professor Emeritus, (1968-1991)
- Clever, George**, Assistant Professor Emeritus, (1989-1999)
- Cobble, Milan**, Professor Emeritus, (1962-1984)
- Coburn, Horace**, Professor Emeritus, (1954-1989)
- Cole, Jack**, Professor Emeritus, (1976-1996)
- Cole, Richard**, Professor Emeritus, (1978-2000)
- Comeau, Paul**, Professor Emeritus, (1976-1989)
- Compton, Nina**, Professor Emeritus, (1980-2007)
- Conley, Walt**, Professor Emeritus, (1976-1993)
- Connors, Andrea**, Librarian Emeritus, (1969-1987)
- Conroy, William**, President Emeritus, (1985-2001)
- Coppedge, Robert**, Extension Specialist Emeritus, (1976-2006)
- Corgan, Joe**, Professor Emeritus, (1960-1996)
- Cotter, Donald**, Professor Emeritus, (1969-1989)
- Cox, Wallace**, Assistant Professor Emeritus, (1983-2005)
- Creed, Joe**, Assistant Dean Emeritus, (1983-2005)
- Cross, Nancy**, Program Director Emeritus, (1995-2006)
- Cuffey, James**, Professor Emeritus, (1966-1976)
- Cummings, Merrilyn**, Professor Emeritus, (1984-2009)
- Cunnar, Eugene**, Professor Emeritus, (1969-2006)
- Cunningham, Gary**, VP for Research Emeritus, (1968-2001)
- Cunningham, Rachel**, County Agent Emeritus, (1948-1975)
- Cyrs, Thomas**, Professor Emeritus, (1978-1998)
- Dahlgren, Fern**, Assistant Professor Emeritus, (1972-1984)
- Daugherty, LeRoy**, Associate Dean/Director Emeritus, (1975-2010)
- Davis, Charles**, Academic Department Head Emeritus, (1967-1996)
- Daw, Harold**, Professor Emeritus, (1960-1990)
- Dawson, George**, Professor Emeritus, (1957-1986)
- De Armond, Keith**, Professor Emeritus, (1988-1999)
- Dean, James**, Associate Professor Emeritus, (1975-1996)
- Del Campo, Robert**, Professor Emeritus, (1988-2012)
- Dempsey, Patricia**, Academic Department Head Emeritus, (1986-1996)
- Devlin, J. Stuart**, Professor Emeritus, (1985-1997)
- Dickerson, George**, Extension Specialist Emeritus, (1978-2006)
- Dick-Peddie, William**, Professor Emeritus, (1953-1987)
- Dictson, Billy**, Associate Dean/Director Emeritus, (1964-2002)
- Dillaway, Manson**, Professor Emeritus, (1982-2007)
- Dines, Margaret**, Ext Home Economist Emeritus, (1975-2005)
- Dinwiddie, Douglas**, Professor Emeritus, (1987-2009)
- Dixon, S. Tom**, Professor Emeritus, (1991-2001)
- Donart, Gary**, Professor Emeritus, (1972-2001)
- Douglass, John**, Associate Professor Emeritus, (1968-1989)
- Dubois, Betty**, Professor Emeritus, (1973-1993)
- Duffey, James**, County Program Director Emeritus, (1973-2006)
- Duling, John**, Counselor Emeritus, (1967-1987)
- Dunford, Max**, Professor Emeritus, (1963-1993)
- Dunlap, Ralph**, Extension Agent Emeritus, (1950-1982)
- Dyke, James**, Bibliographer Emeritus, (1969-1988)
- Eastman, Clyde**, Associate Professor Emeritus, (1988-2000)
- Eber, Christine**, Professor Emeritus, (1995-2011)
- Edington, Everett**, Professor Emeritus, (1968-1992)
- Elizondo, Sergio**, Professor Emeritus, (1972-1990)
- Ellington, John**, Professor Emeritus, (1965-2008)
- Ellis, Michael**, Academic Department Head Emeritus, (1973-2006)
- English, Lloyd**, Extension Specialist Emeritus, (1981-2006)
- Erbes, James**, Professor Emeritus, (1982-2003)
- Erhard, Thomas**, Professor Emeritus, (1960-1991)
- Ewing, Gordon**, Associate Professor Emeritus, (1962-1993)
- Farley, Billy Joe**, Assistant Professor Emeritus, (1969-1985)
- Farris, Edward**, Professor Emeritus, (1962-1986)
- Ferguson, Donald**, Professor Emeritus, (1967-1989)
- Ferguson, Mary**, Librarian Emeritus, (1966-1988)
- Fernandez, J. Steve**, Extension Agent Emeritus, (1969-1995)
- Fidler, Spencer**, Academic Department Head Emeritus, (1978-2010)
- Finch, Paul**, Associate Professor Emeritus, (1976-1998)
- Finkner, Ralph**, Advisor/CIP Emeritus, (1966-1989)
- Fisher, James**, Academic Department Head Emeritus, (1975-2004)
- Fitzgerald, Jessie**, County Program Director Emeritus, (1970-1992)
- Ford, C. Quentin**, Associate Dean Emeritus, (1959-1988)
- Foster, C. Larry**, Extension Specialist Emeritus, (1974-1995)
- Foster, Taylor**, Professor Emeritus, (1984-2006)
- Fowler, James**, Professor Emeritus, (1971-2002)
- Franco, Juan**, Regents Chief Staff Emeritus, (1975-2003)
- Fuehring, Howard**, Professor Emeritus, (1969-1987)
- Gabbi, Marianna**, Professor Emeritus, (1975-1999)
- Gallegos, Robert**, Professor Emeritus, (1976-1999)
- Galvan, Pete**, Associate Professor Emeritus, (1981-2005)
- Gentry, Jim Paul**, Professor Emeritus, (1964-1991)
- Gephart, Harry**, Assistant Professor Emeritus, (1961-1975)
- Giles, Michael**, Professor Emeritus, (1982-2006)
- Giordano, Gerard**, Academic Department Head Emeritus, (1976-1998)
- Giordano, Thomas**, Professor Emeritus, (1980-2006)
- Gledhill, Vernal**, Assistant Director Emeritus, (1958-1981)
- Glock, Waldo**, Associate Professor Emeritus, (1970-1991)
- Glover, Charles**, Professor Emeritus, (1978-2002)
- Goedecke, George**, Academic Department Head Emeritus, (1961-1995)
- Gomez, Angel**, Assistant Director Emeritus, (1962-1989)
- Gomez, Bealquin**, Extension Specialist Emeritus, (1974-2003)
- Gonzales, Carmen**, VP Student Success Emeritus, (1995-2011)
- Gonzalez, Maria Luisa**, Regents Professor Emeritus, (1989-2008)
- Goolsby, Almeda**, Ext Home Economist Emeritus, (1967-1988)
- Gorman, William**, Professor Emeritus, (1969-2002)
- Goss, Louis Blaine**, Professor Emeritus, (1984-2005)
- Gottwald, Allie-Sue**, Extension Specialist Emeritus, (1970-1992)
- Gould, Loretta**, Professor Emeritus, (1977-1999)
- Gould, Walter**, Associate Professor Emeritus, (1957-1984)
- Graham, Curtis**, Professor Emeritus, (1979-2001)
- Greene, Charles**, Division Director Emeritus, (1970-1991)
- Gregory, Eddie Joe**, Professor Emeritus, (1966-1998)
- Gren, Leroy**, Professor Emeritus, (1991-2002)
- Grijalva, Priscilla**, Extension Specialist Emeritus, (1969-1990)
- Haddock, Alice**, District Director Emeritus, (1957-1982)
- Hadsell, John**, Professor Emeritus, (1958-1981)
- Hafen, Kay**, VP Finance Emeritus, (1952-1974)
- Hageman, James**, Professor Emeritus, (1971-2000)
- Haley, Roger**, Professor Emeritus, (1965-1995)
- Hall, Carl**, Assistant to the President Emeritus, (1949-1981)
- Hall, David**, Associate Professor Emeritus, (1957-1992)
- Hall, R. Clariece**, County Director Emeritus, (1958-1986)
- Hampton, John**, Assistant Director Emeritus, (1955-1986)
- Harding, Gordon**, Associate Professor Emeritus, (1966-1994)

- Hardisty, Donald**, Professor Emeritus, (1969-1994)  
**Hardman, Marion**, Professor Emeritus, (1974)  
**Harris, Charles**, Professor Emeritus, (1969-1996)  
**Harris, Frances**, Associate Professor Emeritus, (1973-1998)  
**Hash, Frank**, Professor Emeritus, (1972-1984)  
**Hauge-Flores, Kathy**, Professor Emeritus, (1977-2001)  
**Hawkins, Clark**, Professor Emeritus, (1985-1996)  
**Hay, Paul**, District Director Emeritus, (1957-1988)  
**Haycock, Bevan**, Associate Professor Emeritus, (1964-1992)  
**Hazlett, Robert**, Professor Emeritus, (1962-1990)  
**Headrick, Roy Wayne**, Professor Emeritus, (1989-2005)  
**Heimann, Owaissa**, County Director Emeritus, (1948-1987)  
**Hendley, Alice**, Extension Specialist Emeritus, (1973-1994)  
**Hendrickson, Peter**, Associate Professor Emeritus, (1969-1993)  
**Herd, Erwin**, Extension Agent Emeritus, (1974-1998)  
**Herman, Ceil**, Professor Emeritus, (1979-2000)  
**Herman, Robert**, Associate Professor Emeritus, (1988-2000)  
**Hernandez, John**, Professor Emeritus, (1965-1999)  
**Herrera, Esteban**, Extension Specialist Emeritus, (1978-2002)  
**Higbie, Virginia**, Dean Emeritus, (1988-2000)  
**Hill, Jo Ann**, Associate Professor Emeritus, (1977-1994)  
**Hills, Richard**, Professor Emeritus, (1981-2008)  
**Himebrook, Roberta**, Professor Emeritus, (1987-2005)  
**Hinrichs, John**, County Director Emeritus, (1952-1984)  
**Hippo, Patricia**, Associate Professor Emeritus, (1978-2000)  
**Hoeksema, Thomas**, Professor Emeritus, (1972-1995)  
**Hoffman, Robert**, Professor Emeritus, (1973-1999)  
**Hoffman, Rosemary**, Associate Professor Emeritus, (1974-1999)  
**Holguin, Francisco**, County Program Director Emeritus, (1982-2005)  
**Holland, Lewis**, Associate Dean Emeritus, (1959-1985)  
**Hooks, Ronald**, Professor Emeritus, (1969-1996)  
**Hoover, Austin**, Associate Professor Emeritus, (1974-2002)  
**Horan, Sheila**, College Associate Professor Emeritus, (1985-2010)  
**Horan, Stephen**, Academic Department Head Emeritus, (1986-2009)  
**Hosford, Phillip**, Professor Emeritus, (1963-1987)  
**Howard, Volney**, Professor Emeritus, (1969-1999)  
**Howell, Jon**, Professor Emeritus, (1978-2006)  
**Hsi, David**, Professor Emeritus, (1952-1992)  
**Huddleston, Ellis**, Professor Emeritus, (1975-1998)  
**Hunt, Darwin**, Professor Emeritus, (1967-1992)  
**Hussain, Khateeb**, Professor Emeritus, (1966-1988)  
**Hutchison, David Warner**, Professor Emeritus, (1967-1996)  
**Ingraham, Richard**, Research Professor Emeritus, (1960-1994)  
**Jaffe, Amanda**, Professor Emeritus, (1986-2011)  
**Jaime, Mary**, Assistant Professor Emeritus, (1972-1998)  
**Jarrett, Lonnie**, Professor Emeritus, (1968-1990)  
**Johansen, Virginia**, Associate Ag Editor Emeritus, (1954-1982)  
**Johnson, Donald**, Professor Emeritus, (1965-1988)  
**Johnson, Elaine**, Professor Emeritus, (1989-2006)  
**Johnson, Eric**, Professor Emeritus, (1986-2010)  
**Johnson, Mae Martha**, Nutrition Specialist Emeritus, (1971-1984)  
**Johnston, Victor**, Professor Emeritus, (1969-2002)  
**Jones, Ruth**, Ext Home Economist Emeritus, (1978-2001)  
**Jones, Virginia**, County Director Emeritus, (1969-1986)  
**Jordan, Jay**, Dean Emeritus, (1981-2002)  
**Julian, William**, Professor Emeritus, (1969-2002)  
**Kamat, Satish**, Academic Department Head Emeritus, (1970-1999)  
**Karshmer, Arthur**, Academic Department Head Emeritus, (1978-2000)  
**Keaton, Alvin**, Associate Professor Emeritus, (1973-1998)  
**Kemp, John**, Professor Emeritus, (1985-2002)  
**Kersting, William**, Professor Emeritus, (1962-2002)  
**Ketchum, Richard**, Academic Department Head Emeritus, (1985-2002)  
**Keyes, Conrad**, Academic Department Head Emeritus, (1966-1987)  
**Kiesling, Herman**, Professor Emeritus, (1975-1994)  
**King, William**, Professor Emeritus, (1964-1989)  
**Kirby, Darrell**, Professor Emeritus, (1970-1988)  
**Kist, Joseph**, Professor Emeritus, (1966-1994)  
**Kline, Wesley**, Associate Professor Emeritus, (1966-1982)  
**Knoebel, R. Arthur**, Professor Emeritus, (1965-1994)  
**Kongs, Daniel**, Professor Emeritus, (1988-2003)  
**Kongs, Rebecca**, Department Chair Emeritus, (1984-2009)  
**Kruse, Arthur**, Research Professor Emeritus, (1961-1995)  
**Kunz, Kaiser**, Research Professor Emeritus, (1960-1981)  
**Kyle, Gary**, Professor Emeritus, (1984-2012)  
**La France, Leo**, Associate Professor Emeritus, (1977-1999)  
**Lamb, Ronald**, County Program Director Emeritus, (1976-2006)  
**Lansford, Robert**, Professor Emeritus, (1965-1998)  
**Laroche, Jacques**, Professor Emeritus, (1974-2011)  
**Lassiter, Ruby**, Associate Professor Emeritus, (1971-1988)  
**Latini, Mildred**, District Director Emeritus, (1970-1986)  
**Lawrence, Angela**, Extension Home Economist Emeritus, (1949-1975)  
**Leas, David**, Campus Director Emeritus, (1981-1998)  
**Lee, Boyden**, Associate Professor Emeritus, (1980-1997)  
**Leeper, Linda**, Associate Professor Emeritus, (1988-2002)  
**Leland, William**, Professor Emeritus, (1969-2000)  
**Leyva, Manuel**, Assistant Professor Emeritus, (1978-1991)  
**Liefeld, Robert**, Professor Emeritus, (1961-2001)  
**Liesner, Dan**, Extension Department Head Emeritus, (1971-2004)  
**Lile, Janet**, Associate Professor Emeritus, (1985-2000)  
**Lindsey, Donald**, Associate Dean/Director Emeritus, (1969-2001)  
**Long, Richard**, Professor Emeritus, (1981-2011)  
**Lopez, Stanley**, College Professor Emeritus, (1992-2010)  
**Lord, Roger**, Ext 4-H Agent Emeritus, (1981-1992)  
**Loveland, John**, Professor Emeritus, (1965-2002)  
**Ludeman, Lonnie**, Professor Emeritus, (1968-1993)  
**Lunsford, Larry**, Associate Professor Emeritus, (1982-1998)  
**Lyon, Albert**, County Program Director Emeritus, (1977-2005)  
**MacKendrick, Sharon**, Professor Emeritus, (1982-2002)  
**Maese, Judy**, Associate Professor Emeritus, (1980-2000)  
**Malm, Norman**, Professor Emeritus, (1969-1989)  
**Mandelkern, Mark**, Professor Emeritus, (1969-1994)  
**Manig-Sylvan, Joseph**, Professor Emeritus, (1985-2009)  
**Marlow, Shelton**, Provost Emeritus, (1970-1991)  
**Martin, David**, Academic Department Head Emeritus, (1969-1992)  
**Martin, Jackie**, Extension Specialist Emeritus, (1970-1993)  
**Martin, Jeanette**, Professor Emeritus, (1979-2000)  
**Martinez, Palemon**, District Director Emeritus, (1957-1987)  
**Matchett, William**, Dean Emeritus, (1977-1992)  
**Mathews, Charlotte**, Assistant Professor Emeritus, (1979-1992)  
**Matray, James**, Professor Emeritus, (1982-2002)  
**Matta, Benjamin**, Professor Emeritus, (1972-2009)  
**Matteson, Harold**, Associate Vice President Emeritus, (1977-2001)  
**Mays, George**, Professor Emeritus, (1981-2011)  
**McCarthy, Charlotte**, Professor Emeritus, (1972-1999)  
**McCaslin, Bobby**, Professor Emeritus, (1974-2005)  
**McCreight, Betty**, County Program Director Emeritus, (1981-2002)  
**McKay, Mary Ellen**, Extension Department Head Emeritus, (1969-1998)  
**McKinley, Joseph**, Professor Emeritus, (1966-1984)  
**McNeil, Keith**, Professor Emeritus, (1989-2006)  
**McPherson, Ronald**, Associate Professor Emeritus, (1981-1999)  
**Mealy, James**, Associate Professor Emeritus, (1965-1989)  
**Medoff, Mark**, Professor Emeritus, (1966-1993)  
**Merrill, M. Don**, Professor Emeritus, (1964-1997)  
**Mignery, Marilyn**, Ext 4-H Agent Emeritus, (1986-2000)  
**Miller, Darlis**, Professor Emeritus, (1975-1999)  
**Miller, Donald**, Professor Emeritus, (1951-1984)  
**Milne, Duane**, Professor Emeritus, (1981-1997)  
**Mines, Ray**, Professor Emeritus, (1965-2001)  
**Minor, John**, Professor Emeritus, (1970-1994)  
**Monagle, John**, Associate Dean/Director Emeritus, (1961-1992)  
**Moncus, Mary Lynn**, Associate Professor Emeritus, (1964-1989)  
**Mondragon, Delfi**, Professor Emeritus, (1996-2006)  
**Moore, Alexander**, Assistant Professor Emeritus, (1968-1996)  
**Moore, Judith**, Professor Emeritus, (1966-1995)  
**Morehart, Thomas**, Professor Emeritus, (1986-2001)



- Morgan, Anne**, Department Head Emeritus, (1970-1997)
- Morrison, Richard**, Professor Emeritus, (1993-2005)
- Mueller, Gerald**, Professor Emeritus, (1976-1996)
- Mueller, Wolfgang**, Professor Emeritus, (1985-2006)
- Mulholland, George**, Professor Emeritus, (1966-1996)
- Murrill, William**, Professor Emeritus, (1981-2003)
- Neale, Philip**, Professor Emeritus, (1963)
- Neish, William**, Extension Specialist Emeritus, (1978-2002)
- Nelson, Arnold**, Academic Department Head Emeritus, (1963-1986)
- Newcomer, Norman**, Specialist Media Emeritus, (1969-1987)
- Nguyen, Hung**, Professor Emeritus, (1981-2010)
- Nieto, Ray**, Audio Visual Tech II Emeritus, (1978-2003)
- Noland, Warren**, Associate Dean Emeritus, (1969-1993)
- Nordyke, James**, Professor Emeritus, (1964-1992)
- Nowotny, Kenneth**, Academic Department Head Emeritus, (1976-2001)
- Ocepek, Louis**, Professor Emeritus, (1985-2002)
- O'Connor, George**, Professor Emeritus, (1991)
- Offley, Ronald**, Associate Professor Emeritus, (1989-2002)
- O'Neal, Mary Jo**, County Director Emeritus, (1953-1986)
- Ortiz, Melchor**, Professor Emeritus, (1975-1993)
- Orton, Eliot**, Professor Emeritus, (1970-1994)
- Ott, Gene**, Extension Specialist Emeritus, (1963-1992)
- Owen, Gordon**, Professor Emeritus, (1962-1989)
- Owens, John**, Executive VP Emeritus, (1977-2001)
- Paap, Kenneth**, Associate Dean/Director Emeritus, (1975-2004)
- Pagel, Karen**, Associate Professor Emeritus, (1988-2006)
- Palmer, Agnes**, Ext Home Economist Emeritus, (1970-1992)
- Palmerhall, Juanita**, Assistant Professor Emeritus, (1985-1996)
- Parker, Eugene**, Associate Professor Emeritus, (1966-2002)
- Parker, W. Ronald**, Extension Department Head Emeritus, (1980-2005)
- Patton, John**, Professor Emeritus, (1977-1994)
- Payne, James**, Professor Emeritus, (1971-2011)
- Peabody, Ted**, County Director Emeritus, (1954-1986)
- Peralta, Felipe**, Associate Professor Emeritus, (1987-2010)
- Perrow, Cecelia**, Associate Campus Director Emeritus, (1979-2000)
- Perrow, Michael**, Associate Professor Emeritus, (1984-1997)
- Pettibone, Timothy**, Dean Emeritus, (1970-2001)
- Phillips, Keith**, Professor Emeritus, (1968-1992)
- Pieper, Rex**, Professor Emeritus, (1963-1997)
- Popp, Anthony**, Academic Department Head Emeritus, (1981-2010)
- Powell, Bobby**, County Director Emeritus, (1956-1982)
- Powell, Richard**, Professor Emeritus, (1978-2002)
- Pratt, Eric**, Associate Professor Emeritus, (1978-2002)
- Ram, Budh**, Professor Emeritus, (1966-1997)
- Ramsey, David**, Assistant Professor Emeritus, (1984-2002)
- Rankin, Bobby**, Academic Department Head Emeritus, (1961-2000)
- Raub, Barbara**, Professor Emeritus, (1977-2011)
- Ray, Earl**, Professor Emeritus, (1961-1995)
- Reece, Jerald**, Professor Emeritus, (1969-1988)
- Reed, Newman**, Professor Emeritus, (1973)
- Reidinger, Charles**, Provost Emeritus, (1982-1997)
- Reilly, James**, Academic Department Head Emeritus, (1990-2001)
- Richards, Norma**, Academic Department Head Emeritus, (1972-1990)
- Richardson, Albert**, Associate Professor Emeritus, (1955-1991)
- Richman, David**, College Professor Emeritus, (1983-2011)
- Richman, Fred**, Professor Emeritus, (1963-1989)
- Riley, Nancy**, County Program Director Emeritus, (1960-1988)
- Roberson, Robert**, Professor Emeritus, (1959-1991)
- Roby, Douglas**, Professor Emeritus, (1974-2002)
- Rodriguez, Roy**, Professor Emeritus, (1978-2005)
- Rogers, Joseph**, Professor Emeritus, (1968-1992)
- Rohner, Lawrence**, Associate Professor Emeritus, (1973-2002)
- Rohovec, Elizabeth**, Associate Professor Emeritus, (1990-2001)
- Roman, Joanne**, Extension Home Economist Emeritus, (1993)
- Romero, Alfonso**, Associate Professor Emeritus, (1983-1997)
- Rose, Joshua**, Professor Emeritus, (1981-2008)
- Ross, H. Eugene**, Professor Emeritus, (1971-1986)
- Roubicek, Rudolf**, Professor Emeritus, (1982-1989)
- Rundell, Richard**, Academic Department Head Emeritus, (1975-2011)
- Runyan, Craig**, Extension Associate III Emeritus, (1986-2011)
- Rush, Lucy**, Ext. Home Economist Emeritus, (1948-1988)
- Ruttle, Jack**, Professor Emeritus, (1964-1990)
- Ryberg, Jacalyn**, Academic Department Head Emeritus, (1998-2009)
- Sabo, Kenneth**, Professor Emeritus, (1978-2002)
- Sachse, James**, Extension Specialist Emeritus, (1968-1994)
- Sadler, Louis**, Associate Professor Emeritus, (1969-2002)
- Sagal, Paul**, Academic Department Head Emeritus, (1977-1997)
- Sais, James**, Extension Department Head Emeritus, (1959-1992)
- Sallee, Alvin**, Professor Emeritus, (1976-2010)
- Sanders, Walter**, Professor Emeritus, (1972-1994)
- Saunders, Jack**, Dean Emeritus, (1962-1980)
- Schemnitz, Sanford**, Professor Emeritus, (1975-1996)
- Schickedanz, Jerry**, Dean Emeritus, (1976-2005)
- Schnoor, Ruth**, Professor Emeritus, (1990-2005)
- Schulte, Lana**, County Program Director Emeritus, (1976-2002)
- Schvaneveldt, Roger**, Professor Emeritus, (1977-2000)
- Seager, William**, Professor Emeritus, (1966-1999)
- Seiler, Betty**, Associate Professor Emeritus, (1992-2003)
- Shannon, Emory**, Extension Specialist Emeritus, (1965-1990)
- Shannon, James**, Associate Professor Emeritus, (1978-2002)
- Shaskevich, Olga**, Professor Emeritus, (1966-1994)
- Sherman, Robert**, Professor Emeritus, (1986-1999)
- Shipp, Jackie**, Associate Professor Emeritus, (1987-2004)
- Shouman, Ahmad**, Professor Emeritus, (1960-1986)
- Sieminski, Veronica**, Serials Librarian Emeritus, (1955-1982)
- Simmons, Mary Louise**, Interim Associate Dean Emeritus, (1978-2001)
- Simons, John**, Professor Emeritus, (1965-1995)
- Sittel, Mary**, Professor Emeritus, (1969-1992)
- Skaar, Marcia**, Professor Emeritus, (1987-2005)
- Skaar, Robert**, Associate Professor Emeritus, (1992-2005)
- Skidmore, Herrol**, Professor Emeritus, (1978-1993)
- Smith, Barry**, Professor Emeritus, (1986-2006)
- Smith, Curtis**, Extension Specialist Emeritus, (1988-2010)
- Smith, David**, Professor Emeritus, (1970-1999)
- Smith, Elaine**, Associate Professor Emeritus, (1989-1999)
- Smith, Garmond**, Professor Emeritus, (1968-1994)
- Smith, Phillip**, Professor Emeritus, (1964-2000)
- Smolleck, Howard**, Professor Emeritus, (1979-2006)
- Snodgrass, Milton**, Professor Emeritus, (1972-1990)
- Somoza, Joseph**, Associate Professor Emeritus, (1973-1995)
- Southward, G. Morris**, Professor Emeritus, (1975-1993)
- Spellenberg, Richard**, Professor Emeritus, (1968-2000)
- St. Aubyn, Jacklyn**, Associate Professor, (1993-2011)
- Stabler, Karen**, Department Head Emeritus, (1988-2002)
- Staffeldt, Mary**, Associate Professor Emeritus, (1984-2000)
- Staski, Edward**, Professor Emeritus, (1983-2009)
- Steeb, Roger**, Associate Professor Emeritus, (1978-2001)
- Steelman, James Eldon**, Associate Dean Emeritus, (1968-1998)
- Stephan, Cookie**, Professor Emeritus, (1978-2002)
- Stephan, Walter**, Professor Emeritus, (1978-2002)
- Stile, Stephen**, Professor Emeritus, (1978-1996)
- Strange, Patricia**, Associate Professor Emeritus, (1990-2001)
- Stromberg, Thorsten**, Associate Professor Emeritus, (1967-2000)
- Stueven, Neil**, Associate Editor Emeritus, (1969-1988)
- Swartz, Charles**, Professor Emeritus, (1965-1997)
- Taylor, Danny**, Associate Professor Emeritus, (1976-2002)
- Taylor, Javin**, Assoc. Academic Dept. Head Emeritus, (1977-2002)
- Thielman, Ronald**, Professor Emeritus, (1969-1995)
- Thode, Edward**, Professor Emeritus, (1963-1986)
- Thomas, Gerald**, President Emeritus, (1970-1984)
- Thomas, John**, Professor Emeritus, (1961-1986)
- Thompson, Eula**, Professor Emeritus, (1984-1998)
- Thompson, James**, Professor Emeritus, (1992-2007)
- Thompson, Wiley**, Professor Emeritus, (1968-1999)
- Thornberry, Leslie**, Professor Emeritus, (1983-2005)



**Throneberry, Glyn**, Professor Emeritus, (1955-1986)  
**Tombes, Averett**, VP Econ Develop Emeritus, (1988-1998)  
**Torres, Reynaldo**, County Program Director Emeritus, (1983-2011)  
**Townley, Charles**, Professor Emeritus, (1990-2011)  
**Townsend, David**, Professor Emeritus, (1968-1990)  
**Townsend, Linnie**, Professor Emeritus, (1969-1989)  
**Traina, Leonard**, Professor Emeritus, (1967-1998)  
**Treat, Kathryn**, Assistant Director Emeritus, (1977-1998)  
**Trevathan, Wenda**, Regents Professor Emeritus, (1983-2008)  
**Turner, Paul**, Assistant Professor Emeritus, (1972-2002)  
**Urquhart, N. Scott**, Professor Emeritus, (1970-1991)  
**Valentine, Jack**, County Program Director Emeritus, (1982-2001)  
**Van Heuvelen, Alan**, Professor Emeritus, (1964-1993)  
**Vance, Irvin**, Professor Emeritus, (1970-1989)  
**Vargas, Javier**, County Program Director Emeritus, (1971-1999)  
**Vaughn, Roy**, Extension Specialist Emeritus, (1975-2000)  
**Vest, Gerald**, Professor Emeritus, (1978-1997)

**Waelti, John**, Academic Department Head Emeritus, (1990-2001)  
**Walker, Carol**, Associate Dean/Director Emeritus, (1964-1996)  
**Walker, Elbert**, Professor Emeritus, (1957-1987)  
**Wallace, Edward**, District Director Emeritus, (1953-1983)  
**Wallace, Joe**, Professor Emeritus, (1972-1993)  
**Wang, Joseph**, Professor Emeritus, (1980-2004)  
**Wanzer, Orville**, Professor Emeritus, (1959-1985)  
**Warren, Margaret**, County Program Director Emeritus, (1966-1996)  
**Welch, John**, Professor Emeritus, (1964-1994)  
**Wells, Delbert**, Professor Emeritus, (1973-1989)  
**Wetzel, Bonnie**, Associate Professor Emeritus, (1973-1998)  
**Whatley, Arthur**, Professor Emeritus, (1970-1996)  
**White, Harvey**, Academic Department Head Emeritus, (1990-2001)  
**White, Kenneth**, Academic Department Head Emeritus, (1970-2008)  
**Whitford, Walter**, Professor Emeritus, (1964-1993),  
**Wieters, Charles David**, Associate Professor Emeritus, (1985-2006)  
**Wiget, Andrew**, Professor Emeritus, (1983-2011)  
**Wilkins, Ralph**, Professor Emeritus, (1973-1990)

**Willem, Raymond**, Associate Professor Emeritus, (1976-1998)  
**Williams, Francis**, Professor Emeritus, (1965-2000)  
**Williams, James**, Professor Emeritus, (1979-2006)  
**Williamson, Leon**, Professor Emeritus, (1977-1989)  
**Willman, Elliott**, Professor Emeritus, (1979-2010)  
**Wilson, Cheryl**, Associate Dean Emeritus, (1968-2006)  
**Winn, Russell**, Associate Professor Emeritus, (1988-2011)  
**Winters, John**, Assistant Professor Emeritus, (1976-1986)  
**Wisner, Robert**, Professor Emeritus, (1963-1999)  
**Wooden, Sharon**, Professor Emeritus, (1970-1995)  
**Wright, Robert**, Professor Emeritus, (1965-1992)  
**Wright, Susan**, Extension Specialist Emeritus, (1974-2001)  
**Wuersching, T. Karl**, Professor Emeritus, (1969-1996)  
**Yates, W. Leo**, Extension Specialist Emeritus, (1970-1988)  
**Zellefrow, William**, Associate Professor Emeritus, (1968-1992)  
**Zimmerman, James**, Professor Emeritus, (1961-1988)  
**Zucker, Naida**, Professor Emeritus, (1973-2001)  
**Zund, Joseph**, Professor Emeritus, (1970-2001)

# INDEX

<b>A</b>	
Absences (see attendance) .....	23
Academic achievement, recognition of .....	15
Academic appeals .....	23
Academic calendar .....	inside back cover
Academic misconduct .....	24
Academic probation/suspension .....	24
Academic record .....	24
Academic standing .....	24
Academic suspension .....	25
Academic warning .....	24
Accounting and Information Systems, Dept. of .....	9593
Accreditation, university and college .....	1, 50, 92, 100, 110, 130
ACT, information on .....	9
ACT, and English language proficiency .....	4
required scores for admission .....	1
ACT score, and basic academic skills .....	2
Adjusted credit option .....	22
and removal of academic probation .....	24
Administrative offices .....	inside front cover
Administrative withdrawals .....	23
Admissions	
basic academic skills .....	2
by GED test .....	2
international students .....	3
nondegree .....	3
of high school students .....	2
provisional .....	1
regular student .....	1
Admission of former students (readmission) .....	2
Admission restrictions for international students .....	4
Admissions regulations .....	1-3
Advanced placement credit .....	20
Aerospace Studies, Dept. of .....	51
Aggie Access Card .....	9
Aggie Cash .....	9
Agricultural Economics and Agricultural Business, Dept. of .....	29
Agricultural and Extension Education, Dept. of .....	30
Agricultural, Consumer and Environmental Sciences, College of .....	28
Animal and Range Sciences, Dept. of .....	31
Animation (see Creative Media Institute) .....	65
Anthropology, Dept. of .....	52
Apartments, campus .....	10
Appeal, transfer credit .....	3
Appeals board, academic .....	24
Application deadlines, general admission .....	2
housing .....	10
Application for degree .....	27
Applied course work and credit limitations .....	51
Applied Mathematics .....	51
Applied Studies, Bachelor of .....	128
Archives and Special Collections, library .....	8
Armed Forces and resident status .....	19
Art, Dept. of .....	53
Arts and Sciences, College of .....	50
Associate degree programs .....	12
<b>Astronomy, Dept. of .....</b>	
<b>B</b>	
Astronomy, Dept. of .....	56
Attendance, class .....	23
veterans (and satisfactory progress) .....	20
Auditing courses .....	3, 22
<b>Bachelor degree completion programs .....</b>	
<b>Bachelor degrees. See Degrees</b>	
Basic academic skills .....	2, 20
Biochemistry .....	60
Biology, Dept. of .....	57
Board of Regents (BOR) .....	inside front cover
Borderlands Historical Collection, library archives .....	8
Business, College of .....	92
<b>C</b>	
Calendar, academic .....	inside back cover
Campus Activities .....	9
Career Services .....	10
Catalog degree requirements for graduation .....	26
Certificate of Distinction, honors program .....	135
Certificate programs	
Honors .....	136
Community Colleges .....	138
Challenge (see Credit by Examination) .....	22
Changes in registration .....	23
Cheating .....	24
Chemical Engineering, Dept. of .....	111
Chemistry and Biochemistry, Dept. of .....	60
Civil Engineering, Dept. of .....	112
Class load .....	20
and satisfactory progress .....	21
Class rank (classification) .....	20
CLEP credit (College Level Examination Program) .....	9, 20, 22
and basic academic skills .....	20
Code of Conduct, University .....	23
Co-Curricular Transcript Program (see campus activities) .....	9
Colleges, NMSU	
Agricultural, Consumer and Environmental Sciences .....	28
Arts and Sciences .....	50
Business .....	92
Community .....	138
Education .....	100
Engineering .....	110
Extended Learning .....	128
Health and Social Services .....	130
Honors .....	135
Commencement, attendance at .....	27
Common Core, New Mexico General Education .....	3, 15
Communication Studies, Dept. of .....	62
Community college transfers .....	2
Community Colleges, Office of .....	138
Complaint procedures	
academic appeals .....	23
grievance .....	23
transfer credit .....	2
Computer Engineering, Klipsch School of Electrical and .....	114
Computer services and resources, student (see Information and Communication Technologies) .....	12
Computer Science, Dept. of .....	62
Consortium for Environmental Education and Technology Development (WERC) .....	112

Cooperative education.....	6, 10, 11
Corbett Center Student Union (CCSU).....	9
Costs.....	4
Counseling Center.....	11
Counseling and Educational Psychology, Dept. of.....	102
Course	
challenge credits and graduation requirements.....	22
descriptions.....	139
fees.....	5
Creative Media Institute (CMI).....	65
Credit, transfer.....	2
Credit by examination.....	22
Credit hour defined (university credits).....	20
Credit hour requirement (satisfactory progress).....	21
Credit for military service.....	22
Criminal Justice, Dept. of.....	66
Crimson Scholars Program.....	15
Curriculum and Instruction, Dept. of.....	102
<b>D</b>	
Dean's report of academic achievement.....	15
Deferred payments	
of tuition and fees.....	5
financial aid.....	6
Deficiencies, basic academic skills.....	2
Degree	
application for.....	27
associate.....	12
candidacy.....	27
completion program.....	8
requirements (see graduation requirements).....	26
Degrees, Associate	
Art and Graphic Design.....	12
Arts.....	12
Arts in Heritage Interpretation.....	12
Criminal Justice.....	12
Education.....	12
Fine Arts.....	12
Pre-business.....	12
Degrees, Bachelor	
Bachelor of Accountancy.....	93
Bachelor of Applied Studies.....	128
Bachelor of Arts	
Anthropology.....	52
Art.....	53
Biology.....	57
Chemistry.....	60
Chicano Studies.....	78
Communication Studies.....	62
Computer Science.....	62
Dance.....	106
Economics.....	67, 94
English.....	67
Foreign Languages.....	78
Government.....	75
History.....	76
Journalism and Mass Communications.....	77
Philosophy.....	86
Physics.....	87
Psychology.....	88
Sociology.....	89
Theatre Arts.....	90
Women's Studies.....	90
Bachelor of Business Administration	
Economics.....	94
Finance.....	96
General Business.....	97
Information Systems.....	93
International Business.....	94
Management.....	97
Marketing.....	98
Bachelor of Community Health.....	130
Bachelor of Conservation Ecology.....	40, 57
Bachelor of Creative Media.....	65
Bachelor of Criminal Justice.....	66
Bachelor of Fine Arts.....	53
Bachelor of Individualized Studies.....	128
Bachelor of Information and Communication Technology.....	118
Bachelor of Music.....	83
Bachelor of Music Education.....	84
Bachelor of Science	
Biology.....	57
Biochemistry.....	60
Chemistry.....	60
Computer Science.....	62
Environmental Science.....	42
Geography.....	71
Geology.....	73
Genetics.....	42, 57
Mathematics.....	81
Microbiology.....	57
Physics.....	87
Bachelor of Science in Agriculture	
Agricultural Biology.....	32
Agricultural Economics and Agricultural Business.....	29
Agricultural and Extension Education.....	30
Agronomy.....	42
Animal Science.....	31
General Agriculture.....	28
Horticulture.....	42
Natural Resource Economics Policy.....	29
Soil Science.....	42
Turfgrass Science and Management.....	42
Wildlife Science.....	40
Bachelor of Science in Athletic Training Education.....	106
Bachelor of Science in Chemical Engineering.....	111
Bachelor of Science in Civil Engineering.....	112
Bachelor of Science in Education	
Communication Disorders.....	108
Early Childhood Education.....	101
Elementary Education.....	102
Secondary Education.....	103
Special Education.....	109
Teaching Physical Education.....	106
Bachelor of Science in Electrical Engineering.....	114
Bachelor of Science in Engineering Physics.....	88, 115
Bachelor of Science in Engineering Technology.....	118
Bachelor of Science in Environmental Science.....	42
Bachelor of Science in Family and Consumer Sciences	
Clothing, Textiles, and Fashion Merchandising.....	34
Family and Child Science.....	34
Family and Consumer Sciences Education.....	35
Food Science and Technology.....	39
Human Nutrition and Dietetic Science.....	35
Bachelor of Science in Hotel, Restaurant, and Tourism	
Management.....	48
Bachelor of Science in Industrial Engineering.....	124
Bachelor of Science in Kinesiology.....	106
Bachelor of Science in Mechanical Engineering.....	125
Bachelor of Science in Nursing.....	131
Bachelor of Science in Surveying Engineering.....	118
Bachelor of Social Work.....	133
Degrees, joint.....	13
Designated associate degrees.....	12
Developmental courses and basic academic skills.....	20
Developmental courses and Applied Credit Limitation.....	51
Digital filmmaking (see Creative Media Institute).....	65
Dining services.....	5, 9
Directory information and privacy rights.....	23
Disabilities, students with, and housing.....	10
Disciplinary probation and suspension.....	25
Distance Education.....	8, 128
Dormitories. <i>See</i> residence halls.....	9
Dropping courses.....	22
Dual Credit.....	2
<b>E</b>	
Early admission.....	2
Early Childhood Education	
bachelor degree.....	101
Economics and International Business, Dept. of.....	67, 94
Education, College of.....	100
Educational Management and Development, Dept. of.....	105
Electrical and Computer Engineering, Klipsch School of.....	114
Email, student.....	11
Elementary education.....	102
Emeriti.....	297
Engineering, College of.....	110

Engineering Physics, Dept. of .....	115	Grievances, procedure for initiating.....	23
Engineering Technology, Dept. of .....	118	<b>H</b>	
English, Dept. of .....	67	Health and Social Services, College of .....	130
English basic academic skills .....	20	Health care, International students.....	4
English language proficiency.....	4	Health Center, Campus .....	10
English language programs.....	4	Health insurance .....	5
Enrollment restrictions and probation.....	24	Health Science, Dept. of.....	130
Entomology, Plant Pathology, and Weed Science, Dept. of .....	32	Hearing Center, Speech and .....	8
Environmental Education and Technology		High school requirements for admission .....	1
Development (WERC), A Consortium for .....	112	High school students and early admission.....	2
Exam Files, test taking assistance .....	9	High school transcripts.....	1
Expenses, estimating.....	6	History, Dept. of .....	76
Expulsion .....	25	Historical collections (see NMSU Library) .....	8
Extended Learning, College of .....	128	Holidays .....	inside back cover
Evaluation of transfer credits .....	2	Home school students .....	1
		financial aid.....	6
<b>F</b>		Honor List, Dean's .....	15
Faculty.....	286	Honors College.....	135
FAFSA (see Financial Aid).....	6	Honors	
Failure to complete assignments .....	23	graduation with .....	15, 135
Family and Consumer Sciences, Dept. of .....	33	program.....	15, 135
Family housing .....	10	Hotel, Restaurant, and Tourism Management, School of.....	48
Fees,		Housing and Residential Life.....	9
application for degree.....	27	Housing rates .....	5
cooperative education program.....	6, 10, 11	Human Performance, Dance and Recreation, Dept. of.....	106
course.....	5	<b>I</b>	
general .....	5	ICT, Information and Communication Technologies .....	11
health and activity .....	5	Illness, and incomplete grade.....	21
optional.....	5	Incomplete grade .....	21
transcripts .....	27	Independent studies.....	22
Finance, Dept. of.....	96	Industrial Engineering, Dept. of .....	124
Financial aid.....	6	In-state tuition at western universities (WICHE).....	9
Financial support, International students.....	4	Insufficient course preparation, change in registration.....	23
Fish, Wildlife and Conservation Ecology, Dept. of .....	40	Insurance	
Food services .....	5	supplemental .....	5
Foreign language requirement (see second language requirement).....	50	international students.....	4
Foreign language, major in .....	78	International Student Services.....	3
International student admissions and policies.....	3	Internships .....	11
International students, financial support .....	4		
health care coverage.....	4	<b>J</b>	
Freshmen		Joint degrees.....	13
Major Scholarships.....	7	Journalism and Mass Communications, Dept. of.....	77
New Student Programs .....	11	Junior college transfers .....	2
<b>G</b>		<b>K</b>	
GED, General Education Development.....	2,9	Klipsch School of Electrical and Computer Engineering .....	114
GED, admission by .....	2	<b>L</b>	
General Education.....	15	Languages and Linguistics, Dept. of.....	78
and basic academic skills.....	20	Late payment, penalty for.....	5
Common Core, New Mexico.....	2, 15	Late registration, penalty for .....	5
NMSU course listing .....	16	Law (see Prelaw).....	51
Geography, Dept. of.....	71	Legislative Lottery .....	7
Geological Sciences, Dept. of.....	73	Libraries, Branson and Zuhl.....	8
GMAT, test .....	9, 11	Linguistics .....	78
Golf Management, Professional PGA .....	98	Loans, Financial Aid.....	6
Government, Dept. of.....	75	<b>M</b>	
Grade point average.....	22	Mail service, Corbett Center.....	9
improving (see adjusted credit option).....	22	Majors, academic .....	26
transfer credits.....	2	Majors <i>See</i> Degrees	
repeating courses.....	21	Management, Dept. of .....	97
Grade		Marketing, Dept. of .....	98
incomplete (I).....	21	MAT, Miller Analogies Test.....	9
RR.....	21	Math	
S/U option .....	21	advanced placement exam.....	21
Grades, defined.....	21	basic academic skills.....	20
Grading system, university.....	21	developmental courses.....	21
Graduate		Mathematical Sciences, Dept. of.....	81
courses, undergraduate enrollment in .....	25	Mathematics placement exam .....	21
degrees offered .....	12	MCAT, Medical College Admission Test .....	9
students, provisional, and nondegree status.....	3	Meal plans (see dining) .....	5, 9
study by seniors.....	25	Meal rates .....	5
Graduation		Mechanical Engineering, Dept. of .....	125
commencement and summer school completion .....	27	Media Services.....	8
requirements .....	26	Mentors, student .....	11
with honors .....	15, 27	Military Science, Dept. of.....	83
Grants, Financial Aid .....	6	Military & Veterans Programs .....	18
Grant Aid (see Student Support Services TRIO Program).....	11	Military service, credit for .....	22
GRE, Graduate Record Exam.....	9		
Greek Life (see campus activities).....	9		



Minors	
academic	26
recognition of	26
Misconduct, academic	24
Misrepresentation in applications and academic misconduct	24
Music, Dept. of	83

**N**

National Student Exchange, credit transfer	3
National Student Exchange (NSE) Program	9
New Student Programs	11
NMTA, New Mexico Teacher Assessment	9
Nondegree admission	3
Nondegree status, changing from	3
Nursing, Dept. of	136

**O**

Off-campus learning (see Distance Education)	8, 129
Online courses (TAOS)	8
Outcomes assessment	23
Out-of-state students and legal jurisdiction	3
Overload, class	20

**P**

Parking	10
Payment of charges	5
Penalties, registration or payment	5
Personnel	286
Pharmacy (see Student Health Center)	10
Philosophy, Dept. of	86
Physics, Dept. of	87
Plagiarism	24
Plant and Environmental Science	42
Political science (see Government)	75
Post Office (see Corbett Center Student Union)	9
PPST, Pre-professional Skills Test	9
PRAXIS Series: National Teachers Exam (NTE)	9
Prehealth studies	15, 51
Prelaw studies	15, 51
Preprofessional studies	15, 51
Prerequisite, defined	21
Preveterinary medicine	15, 28
Privacy rights	23
Probation, disciplinary/academic	24
Professional Golf Management	98
Program planning, student responsibility	25
Program/Degree requirements	25
Psychology, Dept. of	88

**R**

Radio Station, KRUX-FM	9
Range Sciences, Dept. of Animal and	31
Rank, class	20
Readmission	2
Reciprocal tuition agreement (see WEU and WICHE)	2
Recognition of academic achievement	15
Reference and Research Service (see NMSU Library)	8
Refunds	5
Registration, payment	5
Regulations, academic	20
Religion courses, credit transfer	2
Repeating courses	21
Required Courses	
New Mexico General Education Common Core	15
Viewing a Wider World	17
Reserve Officers' Training Corps (ROTC)	20, 51, 83
Residency requirements, Servicemember's Opportunity College	19
Resident and nonresident status	6
Armed Forces members	6
Resources for Students	8
Responsibility for planning academic program	25
Retention rates	2
Returned checks	5
Rio Grande Historical Collections (RGHC), library archives	8
Room rates	5
RR grade	21

**S**

S/U grade option	22
Sales and Solicitation Policy (see campus activities)	9
Satisfactory progress	21

Scholarships, and other aid	6
Second language requirement	50
Service Learning Project	136
Servicemember's Opportunity College (SOC)	19
Student Accessibility Services	8
Social security numbers	23
Social Services, College of Health and	130
Social Work, School of	133
Sociology, Dept. of	89
Special Collections, library	8
Special Courses	285
Special Education/Communication Disorders, Dept. of	108
Speech and Hearing Center	8
<i>Student Handbook</i> (see campus activities)	9
Campus Health Center	10
Student performance, attendance and	23
Student responsibility	3, 25
Student services, programs and facilities	10
Student Success Centers-Hardman/Zuhl	11
Student Support Services	11
Student teaching	101
Study abroad	9
Summer courses and suspension	25
Summer session dates	inside back cover
Summer session fees	5
Supplemental Health Insurance	5
Supplementary Majors	
Applied Mathematics	51, 81
Chicano Studies	51, 78
Latin American Studies	51, 78
Law and Society	15, 75
Linguistics	51, 78, 83
Suspension	
academic	25
disciplinary probation and	25
of financial aid	7
transfer student transcripts	2

**T**

TAOS (Technology Assisted & Off-site Education)	8
Teacher certification, and nondegree credit	3
Test taking, Student Support Services	9
Testing Services	9
Tests, information and registration materials	
ACT, American College Testing Assessment	1, 9
CLEP, College Level Examination Program	9, 22
GED, General Education Development	2, 9
GRE, Graduate Record Exam	9
MAT, Miller Analogies Test	9
MCAT, Medical College Admission Test	9
NTE, PRAXIS Series: National Teacher Exam	9
NMTA, New Mexico Teacher Assessments	9
PPST, Pre-Professional Skills Test	9
TOEFL, Test of English as a Foreign Language	4
Theatre Arts, Dept. of	90
Transcripts	1, 2, 3, 27
Transcripts and payment of charges	5
Transfer	
among New Mexico institutions	2
community college	2
guides and catalogs	2
Junior College	2
New Mexico General Education Common Core	2
Transfer credit	
appeal, complaint procedure	3
basic academic skills	2, 20
evaluation of	2
National Student Exchange	3, 9
Transferring courses	
Business courses	3, 93
Early Childhood Education courses	3, 101
to fulfill New Mexico General Education Common Core	2
within degree programs	3
Transfer students	2
academic probation	25
eligibility for Crimson Scholar Program	135
Teacher Education Program	100
TRIO Program, Student Support Services	11
Tuition and fees	4
payroll deductions	5
Tutoring service	11
Two-year programs	12, 139

**U**

University history and mission	1
University Honors Programs	15, 135

U.S. Citizenship and Immigration Services.....3

**V**

Veteran

active duty and veterans ..... 18  
 students, and tuition ..... 19  
 Credit for Military Service ..... 19

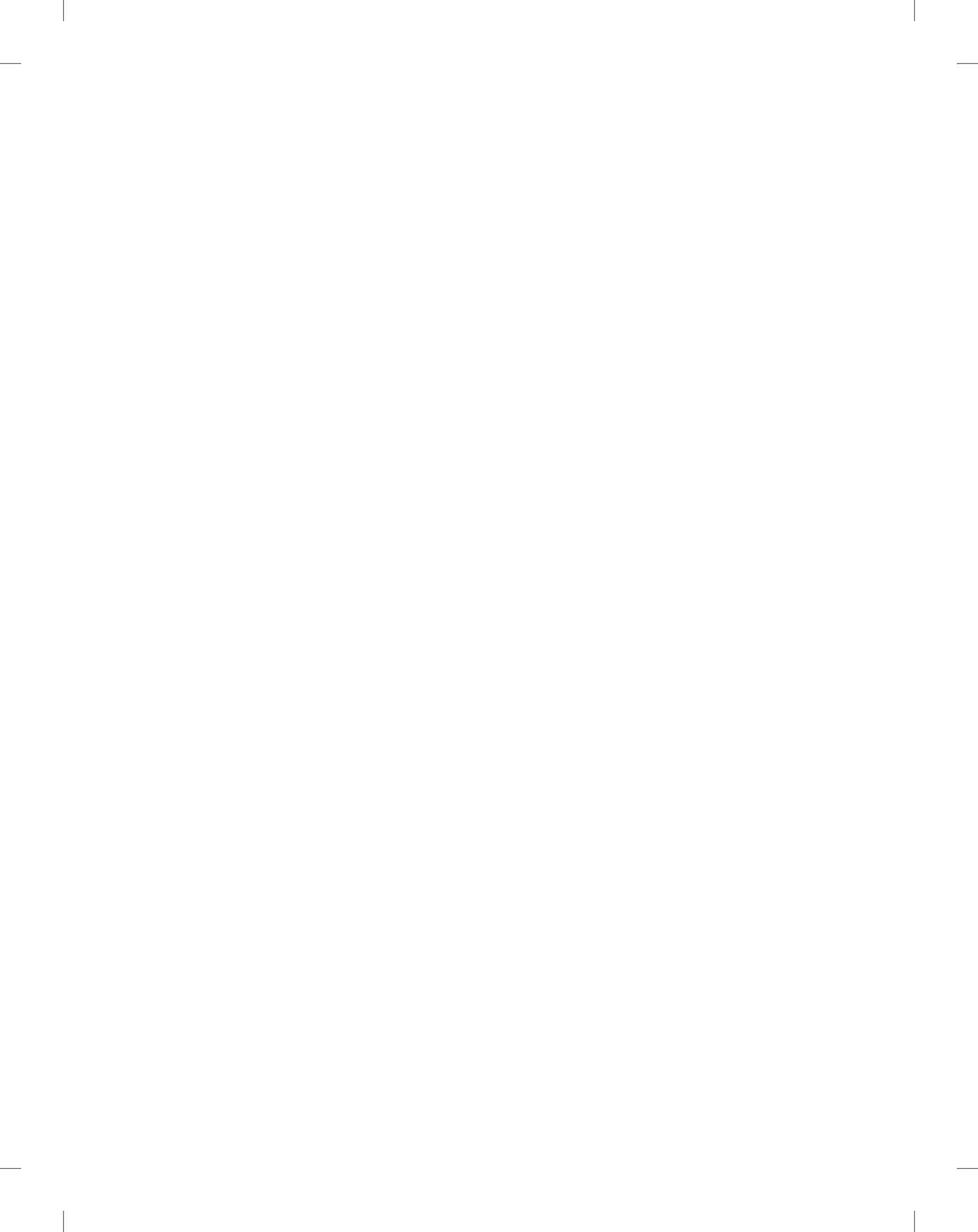
Veterans

attendance and satisfactory progress ..... 19  
 Veterans Educational Assistance, changes in registration ..... 19  
 Veterinary medicine (Preprofessional training)..... 28  
 Viewing A Wider World  
 requirements ..... 17  
 course listings ..... 17

Visa regulations (see Office of International Programs).....3

**W**

W grade ..... 21, 23  
 and change in registration..... 23  
 WAVE: Wellness, Alcohol and Violence Education .....9  
 WERC..... 112  
 Wellness and Fitness Fee .....5  
 Western Interstate Commission for Higher Education (WICHE).....9  
 Western Undergraduate Exchange Program (WUE).....2  
 Withdrawal from NMSU ..... 23  
 Women Studies, Dept. of..... 90  
 Work-Study Programs .....7







# NEW MEXICO STATE UNIVERSITY ACADEMIC CALENDAR 2012-2013

## Fall Semester 2012

August 23 - December 14, 2012

Campus Housing Opens.....	August 19
Faculty Report.....	August 20
Fall Convocation.....	August 21
Instruction Begins.....	August 23
Late Registration.....	August 23
Deadline for Filing Degree Application.....	August 31
<i>(Students meeting requirements at end of fall)</i>	
Labor Day Holiday.....	September 3
Deadline for Registration/Course Addition.....	September 4
Last Day to Drop Course with "W".....	October 16
<i>(Except courses carrying designated dates)</i>	
Last Day to Withdraw from the University.....	November 16
Thanksgiving Holiday for Students.....	November 19-23
EXAM WEEK.....	December 10-14
Last Day of Classes.....	December 14
Commencement.....	December 15
Campus Housing Closes.....	December 15
Final Grades Due.....	December 18

## Spring Semester 2013

January 17 - May 10, 2013

Faculty Report.....	January 10
Curriculum study & improvement of instruction.....	January 10-11
Campus Housing Opens.....	January 13
Spring Convocation.....	January 15
Program/Registration for New Students.....	January 16
Instruction Begins.....	January 17
Late Registration.....	January 17
Martin Luther King Holiday.....	January 21
Deadline for Filing Degree Application.....	January 25
<i>(Students meeting requirements at end of spring)</i>	
Deadline for Registration/Course Addition.....	January 29
Last Day to Drop Course with "W".....	March 12
<i>(Except courses carrying designated dates)</i>	
Spring Break.....	March 25-29
Spring Holiday.....	March 29
Last Day to Withdraw from the University.....	April 19
EXAM WEEK.....	May 6-10
Last Day of Classes.....	May 10
Commencement.....	May 11
Campus Housing Closes.....	May 11
Final Grades Due.....	May 14

## Summer Semester 2013

May 23 - August 3, 2013

Campus Housing Opens.....	May 22
Registration for New Students.....	May 22
Faculty Report.....	May 22
Instruction Begins.....	May 23
Memorial Day Holiday.....	May 27
Deadline for Registration/Course Addition.....	May 30
Last Day to Drop Course with "W".....	June 27
Independence Day Holiday.....	July 4
Deadline for Filing Degree Application.....	July 5
Last Day to Withdraw from the University.....	July 19
Last Day of Classes.....	August 2
Campus Housing Closes.....	August 3
Final Grades Due.....	August 6

## Holidays for Administrative Offices 2012-2013

Labor Day.....	September 3
Thanksgiving.....	November 22-23
Winter Holiday.....	Dec. 24, 2012-Jan 1
Martin Luther King Holiday.....	January 21
Spring Holiday.....	March 29
Memorial Day Holiday.....	May 27
Independence Day Observance.....	July 4



New Mexico State University  
University Admissions  
MSC 3A  
P.O. Box 30001  
Las Cruces, NM 88003-8001

nmsu.edu  
3-12/16659

MEDIA MAIL

NEW MEXICO STATE UNIVERSITY

UNDERGRADUATE CATALOG

2012-2013

Live, Learn and Thrive.™



# New Mexico State University Undergraduate Catalog 2012-2013