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New Mexico State University Grants
Course Catalog 2021 - 2022
(Effective Summer 2021 through Spring 2029)

1500 N. Third Street
Grants, New Mexico 87020
Phone: (505) 287-6678
Fax: (505) 287-2329
TDD: (505) 287-7981
http://grants.nmsu.edu

Academic programs at NMSU Grants are available to all students regardless of 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.

The NMSU Grants Undergraduate Catalog is available online at http://grants.nmsu.edu.

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

Accreditation

New Mexico State University has been accredited by The Higher Learning Commission (HLC) since 1926. The HLC may be contacted at:

The Higher Learning Commission
230 North LaSalle St., Suite 7-500
Chicago, IL 60604-1411
Phone: (800) 621-7440

International Students

International Student Admission

International students are an important and valuable part of the NMSU community. International students enjoy all the rights, privileges and protections of domestic students. They are subject to all the same responsibilities and regulations as their fellow domestic students. However, some special policies are applicable only to international students. The Office of International Student and Scholar Services (ISSS) is responsible for ensuring the visa and admissions requirements are met and explaining university standards for admission. Some students not seeking degrees, such as international exchange students, may also work directly with the Office of Education Abroad.

Federal Regulations

An international student is any individual attending NMSU while present in the United States on a non-immigrant student visa (F-1, F-2, J-1, J-2, H-4, NATO visas, and possibly others such as students in temporary protected status).

Lawful permanent residents (green card holders) should present documentation of their status to University Student Records and go through the same admission process as U.S. citizens.

The United States Department of Homeland Security has established rules for students in non-immigrant status, such as those with F-1 or J-1 visa types. Some of these rules include:

1. For immigration purposes, each student must maintain full-time student status
   a. Full time status for fall and spring semesters is defined as 12 or more credits for undergraduates (only 3 online credits can apply to the full-time requirement).
   b. Full time status for summer is defined according to NMSU requirements (only 3 online credits can apply to the full-time requirement for students beginning their program in the summer).
   c. Exceptions possible for final semester. Consult ISSS officials for more details.

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 ISSS Office. This record must indicate the student’s current living address, phone number, and email address.

4. Prior to admission, a prospective international student must demonstrate the following:

5. Academic ability to succeed in the chosen course of study.

6. Adequate financial support to complete the chosen course of study.

7. English language proficiency as defined by the university.

University Procedures for International Students

Regular Undergraduate Admission (Degree Seeking)

International students are subject to the same admissions standards as all other NMSU students, but some additional requirements apply. This section addresses those additional requirements. Visit https://issn.nmsu.edu/ for more information.

Applications for admission that include the transfer of credits earned at a non-U.S. university must include a professional Foreign Credential Evaluation (FCE) report from a member institution of the National Association of Credential Evaluation Services (NACES) for every transcript from a foreign secondary school and/or university attended. The ISSS department highly recommends that applicants consider using SpanTran for their FCE. NMSU has worked with SpanTran to provide applicants with clear understand of which evaluation is needed. SpanTran provides an applicant portal to track and access evaluations. SpanTran is a long standing member of NACES. For more information please visit https://spanside.secure.force.com/SpantranApplication

English Language Proficiency Requirements

For full undergraduate admission to the university, 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), or a score of
95 on the Duolingo English test for all international students both non-degree and degree seeking.

A waiver of the TOEFL/IELTS requirement may be considered for:

1. Students who are native speakers of English.
2. Students from the following countries will be exempt from providing a TOEFL score for admission purposes. However, NMSU retains the right to require the applicant/student to take the English Language Placement Test if deemed necessary:
   a. Anguilla, Antigua, Australia, Bahamas, Barbados, Barbuda, Belize, Bermuda, Botswana, Caicos Islands, Cameroon (Anglophone), Canada (except Quebec), Cayman Islands, Christmas Islands, Cook Island, Dominica, England, Eritrea, Fiji, Gambia, Ghana, Grand Cayman Islands, Grenada, Grenada and the Grenadines, Guernsey, Guyana, Ireland, Israel, Jamaica, Jersey, Kenya, Kiribati Islands, Lesotho, Liberia, Malawi, Malta, Mauritius, Micronesia (Federated States of), Montserrat, Namibia, Nauru, New Zealand, Nigeria, Norfolk Island, Papua New Guinea, Philippines, Scotland, Sierra Leone, Singapore, Solomon Islands, South Africa, St. Christopher, St. Helena, St. Kitts and Nevis, St. Lucia, St. Vincent & Grenadines, Swaziland, Tanzania, Trinidad & Tobago, Tristan da Cunha Island, Turks & Caicos Islands, Uganda, Virgin Islands, Wales, Zambia, Zimbabwe
3. Students completing high school in the United States who (a) have attended the high school for at least two full years and (b) have scored in at least the 75th percentile in English on the ACT.
4. Students transferring from a two-year college, community 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).
5. Students scoring a 70%—(3) or better in English with the International Baccalaureate.

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

**English Language Placement Test**

Placement in writing classes for international students is determined by the results of the English Language Placement Test (ELPT).

Based on the results of the ELPT, the student is either assigned to ENGL 1105M (a bridge course designed to ensure success in ENGL 1110M), or is allowed to enroll directly into ENGL 1110M (for multilingual students). Please note that these classes are only available on NMSU’s Las Cruces Campus. International students excused from ENGL 1105M will be required to take ENGL 1110M. The student may then be required to complete one or more regular English classes as required for a particular degree. Completing basic English courses at other U.S. institutions does not automatically satisfy the ENGL 1110M requirement. Equivalencies for ENGL 1105M and equivalencies for ENGL 1110M or ENGL 1110G are determined by the University Student Records Office, who may refer exceptional cases to the English Department in the College of Arts and Sciences.

In cases of dramatic discrepancies between TOEFL/IELTS scores and the ELPT, the ELPT results shall determine placement.

**Proof of Financial Support**

The university reserves the right to require advance deposit of funds for any period deemed reasonable prior to granting admission. Each prospective international student must submit a current financial support document with his/her application. This document must show that:

1. The person providing the financial support has the necessary funds.
2. The funds can be transferred from the student’s home country to the United States.
3. Proof of adequate financial support should be sent directly to ISSS.

**Admission Restrictions**

International student admission may be prohibited based on one of the following conditions:

1. The dean of a chosen college, the department head of a chosen major, and the President 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, college or community college.
3. Academic advisors may not be available.
4. Sufficient classroom-based courses are not available to maintain visa status (e.g., courses are online).

All application material, including letters of recommendation, transcripts, national examination scores, transcripts from colleges or universities (with an English translation), and test scores (including the TOEFL or IELTS) should be sent directly to the NMSU International Student and Scholar Services Office at isss@nmsu.edu. Please note that transcripts, test scores and foreign credential evaluations sent directly from an applicant/student to NMSU will be considered unofficial. To be considered official, transcripts, test scores and foreign credential evaluations must come directly from the school, testing agency or evaluation agency. All documents can be emailed to isss@nmsu.edu.

**New International Student Orientation (NISO)**

New International Student Orientation (NISO) is a mandatory online orientation course for new undergraduate and graduate international students to NMSU. Orientation takes place each semester before classes begin.

NISO covers important legal rules and requirements students must follow to maintain their F-1 status, as well as information about acclimating to New Mexico State University and the Las Cruces community. During NISO, new international students are required to submit certain documentation and physically check in with the International Student and Scholar Services Office.

New international students should activate their NMSU email address https://myaccount.nmsu.edu/activation and reach out to the ISSS office at isss@nmsu.edu for specific NISO dates and further orientation information.

For full consideration for undergraduate admission, applicants are subject to the following deadlines:

<table>
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<th>Date</th>
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<tr>
<td>July 1 (application initiated)</td>
<td>Fall Semester</td>
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<tr>
<td>July 15th (all documents submitted)</td>
<td>Fall Semester</td>
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<tr>
<td>October 1st* (Study Abroad and CELP Programs)</td>
<td>Spring Semester</td>
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<tr>
<td>November 15th (application initiated)</td>
<td>Spring Semester</td>
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December 1st (all documents submitted)

*Admissions to summer terms in not available to new undergraduate international students due to the limited number of face to face course offerings.

*New international graduate students seeking admission to summer terms are encouraged to work closely with their department and The Graduate School to assure that the student is enrolled in a schedule that meets federal enrollment guidelines

* Contact the Office of Education Abroad for exchange program admission deadlines.

Graduate International Students

For more information on graduate international student procedures, please visit the Graduate School section of this catalog.

International Exchange Students

An Exchange Student is defined as a visiting student, who is coming to NMSU for one semester to one Academic Year, but is not seeking a degree. An Exchange Student typically comes to NMSU from one of NMSU’s partner universities or from one of NMSU’s partner consortiums.

All international exchange students are required to be enrolled in NMSU approved health insurance. Office of Education Abroad will enroll the students and bill the insurance amount to the student's account.

Exchange Students are required to attend a mandatory Orientation before courses begin. This will be scheduled and facilitated by the Office of Education Abroad; abiding by guidelines set forth by the US government per J-1 visa requirements.

Exchange students are subject to the same English Language Proficiency policies outlined in the section on University Procedures for International Students.

Application Process for International Exchange Students

Prior to admission to NMSU, a prospective international exchange student must be nominated from their home university, complete an application with the Office of Education Abroad (OEA) and submit their required documents. The process is as follows:

1. Nomination for exchange must be submitted by the Home University to the Incoming Exchange Coordinator by March 15 for Fall semester and September 15 for Spring semester. Please see your home university exchange coordinator for more information and to complete the nomination process.

2. Once nomination is received, students will be directed to make an account at the OEA website: https://oea.nmsu.edu/students/incoming-exchange-students/applying-to-nmsu/.

3. The student is then required to complete the Exchange Student Nomination Form Questionnaire and upload the following documents:
   a. Passport
   b. Transcripts (in English)
   c. Financial Document showing proof of $5000 per semester attended. ISEP students do not have to provide the financial documents
   d. Current TOEFL scores (2 years or less), see below for acceptable scores.

4. All international students, regardless of status, must apply for Admissions to NMSU https://isss.nmsu.edu/adm-step-1/. Once the Student’s OEA application has been approved, OEA Staff will submit the documents listed above to Admissions on behalf of the student.

Academic Restrictions

The majority of the NMSU catalog applies to Exchange Students, with the following exceptions:

- Exchange students must take the English Language Placement Test.
- Courses must be taken at Main Campus only. Community college courses, including DACC are not available to Exchange Students.
- The Nursing Department is the only department that is strictly off limits to exchange students, with case-by-case exception by the department and this would have to be approved well in advance of the student being nominated.
- Exchange students are required to abide by all pre-requisite requirements and class size restrictions (i.e., if a course is closed when the student goes to register, an exception cannot be made)
- Online courses are restricted due to visa requirements (no more than 3 credits can be taken online. Additional fees will apply).

Miscellaneous Regulations

1. All international students are required to have student health insurance. Insurance will be automatically billed to the student’s account each semester. (See https://isss.nmsu.edu/index-3/health-insurance/ for more information.)

2. New international students are not permitted to register until all ISSS requirements are met, including attending orientation and taking the English Language Placement Test (when applicable, see English Language Proficiency Requirements section). All international students, are therefore, required to report to the campus to which they were admitted. The following are the offices that a student may need to report to:
   a. Las Cruces campus: International Student & Scholar Services, 152 Breland Hall Tel. (575) 646-2834, isss@nmsu.edu. (Note: Exchange students need to report to the Office of Study Abroad in 132 Garcia Center.)
   b. Doña Ana Community College: International Student & Scholar Services, 152 Breland Hall (exchange students need to report to the Office of Study Abroad in 132 Garcia Center)
   c. Alamogordo Community College: Office of Student Services, Student Services Building, second floor
   d. Carlsbad Community College: Office of Student Services, 150 University Drive, Room 111
   e. Grants Community College: Office of Student Services, Walter Martinez Building, Main Office Complex

3. Students in non-degree exchange J-1 visa status must be engaged full time in a prescribed course of study. Consult OEA for more details.
4. All international students are required to register at the Aggie Health and Wellness Center within a week of arriving to undergo a TB test or submit results of a current TB test done in the home country within a week of arriving. Guidelines will be provided by the Aggie Health and Wellness Center.

Transfer Students
NMSU evaluates eligible courses for NMSU transfer equivalency from postsecondary institutions that are regionally accredited or are candidates for regional accreditation. Credits from non-accredited institutions may be evaluated, by the student’s academic college, after the student has shown acceptable performance at NMSU for two semesters of full-time enrollment. Academic colleges, within NMSU, may have additional requirements for course transfer. Please contact the College Dean’s Office for more information.

Transfer students are subject to the same graduation requirements as all NMSU baccalaureate-degree (bachelor’s) seeking students. Thirty (30) of the last 36 credit hours for every degree to be awarded from NMSU must be earned at NMSU.

General Requirements for Transfer Credits
Credit will be awarded for transfer courses as follows:

1. 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.
2. A grade of D or better is required to grant NMSU credit for courses identified as having an NMSU equivalent.
3. Colleges or departments may require a grade of C- or higher for courses required in their programs.
4. Each college determines which transferred courses are applicable toward a degree or a minor.
5. Transcripts may need to be reevaluated when students transfer from one NMSU campus or College to another.
6. Currently enrolled students must obtain prior approval from their academic department head and dean before courses taken at another institution will be applied toward meeting NMSU graduation requirements.

Student Responsibility
Planning for effective transfer with 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.

NMSU maintains a database (http://nmsudirect.nmsu.edu/) of commonly transferred courses from numerous institutions. Courses included in the database at the time the student is admitted to NMSU will automatically transfer to NMSU, provided the student follows all guidelines (see Currently Enrolled NMSU Students below). If a transferred course does not exist in the database, it is the student’s responsibility to provide the departmental faculty with sufficient materials (e.g. catalog description, syllabi, etc.) to determine if any of the department’s courses may be equivalent to the credits being transferred.

Currently Enrolled NMSU Students
Currently, enrolled students must obtain prior approval from their academic department head and dean before courses taken at another institution will be applied toward meeting NMSU 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 colleges/universities may be transferred for elective credit (“E”) to NMSU. Registration for these courses is separate from the NMSU System’s registration and is conducted by the religious center offering the course.

No more than 6 credits in such courses may be transferred to NMSU. To transfer earned credits to NMSU, the student must do the following:
1. Obtain written approval from the student’s department head and academic dean prior to registration for the course
2. Count the credit in the course as part of the total semester load
3. Upon completion of the course, request that the institution granting the credit send a transcript of the credit to the Undergraduate Admissions Office at the NMSU-Las Cruces.

Graduate Transfer Credits
For more information about transferring graduate credits please visit the Graduate School section of this catalog.

Transfer Students- Admission Requirements
1. Transfer students must provide official transcripts sent directly from the University Student Records Office of each previously attended institution to the NMSU Admissions Office or official transcripts will be accepted if delivered in person only if in a sealed envelope from the granting institution and with current issue date. Official transcripts must be received before the date of registration.
2. Students who have not earned credit for the first semester of college English may be required to provide ACT or SAT scores directly to the NMSU Admissions Office.
3. Students with 24 or more college credit hours must have a cumulative grade point average (GPA) of at least 2.0.
4. Students with 24 or fewer college credit hours must fulfill the transfer and freshman admission requirements.
5. Students must be eligible to return to their last college or university.
6. Any student who conceals the fact that he/she has attended another college or university and has not submitted a transcript for each institution—whether or not credit was earned—will be subject to immediate suspension.
7. NMSU will uphold academic and judicial suspensions from other colleges and universities.

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 all NMSU-Las Cruces campus baccalaureate-seeking students. This includes the required minimum number of 48 upper division credits from courses numbered 300 or above and the requirement that the last 30 credits must be earned through this university.
NOTE: Students currently enrolled at an NMSU Community College (Alamogordo, Dona Ana, Carlsbad or Grants) are not considered transfer students. If a student wants to change campuses they must submit a Change of Campus form.

**Evaluation of Transfer Credits**

NMSU has 3 levels of course credit transfer. Once a student has been admitted to NMSU, they are awarded credit for equivalent courses accordingly. Following award of credit as described in Levels 1 and 2 (below), application of any additional credit transfer via specific Program Articulation agreements will be approved by the student’s academic department and dean, including additional courses in the major that may count toward a degree or a minor but, are not included in a Program Articulation.

**Level 1**

Automatic course-to-course equivalency credit transfer from colleges/universities in the state of New Mexico, per the New Mexico Higher Education Department (NM HED) articulation modules. Eligible credits for Level 1 transfers will be automatically applied to the student's transcript, provided minimal grade requirements are met. Level 1 equivalency includes:

1. New Mexico State Common Core general education courses
2. New Mexico State articulated academic programs (e.g. Business, Early Childhood Education, and NM Nursing Education Curriculum).

**Level 2**

Faculty established NMSU course-to-course equivalency transfer

1. Equivalency is determined by the designated departmental faculty in the department/program in which the equivalent course is offered, and may include a review of course description, syllabus and/or interaction with the other institution. If a course equivalency does not exist in the database, it is the student’s responsibility to provide departmental faculty with sufficient materials to determine if any of the department’s courses may be equivalent to the credits being transferred.
2. Credit for courses transcripted with NMSU equivalency may/will count toward the degree/major.
3. Credit for courses with no NMSU equivalence will be transcripted as 100E (lower level) or 300E (upper level) and may or may not count as credit toward a specific degree. Departmental faculty may accept the "E" course as elective credit toward the degree, or as a substitute for a course not applied universally.

**Level 3**

Specific Program Articulation between an NMSU program/department and a program/department at another institution.

1. Program Articulation with other institutions is monitored at the department/program level in accordance with articulation agreements and may include credit transfers that are applicable only to the specific degree articulated (i.e. credit for courses may change depending on degree student declares).
2. Because Level 3 transfer credit is degree specific, transcripts must be re-evaluated when a student changes their major or college. Level 3 transfer credits are not applied universally.

**National Student Exchange (NSE)**

Courses transferred back to the NMSU System by students participating in the National Student Exchange (NSE) Program will be evaluated as NMSU (system) 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.

**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 University Student Records Office or from the Deputy Secretary for Academic Affairs, Higher Education Department, 2048 Galisteo St., Santa Fe, New Mexico 87505-2100.

**Transfer of International Credit**

Applications for admission that include the transfer of credits earned at a non-U.S. university must include a professional foreign credit evaluation report from a member institution of the National Association of Credential Evaluation Services (NACES) for every transcript from a foreign secondary school and/or university attended.

**Tuition, Fees, and Other Expenses**

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

**Additional Fees:**

- Admission Application fee: $20
- Course delivery (per credit): $25
- Certificate fee: $10
- Degree application fee: $25
- Degree application late filing fee: $25
- Late Registration Fee Base Cost: $25

**Course Fees (Fees Assessed per Course)**

See each term’s Registration Guide for lists of courses with additional fees. [https://grants.nmsu.edu/](https://grants.nmsu.edu/)

**Payment Plan**

Tuition, fees and other charges posted to the student account may be deferred and paid over the course of the semester by signing up for a payment plan. Students with an account balance of $200 or greater must sign up for a payment plan by the “Last Day to Drop a Course and Receive a 100% Refund” date which is also known as the Census date. There is a $25 non-refundable enrollment fee and a down payment due at the time of enrollment for fall and spring semesters and a down payment for the summer semester. Equal monthly payments are due on the 15th of each month of the semester. A $10 late fee is assessed to the student account for late, partial or missed payments. Students who are required to sign up for a payment plan and fails to do so by the deadline will have their current semester courses cancelled.

**Payment of Charges**

By enrolling in classes at NMSU, a student makes a financial commitment to pay the tuition and fee charges associated with his/her enrollment. The enrollment action constitutes a financial obligation between the student and NMSU and that all proceeds of this agreement will be used for education purposes and constitute an education loan pursuant to 11 U.S.C 523(a) (8). Terms and Conditions of Course
Registration are posted on the University Accounts Receivable (UAR) website and available at time of Registration. Payments can be made by mail, web, telephone, or in person at University Accounts Receivable. Cash, checks, money orders and limited types of credit cards are accepted. All financial aid received must be paid towards balances owed. Additional penalty charges will be assessed for failure to make payments when due. The University reserves the right to cancel registration of any student who fails to pay, when due, any indebtedness to the institution if not completed by the deadlines as outlined on the UAR website under important dates related to your Student Account. Transcripts and diplomas will be withheld until all financial obligations are paid in full. Students are prohibited from registering for a term/semester until all previous debts due to the University are paid in full.

Tuition Adjustments, Refunds and Forfeitures

Students officially withdrawing from all courses or dropping a course(s) during a semester or term are eligible for a 100-percent refund of tuition and fees through the deadlines listed online as outlined on the University Student Records website under Important Dates for Students for each term. Students withdrawing from a course(s) after that deadline will not be eligible for a refund and will remain liable for payment of full tuition and fee charges. Non-attendance does not constitute an official course drop or withdrawal. It is the student’s responsibility to withdraw from the university and/or drop a course if he/she decides to not attend once enrollment has taken place. All charges due to NMSU must be paid before refunds or adjustments will be permitted.

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

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

Delinquent and Prior-Term Balances

NMSU reserves the right to cancel the registration of any student who fails to pay, when due, any indebtedness to the institution.

Transcripts will be withheld until all financial obligations are paid in full.

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 $625) and personal expenses (estimated at $1,251).

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 a nearby off-campus work station may pay for the student wellness/fitness as if they were a part-time student enrolled in 1-5 credits.

Ways to Qualify for Lower Tuition Rates

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, NM Administrative Code (NMAC) 5.7.18. The University Student Records Office administers residency. Information on the following programs and offices that administer the reduced rate program may be obtained from the University Admissions, the University Financial Aid and Scholarship Services.

- American Indian Agreement
- Athletic Grant
- Colorado-Arizona Reciprocal Agreement
- Dual Credit
- Fire Fighter and Peace Officer Survivor Scholarship
- Foreign Military Dependent
- Foreign Military Spouse
- Foreign Military Stationed in New Mexico
- Foster Care
- Graduate Assistantship
- Immigrant Student (NM HS GRAD)
- Military Dependent
- Military Spouse
- Military Stationed in New Mexico
- NM Competitive Scholarship
- Part-time Students
- Senior Citizen Waiver
- Summer Session
- Texas 135
- Veteran Waiver
- WRGP
- Western Undergraduate Exchange

WUE states include Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, North Dakota, Oregon, South Dakota, Utah, Washington, Wyoming and the Commonwealth of the Northern Mariana Islands. For more information about any of the above ways to qualify for lower tuition rates please contact the University Accounts Receivable Office or the University Student Records Office.

VA Pending Payment Compliance

In accordance with Title 38 US Code 3679(e), this educational institution adopts the following additional provisions for any students using U.S. Department of Veterans Affairs (VA) Post-9/11 G.I. Bill® (Ch. 33) or Vocational Rehabilitation & Employment (Ch. 31) benefits, while payment to the institution is pending from VA. This educational institution will not:

- Prevent the student’s enrollment;
- Assess a late penalty fee to the student;
- Require the student to secure alternative or additional funding;
Tuition, Fees and other Expenses

for that semester. The fees for the Las Cruces campus are all listed in the website. It must be completed and submitted by the designated deadline as well as pay graduation fees for each degree being sought. The degree candidates are required to submit an “Application for Degree”.

Any students that are in their final semester of classes are considered Applying for a Degree

requirements. These requirements will include the minimum GPA, total credits and specific course requirements for graduation.

For specific graduation requirements for any degree offered at NMSU please see the Degrees, Majors, Minors and Other Academic Programs of Study section, as well as the departmental sections for those requirements. These requirements will include the minimum GPA, total credits and specific course requirements for graduation.

Applying for a Degree

Any students that are in their final semester of classes are considered degree candidates and are required to submit an “Application for Degree” as well as pay graduation fees for each degree being sought. The application for Degree form is available online through the MyNMSU website. It must be completed and submitted by the designated deadline for that semester. The fees for the Las Cruces campus are all listed in the Tuition, Fees and other Expenses section of the catalog, once a student submits the application the fee will be included in the total cost for the semester or session in which the candidate anticipates completing their degree requirements.

If degree requirements are not completed during the semester/ session the student originally applied for, the student must then reapply and pay the appropriate fees. A $50 late fee applies to applications received after the application deadline, and no applications will be accepted after the posted deadline date.

A student must specify which catalog they are using for their degree requirements in order for the university to determine if the requirements are met and if a degree can be certified. The latest date for substitution or waiver of required courses for degree candidates is two weeks after the last date of registration for full or summer terms.

Contact Information

For more information, contact:

University Accounts Receivable, MSC 4570
New Mexico State University
PO Box 30001
Las Cruces, NM 88003-8001
Phone: (575) 646-4911
https://u.ar.nmsu.edu/tuition_fees

NMSU Grants

1500 N. Third Street
Grants, NM 87020
Phone: (505) 287-6653
https://grants.nmsu.edu/business-office/

NMSU Grants

Student Resources

At NMSU Grants, we understand that it is important for all of our students to have access to the information they need to be successful. We have put together the following collection of student resources so that students can concentrate on their academics and not worry about searching endlessly for important documentation and information. If you have any questions about the content of this student resources page or would like to see materials added, please contact the leadership at the campus. The students, faculty, and staff at NMSU Grants are all a part of a community that supports and helps our students get what they need from their education. The idea of going back to school can be overwhelming, but we are here to help our students reach their full potential.

Graduation Requirements

Graduation Requirements

For specific graduation requirements for any degree offered at NMSU please see the Degrees, Majors, Minors and Other Academic Programs of Study section, as well as the departmental sections for those requirements. These requirements will include the minimum GPA, total credits and specific course requirements for graduation.

Applying for a Degree

Any students that are in their final semester of classes are considered degree candidates and are required to submit an “Application for Degree” as well as pay graduation fees for each degree being sought. The application for Degree form is available online through the MyNMSU website. It must be completed and submitted by the designated deadline for that semester. The fees for the Las Cruces campus are all listed in the Tuition, Fees and other Expenses section of the catalog, once a student submits the application the fee will be included in the total cost for the semester or session in which the candidate anticipates completing their degree requirements.

If degree requirements are not completed during the semester/ session the student originally applied for, the student must then reapply and pay the appropriate fees. A $50 late fee applies to applications received after the application deadline, and no applications will be accepted after the posted deadline date.

A student must specify which catalog they are using for their degree requirements in order for the university to determine if the requirements are met and if a degree can be certified. The latest date for substitution or waiver of required courses for degree candidates is two weeks after the last date of registration for full or summer terms.

Attendance at the Commencement Ceremony

Commencement is a symbolic ceremony, that students can elect to participate in after they have applied for their degree. Participation in commencement does not, in itself, mean that a student is considered an NMSU graduate. In order to be awarded a degree, a student must fulfill university requirements as determined by academic colleges. The degree will reflect the graduation date from the application for degree in which all degree requirements were determined by the academic colleges.

The academic colleges will confirm students’ eligibility to participate in the commencement ceremony that is held at the end of the fall and spring semesters. Eligible candidates who are in the process of completing their final degree requirements and degree recipients from the previous summer session will participate in the fall ceremony. Students who are in the process of completing their final degree requirements in the spring can participate in the spring ceremony. However, Bachelor degree candidates that wish to participate in a spring commencement, prior to completing degree requirements in summer school may do so if they meet the following conditions:

1. Receive permission from the Dean of their college
2. Show a minimum cumulative grade-point average of 2.0
3. Only need 12 or fewer credit hours to complete their degree requirements
4. These remaining credit hours must be offered in the upcoming summer schedule of classes
5. Submit a 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.

Academic Regalia

Each college may approve distinctive symbols to be worn by the top 10 percent of its graduates at commencement. Only one symbol may be worn by each graduate. In addition, the student with the highest honors in each college may wear a crimson-colored gown. No other symbolic additions to academic regalia are allowed without the approval of the Academic Deans Council.

Diploma

All fees and bills owed the university must be paid in full before a student may receive a diploma or official transcripts. The degree title and major(s) will be printed on the diplomas, in accordance to the degree application award, determined by the academic colleges. Academic honors will also
be printed on the diplomas below the degree and major(s). The name on
the diploma will reflect the student's current official NMSU records. Name
changes are only processed for currently admitted students.

Diplomas will be mailed to graduates approximately eight weeks after the
individual colleges certify the degree requirements and the final grades
have been processed by the University Student Records Office. The
diploma will be mailed to the address specified on the degree application,
unless an address change was requested before the last day of the
semester.

**Associate’s Degree**

Associate’s degrees are of two types. The academic associate’s
degree prepares students to transfer to a baccalaureate program and
generally includes credits toward the first two years of a four-year
degree. Academic associate’s degrees include the Associate of Arts, the
Associate of Science, and other named degrees that link to a specific
major (the Associate of Education, for example). Other associate degrees,
typically called Associate of Applied Science, prepare students for entry
into the workforce. Credits for these programs may or may not apply
toward a four-year degree. Associate degree seeking students who are
interested in a dual degree should consult with their academic advisor.
The Associate of Arts and the Associate of Science degrees cannot be
earned together. The Associate of General Studies degree may not be
earned with other associate degrees.

Students interested in transferring to NMSU or another four-year
institution should check the appropriate sections of the university catalog
for more information.

Requirements for the two-year associate degrees are found in the
respective catalogs and sections concerning these degrees. The
following requirements apply to all associate degrees:

1. **Minimum Credit Hours**: a minimum of 60 credits (excluding “N” suffix
courses). Some programs of study require coursework in excess of the
60 credit-hour minimum.

2. **New Mexico General Education**- state mandated general education
courses (as specified in General Education section); such course are
designated with a “G”
   a. For Associates Degrees: 32-35 credits
   b. For Applied Associates Degrees: 15-18 credits

3. **GPA requirement**: Students must have a cumulative GPA of 2.0 or
better in all courses taken at NMSU or one of its community colleges.
   a. For Associates Degrees: students must earn a C- or better in
classes they take to meet the Basic Skills requirement (ENGL
   1110G and one of several math course options).
   b. For Applied Associate Degrees: Basic Skills requirements do not
apply, but if the student plans to pursue a Bachelor’s degree at
any point in the future it would be highly recommended.

4. **Residency** - A minimum of 15 of the 60 credits for the associate’s
degree must be completed at NMSU or one of its community
colleges. Individual academic programs may have additional
requirements.

5. **Major**: All requirements for at least one major field of study as
specified in the college and departmental sections of the respective
catalog.

**Associate Major**

An associate major, consisting of at least 18 credits, may include courses
from more than one department. Requirements for the Associate Majors
are specified in the respective Community College Catalogs.

**Certificate of Completion**

The Certificate of Completion requires a minimum of 16 credits (other
Title IV requirements must be met to be eligible for financial aid) and has
been approved through the academic review process. These courses can be
a subset of those required for a corresponding Applied Associates
Degree. These certificates are recorded on the student’s transcript.

Requirements for certificates are found in the respective catalogs and
sections concerning these programs. The following requirements apply to
all certificates.

1. **Minimum Credit Hours**: The number of credit hours varies from
certificate to certificate. Students must successfully complete the
total number of credit hours as outlined in the respective catalogs
and sections describing these certificates.

2. **GPA requirement**: Students must successfully complete all courses
for the certificate as outlined in the catalog. In addition, students
must have a cumulative GPA of 2.0 or better in all courses taken at
NMSU or one of its community colleges.

3. **Residency**: A minimum of 6 credits earned toward the certificate must
be completed at NMSU or one of its community colleges.

**Certificate of Achievement**

The Certificate of Achievement is a program of study less than 16
credits and is not eligible for Federal financial aid. This Certificate
provides employment related and/or career enhancing skills necessary
to succeed in a job or a chosen field of study. These courses can be a
subset of those required for a corresponding Certificate of Completion
or Applied Associates Degree. These certificates are recorded on the
student’s transcript. The following requirements apply to all certificates of
achievements:

1. **Minimum Credit Hours**: The number of credit hours varies from
certificate to certificate but must be fewer than 16 credits. Students
must successfully complete the total number of credit hours as
outlined in the respective catalogs and sections describing these
certificates.

2. **GPA requirement**: Students must successfully complete all courses
for the certificate as outlined in the catalog and have a cumulative
GPA of 2.0 or greater in all courses required for the certificate, but
may have a cumulative GPA of less than 2.0 for courses taken outside
of the certificate.

3. **Residency**: A minimum of 6 credits earned toward the certificate
must be completed at NMSU or one of its community colleges. If the
certificate requires fewer than 6 credits, all credits must be completed
at NMSU or one of its community colleges. Individual academic
programs may have additional requirements.

**The NMSU System Academic Regulations**

The following regulations are effective with the publication of all the
NMSU system catalogs, this includes the Las Cruces-Academic Catalog,
Alamogordo Community College, Carlsbad Community College, Dona
Ana Community College, and the Grants Community College catalogs.
All regulations in this section of the catalog pertain to all the campuses
housed with the NMSU System, this means that information for students pursuing Associate Degrees/Certificates, Bachelor’s Degree, and Graduate Degrees/Certificates is within the section of the catalog.

The regulations section is broken down into different areas:

- Academic Programs of Study
- Registration
- Academic Performance and Progress
- Grading
- Withdrawals
- Degree Applications, Graduation & Commencement
- Academic Standing and Probation
- Academic Misconduct and Grievances
- The University Student Records Office

NMSU offers Associate, Baccalaureate, Master’s and Doctoral degrees. NMSU also offers Certificates at the associate and graduate levels. Requirements for specific degrees and other designations are set forth by this catalog for the NMSU-Las Cruces (main) campus and the corresponding catalogs for the NMSU Community Colleges (Alamogordo, Carlsbad, Dona Ana and Grants).

Additional Degree Designations

As part of a degree program, students may also earn additional degree designations indicating fields of study such as majors, minors or concentrations. A major is defined as a recognized area of study in which there is an extensive and well-developed curriculum offered at the university, as well as adequate library resources and support services. A minor is based on courses that encompass a recognized field of study outside the student’s major. A concentration is based on a collection of coursework in an area that is part of a major program of study. Degrees and additional designations awarded, limited to majors, minors, and concentrations, will be noted on the student’s transcript.

Catalog Effective Period

Beginning with 2020-2021 catalog each subsequent annual catalog edition is effective Summer Session I through Spring Semester and is considered active for an eight year period for all campuses. Curricular requirements (course requirements and number of credits required) for a specific degree or other designation may be met by completing all of the course requirements as set forth by the catalog in effect at first matriculation, or any subsequent catalog, provided the selected catalog is considered active when the requirements for graduation are met. For all other matters, the current catalog is controlling. NMSU reserves the right to withdraw courses at any time, change fees, rules, calendar, curriculum, degree programs, degree requirements, graduation procedures and any other requirements affecting students. Except as otherwise stated here, changes will become effective whenever the proper authorities so determine and will apply to both prospective students and those already enrolled.

Application for Degree/Graduation or Certificate

Upon completion of all requirements for degrees and certificates, students will not receive their degrees automatically. In order to receive the degree or certificate, students must submit an application and pay the required fee in the semester in which the student expects to graduate or complete the degree or certificate requirements. Specified in the academic calendar for each semester is the deadline for all applications. The application must indicate/note all designations earned. After awarding of the degree, you cannot add any additional designations.

Students who will be completing two degrees/certificates in the same semester must apply for graduation and pay the fee for each degree separately. Students applying for graduate degrees or certificates must satisfy requirements as described in the Master’s, Certificates, and Doctoral Degree sections below.

Students who do not meet requirements or elect not to graduate after filing an application need to re-apply in a subsequent semester and pay another fee.

Multiple Degrees and Designations

A student may earn more than one degree or multiple degree designations by completing all of the requirements in an appropriate catalog for each degree or designation. Students completing requirements for more than one degree must apply for and pay the application fee for each degree to be awarded. Upon completion of all requirements, multiple majors for a single degree (e.g., B.A., Major in Art; Major in Anthropology) and multiple bachelor’s degrees (e.g., B.A. and B.S.) will be noted on the student’s academic record/transcript and may also be granted at one commencement.

Degree Revocation

The Board of Regents reserves the right to revoke a degree should it be determined upon investigation that the degree requirements were not properly met. A degree revocation must be in accordance with NMSU policy and related rules.

Honorary Degrees

Ceremonial Honorary Degrees may be awarded in accordance with NMSU policy and rules as set forth in the NMSU Regents Policy Manual and the related Administrative Rules and Procedures.

Community College Certificate

A Community College may offer two types of certificates, the Certificate of Achievement and/or the Certificate of Completion. Certificates may be awarded independently from any degree program.

Certificate of Achievement

The Certificate of Achievement is a program of study less than 16 credits and is not eligible for Federal financial aid. This Certificate provides employment related and/or career enhancing skills necessary to succeed in a job or a chosen field of study. These courses can be a subset of those required for a corresponding Certificate of Completion or Applied Associates Degree. These certificates are recorded on the student’s transcript. The following requirements apply to all certificates of achievements:

1. Minimum Credit Hours: The number of credit hours varies from certificate to certificate but must be fewer than 16 credits. Students must successfully complete the total number of credit hours as outlined in the respective catalogs and sections describing these certificates.

2. GPA requirement: Students must successfully complete all courses for the certificate as outlined in the catalog and have a cumulative GPA of 2.0 or greater in all courses required for the certificate, but
may have a cumulative GPA of less than 2.0 for courses taken outside of the certificate.
3. **Residency:** A minimum of 6 credits earned toward the certificate must be completed at NMSU or one of its community colleges. If the certificate requires fewer than 6 credits, all credits must be completed at NMSU or one of its community colleges. Individual academic programs may have additional requirements.

**Certificate of Completion**

The Certificate of Completion requires a minimum of 16 credits (other Title IV requirements must be met to be eligible for financial aid) and has been approved through the academic review process. These courses can be a subset of those required for a corresponding Applied Associates Degree. These certificates are recorded on the student's transcript.

Requirements for certificates are found in the respective catalogs and sections concerning these programs. The following requirements apply to all certificates.

1. **Minimum Credit Hours:** The number of credit hours varies from certificate to certificate. Students must successfully complete the total number of credit hours as outlined in the respective catalogs and sections describing these certificates.
2. **GPA requirement:** Students must successfully complete all courses for the certificate as outlined in the catalog. In addition, students must have a cumulative GPA of 2.0 or better in all courses taken at NMSU or one of its community colleges.
3. **Residency:** A minimum of 6 credits earned toward the certificate must be completed at NMSU or one of its community colleges.

**Associate’s Degree**

Associate’s degrees are of two types. The academic associate’s degree prepares students to transfer to a baccalaureate program and generally includes credits toward the first two years of a four-year degree. Academic associate’s degrees include the Associate of Arts, the Associate of Science, and other named degrees that link to a specific major (the Associate of Education, for example). Other associate degrees, typically called Associate of Applied Science, prepare students for entry into the workforce. Credits for these programs may or may not apply toward a four-year degree. Associate degree seeking students who are interested in a dual degree should consult with their academic advisor. The Associate of Arts and the Associate of Science degrees cannot be earned together. The Associate of General Studies degree may not be earned with other associate degrees.

Students interested in transferring to NMSU or another four-year institution should check the appropriate sections of the university catalog for more information.

Requirements for the two-year associate degrees are found in the respective catalogs and sections concerning these degrees. The following requirements apply to all associate degrees:

1. **Minimum Credit Hours:** a minimum of 60 credits (excluding “N” suffix courses). Some programs of study require coursework in excess of the 60 credit-hour minimum.
2. **New Mexico General Education:** state mandated general education courses (as specified in General Education section); such course are designed with a “G”
   a. For Associates Degrees: 32-35 credits
   b. For Applied Associates Degrees: 15-18 credits
3. **GPA requirement:** Students must have a cumulative GPA of 2.0 or better in all courses taken at NMSU or one of its community colleges.
   a. For Associates Degrees: students must earn a C- or better in classes they take to meet the Basic Skills requirement (ENGL 1110G and one of several math course options).
   b. For Applied Associate Degrees: Basic Skills requirements do not apply, but if the student plans to pursue a Bachelor’s degree at any point in the future it would be highly recommended.
4. **Residency** - A minimum of 15 of the 60 credits for the associate’s degree must be completed at NMSU or one of its community colleges. Individual academic programs may have additional requirements.
5. **Major:** All requirements for at least one major field of study as specified in the college and departmental sections of the respective catalog.

**Associate Major**

An associate major, consisting of at least 18 credits, may include courses from more than one department. Requirements for the Associate Majors are specified in the respective Community College Catalogs.

**Baccalaureate Degree (Bachelor’s Degree)**

A baccalaureate or bachelor’s degree provides students with a broad educational base as well as knowledge in a specific major field. Each college has unique degree requirements that are listed in the college’s designated section of this catalog. In addition to the College and Department requirements, students must complete each of the following degree requirements for every Bachelor’s Degree awarded by NMSU:

1. **Minimum Credit Hours:** a minimum of 120 credits (excluding “N” suffix courses)
2. **GPA requirement:** a minimum cumulative GPA of 2.0 in all courses taken at NMSU
3. **New Mexico General Education:** 32-35 credits of state mandated general education courses (as specified in General Education section); such course are designed with a “G”
4. **New Mexico State University's Viewing a Wider World:** 6 credits of Viewing a Wider World courses; such courses are designated with a “V”, or alternatives as specified in the Viewing a Wider World section
5. **Upper Division Courses:** a minimum of 48 credits in courses numbered 300-499/3000-4999.
6. **Residency** – Of the last 36 credits earned toward award of the degree:
   a. 30 credits must be completed at NMSU
   b. 21 credits must be upper division (300/3000 or above) and
   c. 12 of the 21 upper division credits must be within the student’s major.

**NOTE:** colleges or departments may require that more than 12 upper division credits be within the major and they may direct that a certain number of these credits be course specific.

7. **Major** – all requirements for at least one undergraduate major field of study, other than a supplemental major, as specified in the college and departmental sections of the catalog. As an undergraduate student seeking a baccalaureate degree you are expected to declare a major prior to earning 45 credit hours toward your degree. You should complete your general education requirements within your first 90 credit hours earned.
Second Baccalaureate Degree (Bachelor’s Degree)

Students seeking a second bachelor’s degree must complete all college, department, and major requirements for the second bachelor’s degree including residency. General Education requirements, including Viewer a Wider World, are waived for a second bachelor’s degree because those requirements are considered completed within the first bachelor’s degree earned. Credits earned toward a previous degree may be used to complete those requirements subject to any college and department specific limitations as described in the catalog.

Bachelor’s Degree Designations

Undergraduate Major

An undergraduate major consists of 24 or more credits within the major field, of which 18 credits must be upper-division courses, and may include courses from more than one department. Additional requirements for majors are specified in the college and department’s designated sections of this catalog.

Supplemental Major

A supplemental major consists of 24 or more credits of interdisciplinary coursework, of which at least 18 credits must be upper-division (300/3000-499/4999), and no more than 9 credits may be from the student’s major course of study. Additional requirements for supplemental majors are specified in the catalog listing of the departmental/college sections.

Undergraduate Minor

An undergraduate minor consists of 18 credits of course work, of which 9 credits must be upper-division (300/3000-499/4999). A minor encompasses courses that may be in a single department or interdisciplinary and are in a recognized field of study outside the student’s declared major. At least 9 upper-division credits of a minor must be completed at NMSU. Additional requirements for minors are specified in the college and department’s designated sections of this catalog. Minors cannot be earned after the degree has been conferred.

Undergraduate Concentration

A concentration consists of 12 or more credits of coursework in a specialty area that is related to a specific major field of study. At least 9 of the 12 credits must be upper-division (300/3000-499/4999), and at least 9 credits must be completed at NMSU. Additional requirements for concentrations are specified in the college and department’s designated sections of this catalog.

Distance Education Bachelor’s Degree Completion Program

A Bachelor Degree Completion Program allows students who have met the lower division requirements (100/1000 and 200/2000 level) of an undergraduate degree program to complete the remaining upper-division credits (300/3000 and 400/4000 level) through distance delivery courses offered by NMSU Las Cruces. Only selected degrees are available as degree completion programs. Students must complete all required lower-division (100/1000 and 200/2000 level) credits before they can be admitted to the Bachelor’s Degree Completion Programs. The program(s) normally require two years of upper division (300 and 400 level) coursework.

Graduating with Honors

For information about graduating with Honors, please refer to the Recognition of Academic Achievement section of this catalog.

Graduate Degrees

All graduate degrees are subject to rules and regulations of the Graduate School. Degrees will be certified by the Graduate School only upon the complete review and clearance of the candidate’s program of study.

Graduate Degree Designations

Graduate Major

A graduate major may include courses from more than one department, but as a minimum it must consist of at least 30 graduate credits. Additional requirements may be imposed by the State of New Mexico and New Mexico State University as specified in this Catalog.

Graduate Minor

A graduate minor is based on at least 9 graduate credits in courses that encompass a recognized field of study outside the student’s major. Departments may require certain courses to be a part of a minor and may exclude other courses.

Graduate Concentrations

A concentration is a collection of coursework in a specific area that is part of a degree program of study at NMSU. At the graduate level at least 9 of these 12 credits must be numbered 500/5000 or above. Only approved concentrations within a students’ department or program may be noted on a transcript.

Concentrations will not be added to a transcript after a degree is awarded. In order for the approved concentration to be noted on the student’s transcript, the following conditions must be met:

1. Request the concentration at the time they file their official program of study.
2. Identify the concentration on their official Application for Degree.

Graduate Certificates

A Graduate Certificate program requires 12-18 credits of coursework that is interrelated and designed to develop a focused skill or area of expertise but does not culminate in the awarding of a degree. Courses that comprise a graduate certificate must be regular approved courses offered by the University and must be numbered 450/4500 or above. A graduate certificate is indicated on the student's transcript.

Master’s Degree

New Mexico State University offers both academic and professional master’s degrees. A link to the list of all master’s degrees is provided in the Graduate School section of this catalog.

Underprepared students may be required to take additional general or discipline-specific undergraduate or graduate courses to prepare them for the advanced academic work necessary for success in graduate level courses in their chosen field. This may result in an extended graduation date.

Admissions to the Master’s Degree

The admission of a student into the Graduate School does not imply admission to candidacy for an advanced degree. The major department in which the student intends to become a candidate for a master’s degree
must determine the student's ability to pursue studies at the graduate level. Please see the Department(s) for specific requirements.

Program of Study
After the completion of one year of enrollment each new graduate student should prepare a complete program of study in consultation with the student's advisor.

Application to Candidacy
The program of study will formally list the curriculum requirements for degree completion and is required for application to candidacy. The program of study must be approved by the advisor, department, and academic dean and submitted to the Graduate School. The Program of study may specify the Catalog at the time of graduation, as long as the catalog is considered active. Otherwise, the current Catalog will be listed.

An Application for Admission to Candidacy must be filed with the Graduate School. This must be done before the completion of 12 credits of graduate coursework. The student must have a minimum cumulative GPA of 3.0 at the time the application is submitted. The application may specify the Catalog at the time of graduation, as long as the catalog is considered active. Otherwise, the current Catalog will be listed.

The student's program of study must:
1. Meet the requirements of the chosen catalog, including the regulations of the Graduate School and of the major department.
2. Be signed by the student, the student's advisor, department head, minor faculty if applicable, and academic dean.
3. List each course prefix/number, short title, credit hours and grades if available.

If the program of study does not comply with the departmental requirements or the potential degree audit, the program of study must be approved by the Dean of the Graduate School. The Program of Study is not required for master's programs if defined within the Star Degree Audit.

Credit Hour Requirement
A minimum of 30 credits is required for the master's degree. Most master's degrees require at least 15 credits in courses numbered 500/5000 or above. This includes thesis credits for any master's programs that include a thesis option. Master's programs involving a thesis, must include, either a minimum of 4 credits or a maximum of 6 credits of thesis. Please see the "Thesis" section for more information.

At least 15 credits for the master's degree must be for work in courses within the student's department. Additional credits may be selected from other fields to fit into a logical and justifiable program. However, courses that are used to remove deficiencies or satisfy prerequisites cannot be counted as requirements for a master's degree.

Coursework Requirement
Students must take coursework from a variety of faculty. Students may not take more than half of the minimum credits required for a master's degree with the same professor, excluding thesis credits.

All graduate students are required to register for a minimum of 1 credit of graduate coursework in their final semester. Please see the Tuition, Fees and Other Expenses section for more information.

Thesis Option
A thesis in the major field is recommended and may be required at the discretion of the department. A minimum of 4 credits and a maximum of 6 credits may be counted toward the requirements for a master's degree.

The final examination shall consist of an oral defense of the student's thesis as well as a general examination of the candidate's field of study.

- Continuous Enrollment- once registered, a student must continue to register for a minimum of 1 credit in thesis or graduate coursework each regular semester until the thesis is approved by the Graduate School and the copies have been accepted by the Branson Library binding section.

Graduate Committee for Thesis Option
The graduate committee for the master's degree consists of a minimum of three faculty members who hold, at least, a master's degree and meet the following criteria:

1. Committee chair:
   a. Must be from the student’s home department
   b. Must be a graduate faculty member
2. Committee member(s):
   a. May be from outside the student's home department
   b. Student's with a declared minor- may have the representative from a related area or be appointed by the Dean of the Graduate School.
   c. Must be a graduate faculty member
3. Dean's Representative:
   a. Must be a representative from a related area or appointed by the Dean of the Graduate School
   b. Must be a graduate faculty member

Finalizing the Master's Thesis
After successful completion of the final examination, electronic submission of the approved thesis must be submitted to ProQuest ETD, no later than the deadline posted to the Graduate School website. The form and style of the thesis must comply with the guidelines provided in Preparing your manuscript for submission, located at https://gradschool.nmsu.edu/wp-content/uploads/sites/5/2019/02/2.-Preparing-Your-Manuscript-for-Submission-Revised.pdf. The guidelines also contain detailed information on the thesis submission and approval process. The thesis is not complete until the Graduate School has accepted it electronically.

Professional Degree and Non-Thesis Final Examination
Each candidate will be given a final examination conducted by their graduate committee in accordance to the schedule provided by the Graduate School. It is the department's responsibility to ensure that the Report of Results for the Master's Professional or Non-Thesis Final Exam form is submitted to the Graduate School no later than ten working days after the exam.

The final examination format for the professional degrees and non-thesis option will be determined by the department, with the approval of the Dean of the Graduate School. If a department does not specify an examination format, the final examination will consist of an oral defense of the candidate’s field of study.

At the time of the final examination, a graduate student must have a cumulative GPA of at least 3.0 and must be enrolled for a minimum of one credit hour in the final semester; or if the student is writing a thesis, he or she must have completed all course work for the master’s degree.

NOTE: the cumulative GPA, will be calculated from NMSU graduate coursework only.
Any candidate who fails in the final examination may either:

1. Be granted a second examination, written or oral, after a lapse of at least one semester, only with a recommendation from the student’s advisor and approval from the Dean of the Graduate School.
2. Be excluded from further candidacy for the degree.
3. Failure in the second examination disqualifies a candidate from obtaining the degree.

Students in professional or non-thesis options may be required to pay a special exam fee in lieu of registering for 1 credit of graduate coursework. Please see the Tuition, Fees and Other Expenses section for more information.

**Time Limit**

Students must complete the master’s degree program within seven years (or eight successive summers) of the start of the degree, including completion of the master’s thesis or final project. Inclusion of any coursework more than seven years old at the time of the final examination will be at the discretion of the department.

**Master’s Accelerated Program (MAP)**

The master’s accelerated program provides an opportunity for academically qualified undergraduate students to begin working on a master’s degree during their junior and senior years while completing a bachelor’s degree. Typically, a bachelor’s degree requires four years to complete and a master’s degree requires an additional two years. The master’s accelerated programs allow students the opportunity to complete a graduate program in an accelerated manner.

Undergraduate students may apply for acceptance to a Master’s Accelerated Program available at New Mexico State University after completing 60 semester hours of undergraduate coursework of which a minimum of 25 semester credit hours must be completed at New Mexico State University and apply towards the undergraduate major. The grade point average must be a minimum of 3.0; departments participating in the master’s accelerated program may have requirements that exceed these minimum requirements. It is the student’s responsibility to meet with their financial aid advisor. Awards may be adjusted to reflect enrollment in an undergraduate/graduate program.

Graduate departments within the colleges may allow academically qualified undergraduate students to substitute a maximum of 12 graduate course credits for elective courses in an undergraduate degree program. Graduate programs have the discretion to use up to 12 credits of NMSU coursework (450/4500 level or higher) that can logically be applied towards the completion of master’s program of study. A grade of B or higher in this coursework will be required.

**Program Participation Requirements:**

1. Students must obtain prior approval by the graduate program
2. Student's course work must be general or discipline electives in the student's undergraduate course of study. No required courses from the undergraduate program will be accepted towards the Master's Accelerated Program.
3. Students will enroll in approved graduate level courses. If course(s) requires instructor approval, it is the student's responsibility to obtain necessary approval
4. Students participating in MAP are required to submit a completed Master’s Accelerated Program Referral Form to the Graduate School by the first Friday of classes, with all required signatures.
5. Students participate in the Developing New Scholars Program (DNSP) through the Graduate School. The DNSP program provides formal mentoring supporting application process to Graduate School. Upon awarding of the Bachelor's degree and formal admissions into a master's/graduate program at NMSU, the approved credits (up to 12) will be recorded on both the undergraduate and the graduate transcript.

**Interdisciplinary Master’s Degree**

Interdisciplinary studies, at New Mexico State University, are intended for individuals specializing in programs that require the integration of more than one discipline to fully engage in the field of study. The programs provide a mechanism to address emerging scholarship, innovation and research, as well as, allow graduate students to engage in emerging technologies that optimize their education outside the traditional disciplinary boundaries. An Interdisciplinary study takes advantage of traditional academic training within specific departments and also allows students to customize their own career preparation. In these programs, a coherent common core is expected and is intended to combine existing courses across disciplines to meet unique objectives.

The interdisciplinary studies option should not be used in cases where the applicants’ objectives can be realized by admission to a specific department with a degree program, and inclusion of up to two minor areas in the program of study.

**Admission**

Students interested in pursuing an Interdisciplinary Master's Degree (IMAS) degree must meet with the Graduate School for advisement. The advisement session will include information on completing the IMAS admission application:

1. Develop a proposal for interdisciplinary studies
2. Create the IMAS graduate committee
3. Once the student’s graduate committee is designated, the committee can require additional materials such as a statement of interest, letters of recommendation, GRE or GMAT scores and a personal interview.
4. Complete the IMAS referral form and procure committee members IMAS program approval.
5. Procure academic department head IMAS referral form approval.
6. Submit IMAS referral form and proposal for interdisciplinary studies to Graduate School for admissions.

**Degree(s) Awarded**

Students receive a Master of Arts (MA) or a Master of Science (MS) and a concentration in the designated interdisciplinary study area.

Other conditions for being awarded a degree within the interdisciplinary studies program are:

1. The student must present a written description of the program concept consisting of the following, as well as, the designated degree being sought and a name of the interdisciplinary area:
   a. The objective of the program of study which should include, proposed areas of skill development and proposed courses in more than one graduate degree granting department at NMSU.
   b. A justification for not using an existing degree program.
2. The student's program of study must include a minimum of 30 graduate level credits and a maximum of 36 graduate level credits. Students may take six credits in departments that do not grant a
graduate degree, but the courses must be numbered 450/4500 or above and be pertinent to the program of study.

3. The majority of the departments involved in the student's program will be master's degree granting departments. The student is expected to take at least 15 credits in the primary area of study within one department. The department selected by the student will receive a copy of the student's application for admissions to the Graduate School. In addition, the student is required to select a minor area of study in another department that consists of at least 9 graduate credit hours.

4. The student will form a committee composed of members of the graduate faculty and select an advisor who will chair the committee. The chair must be from the primary department where the student has taken at least 15 credit hours listed in the proposal submitted. The other committee member must be from the department in which the student has selected a minor area of study from the approved list.

5. The student will be required to submit the Candidacy Form after they have satisfactorily completed 12 credits.

6. The program will meet all requirements of a master's degree, with the interpretation, that "major field" includes courses from two or more departments and in the designated interdisciplinary study area.

7. The program of study will include the completion of a research thesis or project. The work may be submitted in the form of a publishable manuscript, technical report, thesis or creative option.

8. The student may enroll on a part-time basis keeping in mind that coursework cannot be more than seven years old at the time of the final examination.

9. The student will be administered a final comprehensive exam that is consistent with the department selected for the primary area of study. For example, if a department requires a written exam, the student in the interdisciplinary masters will also be required to take a written exam.

10. The final oral comprehensive exam will consist of questions pertinent to the area of study and the defense of the research thesis or project. In both cases, an integrated approach to the areas of study chosen should be followed.

11. All other rules for graduate study at NMSU must be followed.

Thesis/Non-thesis Option
As with any graduate student, the student in interdisciplinary studies can select to follow a thesis or non-thesis option. Students enrolled in the thesis option register for six thesis credits. Students not wishing to follow the thesis option will be required to complete a project report. The project must reflect the interdisciplinary nature of the program which the student is pursuing.

Comprehensive Exam
Students in interdisciplinary studies take a comprehensive exam composed of questions designed by the student's committee. The committee consists of two individuals in the area of study, the dean's representative who must be outside of the department/program/interdisciplinary study option, and a committee chair.

Second Master's Degree
A student who has earned one master's degree at NMSU may be allowed to count a maximum of six semester credits earned on the first degree toward a second master's degree, if those credits fit into a logical graduate program. The number of shared credits may be increased for joint degree programs.

Teacher Licensure
Students wishing to take graduate courses for licensure, renewal of licensure or for personal enrichment must be fully admitted to a department in order to do so. Undeclared students may not register for teacher licensure classes.

Endorsement is available at both the elementary and secondary levels in bilingual education, TESOL (Teaching of English as a Second Language), reading and special education. Endorsement is also available in early childhood education at the elementary level. Contact instr@nmsu.edu for more information.

Specialist in Education
The specialist in education degree is available for experienced members of the education profession who have maintained a 3.3 grade-point average while pursuing this degree or its equivalent. Programs are available in curriculum and instruction, as well as, school psychology. Emphasis is placed on the development of the competencies needed for a professional specialization in a given field. Students must complete the general application for the Graduate School and they should also check with the admitting department for specific departmental requirements.

Residency and Credit Requirements
The specialist in education degree requires a minimum of 30 credits including research, intern experiences and graduate courses. Twenty-four of these credits must be completed at NMSU to meet the campus residency requirements.

Students must maintain a 3.0 GPA, no more than 6 credits of C level work are allowed for this program.

Program of Study
After the completion of one year of enrollment each beginning graduate student should prepare a complete program of study with the student's advisor. The program of study can be tentative, should be kept in the student's file within the department, and is not considered an "Application for Admission to Candidacy."

Major Field
All course work taken for the degree should apply directly, through a logical program of study, to the specialty which candidate has selected. Each department is responsible for defining the required sequence of courses.

Candidacy
Following the successful completion of 12 credits the student is eligible for admission to candidacy. With the achievement of candidacy, a committee is appointed to work with the candidate on the remainder of the program. The committee consists of three members of the graduate faculty in the College of Education.

Internship
Each candidate will earn from three to six semester credits in an internship. This experience will consist of supervised performance of duties related to the candidate's specialty. The student's department will determine the structure of the internship and a research project will be conducted in conjunction with the internship.

Oral Examination
The oral examination committee will consist of the student's committee and a dean's representative appointed from the graduate faculty by the dean of the Graduate School. This committee will conduct an oral
examination at the conclusion of the research project and no earlier than
the candidate’s last semester of enrollment.

The examination will consist of a defense of the project along with
general questions on subject matter related to the candidate’s field
of study. Any candidate who fails the oral examination may upon
recommendation of the advisor and with the approval of the graduate
dean, be granted a second examination after a lapse of at least one
semester. Failure in the second examination disqualifies the candidate
from obtaining the degree.

**Time Limit**
The specialist in education degree must be completed within seven years
following admission to the program. Inclusion of any coursework more
than seven years old at the time of the final examination will be at the
discretion of the department.

**Doctoral Degrees**
The doctoral degree requires significant scholarly study beyond the
master’s program.

Prospective candidates are expected to hold bachelors or master’s
degrees from accredited institutions, based on curricula that include the
prerequisites for graduate study in the department of their subject. To be
considered for admission to a doctoral program, the applicant must have
a grade-point average of at least 3.0. Prospective candidates are urged
to consult the department in which they wish to study for information
concerning specific requirements.

**Professional Doctoral Degrees**

**Doctor of Economic Development (DED)**

Students enrolled in the Doctor of Economic Development are required to
complete and pass a comprehensive examination. Since a dissertation
is not required, students are expected to complete an internship
experience and a project paper as defined by their program. They can
embark on the project paper once they have completed and passed their
comprehensive examination. Students are not required to take 700/7000
level dissertation hours. However, they are expected to complete at
least 12 credits at the 600/6000 level including ECDV 694 Internship and
ECDV 699 Doctoral Project.

**Doctor of Education (Ed.D)**
The degree of Doctor of Education demonstrates proficiency in a
program of graduate study in which the emphasis is in preparation
for performance in professional education. This program is intended
primarily for students pursuing careers in which teaching, administration
or school services are predominate rather than those in research. The
Ed.D. Degree in curriculum and instruction is offered in the Department of
Curriculum and Instruction; the degree in educational administration is
offered in the Department of Educational Leadership and Administration.

The requirements for doctoral degrees in the two departments of the
College of Education have the following distinguishing elements:

1. The qualifying examination consists of a written and an oral section,
   both of which are administered prior to admission to the program.
   Acceptance for doctoral admission is equivalent to the successful
   completion of the qualifying examination. Residency of at least two
   consecutive semesters cannot commence until the semester after
   the qualifying examination is successfully completed.
2. Comprehensive examinations usually are administered three times
   annually. The written examination tests the major and related areas
   of concentration and is administered after successful completion
   of the orals within two weeks’ time. A student who fails any part of
   the comprehensive examination may present him or herself for re-
   examination of the failed part of the exam before moving on to the
   next part.
3. The major area of study must be within the College of Education

A minimum of nine credits constitutes the related area. The courses
can be taken in any department of the university with the approval of
the student’s committee. The related area must be specifically planned
with the major and minor departments in order for the doctoral fields to
be mutually supportive. Any transfer credit or predoctoral course work
to be included in the related field must have the approval of both the
major and minor department at the outset. Specified course work in both
research and statistics is required for this degree. Other requirements are
described in the departmental sections of this catalog.

**Doctor of Nursing Practice (DNP)**

Students holding a Bachelor’s degree in Nursing are required to
complete and pass all required course work for the DNP program, as
well as, complete and pass their comprehensive examination. Since a
dissertation is not required, they are expected to complete an internship
experience and a project paper as defined by their program. They can
embark on the project paper once they have completed and passed their
comprehensive examination. They are not required to take 700/7000
level dissertation hours. However, they are expected to complete at least
12 credits at the 600/6000 level including NURS 698 (Advanced Clinical
immersion) credits sufficient to complete the DNP Final Project.

Students who hold a Master’s of Science in Nursing are required to
complete the following:

1. All course work requirements
2. Their comprehensive exam (with passing marks)
3. The DNP Project.

Post-MSN DNP students must complete at least 6 credits at the
600/6000 level, including NURS 698 credits sufficient to finish the DNP
Project. Finalized projects must be uploaded to a national DNP Project
repository approved by the Graduate Faculty of the School of Nursing in
order to achieve the DNP degree.

**Doctor of Philosophy (Ph.D.)**
The Doctor of Philosophy degree requires distinguished attainment in
both scholarship and original research. The doctoral degree requires
significant scholarly study beyond the master's that is tailored to the
needs and interests of the student. The degree is granted in recognition
of the candidate's high attainments and ability in the special field, shown
by work on the required examinations covering both the general and the
special fields. The individualized program of study is designed to meet
the campus residency requirement, includes a minimum of 30 graduate
credits, and includes the preparation of a dissertation. A candidate for
the Ph.D. degree is expected to maintain a higher level of work than the
grade-point average of 3.0, plus at least 18 credits of dissertation work
(700/7000-level courses).

**Interdisciplinary Doctorate**

Students interested in pursuing an Interdisciplinary Doctorate (IDOC)
degree program must meet with the Graduate School for advisement.
The advisement session will include information on completing the IDOC
admission application.

The following requirements for admission to the interdisciplinary
doctorate degree program are:
1. Students wishing to study in the interdisciplinary doctoral degree program must apply and be accepted into a doctorate-granting department.
2. A master’s degree or equivalent program of study that includes at least 30 credits of graduate course work with a minimum cumulative GPA of 3.0.
3. Twelve credits of graduate course work must be completed at NMSU in order to apply for admission into the interdisciplinary doctorate degree program. Additional course work is required for degree completion.
4. Evidence of outstanding academic achievement in graduate school.
5. A written description of the program concept prepared by the student consisting of:
   a. Areas in which competency is required
   b. Purposed readings and course work and how these relate to required competencies
   c. Objectives and an outline for thesis research
   d. Justification for not using an existing departmental degree program
6. Student must select an advisor from his/her department to help structure and chair a committee consisting of at least five faculty members from the graduate faculty list who are willing to work on the interdisciplinary degree program. The committee must include at least two members from each of the two doctorate-granting departments. The committee chair will convene a meeting to review and approve the proposed program.
7. The Graduate School will send an Admission Referral document, signed by all the committee members, to the heads of all the departments from which the student proposes to use more than 8 credits of course work, or from the department which the faculty are requested to serve on the proposed committee.
8. Once the Admission Referral document has been approved by all departments, the committee chair will convene a meeting of the committee to review the student’s program and make changes as necessary. In addition, the committee will set the format and date for the qualifying exam. An effort should be made to incorporate the interdisciplinary nature of the program into the qualifying exam.
9. Students have satisfied the requirements for admission to the program once the qualifying exam has been passed and the respective department heads approve the Admission Referral memorandum. Formal acceptance into a doctoral program may be required in order to receive financial assistance.
10. The number of courses required for degree completion will vary depending on the student’s program of study, please see the department for more specific requirements. However, Interdisciplinary doctorate degree students must meet the requirements for residency, registration, the comprehensive examination, the Final Examination, the dissertation and the declaration of approved minor.
11. The dissertation work shall include at least 18 credits of a 700/7000-level course.

Completing your Doctoral Degree Program
Any student who fails to abide by the regulations in this section will be considered withdrawn from the university. In order to resume their studies, the student must formally apply for readmission to the Graduate School and satisfy any requirements that are in effect at the time of reapplication.

Declaration of Approved Minor
Any doctoral applicant for candidacy may declare up to two approved minors in addition to the major area of study. Demonstration of competency in the minor area will be required at both comprehensive and final examinations.

Qualifying Examination
Doctoral students must pass a qualifying examination that is scheduled by the student’s advisor and is administered by the major department. Its purpose is to determine the areas in which the student shows strength or weakness, as well as the ability to assimilate subject matter presented at the graduate level. A student may not register for dissertation credits prior to the successful completion of the qualifying examination.

The following conditions apply to students who wish to take the qualifying examination:
1. For students who enter the Graduate School with little or no previous graduate experience but wish to proceed directly to the doctorate, the qualifying examination should be taken after 12 credits of graduate work.
2. For students who enter with a master’s degree or equivalent from another university, or another department, the qualifying examination should be taken before the completion of one semester of graduate work.
3. For students who earn their master’s degree at New Mexico State University and will continue in the same department, the department may allow the master’s final examination to serve as the doctoral qualifying examination or may require a separate examination.

Based on the result of the qualifying examination, the department will take one or more of the following actions:
1. Admit the student to further work toward the doctorate
2. Recommend that the program be limited to the master’s degree
3. Recommend a re-evaluation of the student’s progress after the lapse of one semester
4. Recommend a discontinuation of graduate work

In all cases, the Graduate School shall be notified by the department of the results of the qualifying examination.

Students will be admitted to the doctoral program once the qualifying examination is passed. The student’s advisor and department head will then appoint the doctoral committee to prepare the student’s preliminary doctorate program of study. The student must submit the program of study to the Graduate School immediately following admission into the doctoral program and before registering for additional coursework.

Doctoral Graduate Committee
The doctoral committee will be composed of at least four members of the graduate faculty who hold doctoral degrees. The following rules apply to the composition of the committee:

- The committee chair must be from a discipline within the student’s major area.
- At least one additional member of the committee must also be from a discipline within the student’s major area.
- If an approved minor is declared, at least one (but no more than two) members of the committee must be from the minor area.
- At least three committee members must be members of the graduate faculty and be from a doctorate-granting department.
• Only one member may be outside of the student’s department.
• One member of the committee must serve as the dean’s representative. In programs where more than one department participates, the dean’s representative may not be from any of those departments. The dean’s representative may be one of the following:
  • the member from the related area
  • a member from the minor area
  • An independent member, not from the student’s department, that is appointed by the Dean of the Graduate School.

Departments may structure committees that include more than the minimum number of members, as long as the following conditions are satisfied. No changes can be made to the doctoral committee membership without prior approval from the Dean of the Graduate School.

Additional voting and nonvoting members may be any person approved or appointed by the Dean of the Graduate School.

All members of the committee will attend the comprehensive oral and final defense for the student’s dissertation.

**Program of Study**

Students should file the Program of Study Form once they have:

• Completed 1 year of enrollment at NMSU that are beyond the master’s degree
• Successfully completed the qualifying examination

The Program of Study Form should be completed and submitted to the Graduate School before registering for any additional courses. The individualized program of study is designed to meet the campus residency requirement and includes a minimum of 30 graduate credits beyond the master’s.

If the Doctoral degree requires a dissertation, at least 18 credits of dissertation work must be included. The professional doctoral degree includes a practicum or special project that culminates in a written report which demonstrates a command of the relevant scholarly literature and links it to the specific clinical or practical experience.

**Comprehensive Examination**

The Graduate School should receive the Program of Study and the Committee for Doctoral Students Form and the Doctoral Qualifying Examination Form.

Students will be admitted to the comprehensive examination only after the following conditions are met:

1. Completion of adequate course work, to the satisfaction of the major department and the Graduate School
2. The graduate committee determines the student is adequately prepared for the examination
3. Successful completion of all language requirements (where applicable)

Students must be registered for 3 credits of graduate course work during the semester in which they take the comprehensive examination. A student taking an oral examination during the summer must enroll for at least one credit for that term.

The Doctorate of Philosophy Examination or Professional Doctorate Examination Form must be on file at the Graduate School at least ten working days prior to the proposed date for the examination. The examination must be part written and part oral. The results of the oral examination will be reported to the Graduate School by the Dean’s Representative of the committee.

Any student who fails the comprehensive examination may either be terminated from the doctoral program or upon recommendation of the committee and approval of the Dean of the Graduate School, be granted a second examination after a lapse of at least one semester.

**NOTE:** In general, there should be a time lapse of at least one year between the comprehensive and final oral examination. However, due to the type of research required and the method of administering the written comprehensive in some departments, such a time lapse is not always practical. In all cases there must be one semester between the comprehensive and the final oral examinations.

**Time Limit for the Comprehensive Examination**

If more than five years have passed since the date of the comprehensive examination, the candidate will be required to take another comprehensive examination before admission to the final examination.

**Advancement to Candidacy**

Advancement to Candidacy recognizes that the student has demonstrated the ability to sustain a level of scholarly competency commensurate with successful completion of degree requirements. Upon advancement to candidacy, the student is cleared for the final stages of the graduate program which may include a dissertation, project or written examination.

For advancement to candidacy the following criteria must be met:

1. Successful completion of the comprehensive examination
2. Recommendation of the graduate committee
3. Approval of the Dean of the Graduate School

Upon receiving advancement to candidacy, students must establish residency and follow the Dissertation Registration Requirements (see Residency Requirements below).

**Residency Requirements**

The minimum campus residency requirements for the doctoral degree include enrollment in a minimum of 9 credit hours of program course work, including a minimum of 3 credit hours of dissertation, at least two semesters of classes taught at NMSU. In some cases the minimum credit hour enrollment for the two semesters required to establish residency may vary based on the instructional delivery of the program, and must have prior approval from the Dean of the Graduate School.

**Dissertation Registration during Fall/Spring Sessions**

After becoming a candidate, students must continue to register for at least 3 credits of dissertation or graduate course work, each spring/fall semester until the dissertation is approved by the Graduate School and the dissertation format review has been completed. The total number of dissertation hours must be 18 credits. The doctoral committee can impose additional requirements for courses numbered 700/7000.

A student who fails to abide by these regulations will be considered withdrawn from the university and in order to resume studies, must formally apply for readmission and satisfy the requirements in effect at the time of reapplication.

**Dissertation Registration during Summer Sessions**

If the final examination is to be held during the summer or the dissertation is to be completed during the summer, students must...
register for one credit during the summer session in which the final examination will be held or the dissertation will be completed.

Dissertation Leave of Absence
Students may seek a leave of absence from their dissertation. A leave of absence requires that a student must seek prior approval from the Dean of the Graduate School, which means the student must receive permission for the leave of absence before discontinuing their formal studies.

Final Examination
NOTE: If more than five years have elapsed since the date of the student’s passed comprehensive examination, the candidate will be required to take another comprehensive examination before admission to the final examination.

Every student working toward the doctoral degree will submit a dissertation embodying the results of original research. The dissertation is expected to demonstrate the student’s ability to conduct an independent investigation and to be a contribution to human knowledge. The dissertation shall display a mastery of the literature of the subject field, present an organized and coherent development of ideas with a clear exposition of results, and provide a critique of the limits and validity of the student’s conclusions.

When a complete draft of the dissertation has been prepared, the student’s doctoral committee (appointed after the qualifying examination) will conduct the final examination. The final examination is concerned primarily with the research work of the student as embodied in the dissertation, but it may be much broader and extend over the candidate’s entire field of study. The intention of the final examination is to verify that the candidate has a satisfactory grasp of the major subject as a whole and has a general acquaintance with the fields of knowledge represented by the course of study. The final examination is oral and is open to the public.

Every student meeting the final examination qualifications must be enrolled in a minimum of 1 credit hour in order to defend. The final examination must be completed in accordance with the schedule provided in the academic calendar. Ten working days before the examination is taken the department must submit the form requesting this examination to the Graduate School. This form may be found on the Web at http://gradschool.nmsu.edu/graduate-forms/ and is also available from the Graduate School and departmental offices.

Students must ensure that each member of the examining committee receives a copy of the dissertation, no later than seven working days before the date of the final examination.

Any candidate who fails the final oral examination may either be terminated from the doctoral program or upon recommendation of the committee and approval of the Dean of the Graduate School, be granted a second examination after a lapse of at least one semester. Failure in the second examination disqualifies the candidate from obtaining the degree.

Finalizing the Doctoral Dissertation
After successful completion of the final examination, electronic submission of the approved dissertation must be submitted to ProQuest ETD, no later than the deadline posted to the Graduate School website. The format review of dissertation will be performed electronically by the Graduate School. The form and style of the dissertation must comply with the regulations given in Preparing your manuscript for submission located at https://gradschool.nmsu.edu/doctoral-dissertation-students/. The dissertation is not complete until the required forms are received at the Graduate School. Required forms may be found at https://gradschool.nmsu.edu/doctoral-dissertation-students/.

Registration at NMSU is a process that includes: (1) academic advising, (2) registering for classes, online or with your academic advisor, and (3) paying the tuition and fee bill. For first time freshman and transfer undergraduate students (at the Las Cruces campus), the registration process occurs during Aggie Welcome/Transfer Student Orientations. For currently enrolled Undergraduate students and all Graduate students registration occurs in collaboration with your advisor or online through the myNMSU portal. For detailed instructions and questions about registration which are not addressed on the website, please contact the University Student Records Office (USRO).

Admission Requirement
No person will be will be allowed to register for courses until formally admitted to NMSU through the Community College, International Programs, Undergraduate or Graduate Admissions processes.

Class Schedule
Each semester and summer session, the University Student Records Office provides an online schedule of classes which can be accessed through myNMSU or the NMSU website. Note that not all courses listed in this catalog are offered every semester.

Registration Schedule by Classification
Several groups of students (e.g. Crimson Scholars, Students with Disabilities, Veterans) receive priority dates for course registration. For other students, registration dates are determined by the student’s current classification at the time of registration. A student’s classification is determined by the number of credits completed, and does not include courses in progress. A student’s classification depends upon the number of credits completed toward graduation. Sophomore classification is achieved with successful completion of 28 credits; Junior classification, 60 credits; Senior classification, 90 credits.

University Credits
The unit of university credit is the semester hour, which is based upon one hour of lecture class or a minimum of two hours of practice/lab per week during one semester, and assumes a minimum of two hours additional, by the student, outside of class. The number of credits associated with each course is indicated in the course schedule.

Course Load for Undergraduate Students
The full-time course load in a regular semester (fall or spring) for a main campus undergraduate students is 12-18 credits. A full-time course load for a summer term is 9 credits with a maximum of 6 credits per session, totaling no more than 12 credit hours. Some scholarships have a 15 credit course load eligibility requirement. Each student is responsible for meeting their own scholarship eligibility requirements.

An overload is classified as more than 18 credits for a regular semester and more than 12 credits for the summer term. A one-credit course in physical education or supplemental instruction will not create an overload. Registration for a course overload requires written permission from an Associate Director of the Center for Academic Advising and Student Support (CAASS) or the Associate Dean for Academics in the student’s academic college. An “Undergraduate Change of Schedule” form is required and available on the University Student Records Office website. Freshmen and students with a grade of D or F, or a cumulative
grade-point average of less than 2.5, in either of the last two semesters, are not eligible for overloads. Concurrent enrollment in non-NMSU courses at other post-secondary institutions requires prior approval from the Associate Dean for Academics in the student's college, and these courses are counted as part of a student's class load.

**Course Load for Graduate Students**
A full-time course load in a regular semester (fall or spring) is 9 credits, with a maximum of 15 graded credits. A full-time course load for a summer term is 6 credits with a maximum of 9 credits.

**Course Numbering**
The course numbering system at NMSU indicated the levels as follows:

- **100-299/1000-2999** – Lower Division (Las Cruces and Community College Campuses)
- **300-499/3000-4999** – Upper Division (Las Cruces Campus)
- **450-499/4500-4999** – Senior and graduate courses (Las Cruces Campus)
- **500-799/5000-7999** – Graduate courses (Las Cruces Campus)

All undergraduate students must demonstrate Basic Academic Skills in both English and mathematics before enrolling in any upper-division course (numbered 300/3000 or higher). These requirements ensure that each student in the upper-division courses has the ability to succeed without compromising the learning experience of other students.

**Class Delivery**
Classes at NMSU are delivered in a variety of modalities. Students may see any of the following schedule types when viewing the class schedule through my.NMSU or the NMSU website.

- **CL (Classroom/Lecture)**: traditional in-person class meetings that occur on specified days and times in a specified location.
- **LB (Lab)**: traditional in-person lab meetings that occur on specified days and times in a specified location.
- **HY (Online with In Person Meetings)**: hybrid delivery that is offered both online and with required in-person class meetings that occur on specified days and times in a specified location.
- **ONL (Online with Synchronous Meetings)**: online class meetings that require all students to meet virtually on specified days and times
- **WB (Online with no Synchronous Meeting)**: online class meetings that do not require students to meet virtually
- **IND (Independent Meeting)**: students and instructors schedule meetings on an as needed basis to discuss course content and student progress
- **TD (Thesis/Dissertation)**: thesis/dissertation with implied meetings on an as needed basis to discuss course content and student progress
- **PC (Practicum)**: practicum/clinical with implied meetings on an as needed basis to discuss course content and student progress

**Prerequisites and Corequisites**
Some courses require advance or concurrently acquired specific knowledge and skills. Prerequisite(s) and corequisite(s) for each courses are indicated in the course description section of this catalog. Students must have completed (or be presently enrolled in the prerequisite(s)) courses in order to register for a course with prerequisites. Where a student was allowed to register for a course while completing the prerequisite(s), and then subsequently fails to successfully complete a prerequisite course, the student shall be dis-enrolled from the course requiring the prerequisite. In the case of a corequisite, a student must enroll in the courses during the same semester. In some instances, where a course has an enforced “pre/corequisite” the student can elect to either take the requirement before registering for the course, or take the courses at the same time.

**Registration Changes**
Subject to any registration “holds” and any applicable deadlines, students may change their course registration online. Caution should be exercised as registration changes may negatively impact eligibility for scholarships, financial aid or athletic participation, the student's ability to progress through their degree program in a timely manner, and the student's obligations with respect to tuition and fees.

The University Student Records Office publishes an online schedule of “Important Dates for Students” for each semester. The student is responsible for reviewing and adhering to the Important Dates, including the deadlines to add, drop or withdraw from course(s) for the relevant semester.

Adding Courses: There are two different types of deadlines for adding courses:

1. **Last day to add a class without instructor’s signature** - during this period courses may be added online through myNMSU, or through your academic advisor (if necessary).
2. **Last day to add a class with instructor’s signature** - during this period courses may only be added with either the "Undergraduate Change of Schedule" or the "Graduate Change of Schedule" form signed by the instructor (available online on the University Student Records Office website).

   * Students taking classes online and who do not live in the Las Cruces Area must email the instructor, using the NMSU email, in order to get permission to be added to the course. If the instructor approves the addition, the approved response must be sent to either the student’s academic advisor or to registrar@nmsu.edu with the student’s name, ID number and course CRN number they are wanting to add.

Withdrawing from Courses: There are two different types of deadlines for withdrawing from courses:

1. **Last day to drop without a “W” grade** – during this period the student can drop the course and not have it appear on their official transcript in any form, and the student will have no financial obligation related to the course (students will receive a 100% refund if tuition has been paid for the course).
2. **Last day to drop with a “W” grade** – during this period, the student can withdraw from the course, but the course will appear on their official transcript with the withdrawal (W) designation as the grade, and the student will be responsible for the full tuition and fees related to that course.

Students are responsible for initiating official withdrawal from any course(s) they do not intend to complete. Students who experience extraordinary circumstances that prevent timely registration changes should consult with their Academic Associate Dean or the Registrar. For more information about the process for adding or withdrawing from a course(s), please speak with your academic advisor or contact the University Student Records Office.
Any student attending under Veteran Educational Assistance must notify the Military and Veteran's Programs office before processing registration changes to determine if changes will affect their enrollment status or benefits.

A student found insufficiently prepared for a course they are enrolled in may be transferred to a more elementary course in the same subject any day before the last day to withdraw from an individual course.

**Waitlisting**

Waitlisting is available for all courses across the NMSU system, except for labs that are linked to a specific lecture class. Waitlisting is an electronic list of students who are waiting to register for a filled course. Once students are put onto the waitlist, the process to get into that course is as follows:

1. A currently enrolled student must drop the course for a seat to become available.
2. The first student on the waitlist is notified through their NMSU email.
3. The notified student has 24 hours to login to their myNMSU and register themselves for the class.
4. If the first student fails to register within their allotted 24 hours, then the first student is dropped from the waitlist and the next student on the waitlist is notified. This continues until the empty seat is filled.

A student who fails to register for the class during their allotted 24 hours is automatically dropped from the waitlist and can add themselves back onto the bottom of the waitlist for that course.

Students cannot be added to the waitlist after the first day of classes. Instructor overrides can only be made after the second day of class, at which point the instructor’s signature is required on either the "Undergraduate Change of Schedule" or the "Graduate Change of Schedule" to add a course.

**Graduate Registration Requirements for Summer**

Students who have scheduled their final examination, or who are completing their thesis during a summer session, must be registered for one credit hour during the same summer session. In order to graduate during a summer session, the student must have filed the Application for Degree by the deadline posted on the Academic Calendar.

**Repeating Courses for A Change in Grade**

See the Grading portion of the Academic Regulations section of this catalog.

**Substitutions and Waivers**

Students registering for their final semester must have all course substitutions and waivers of required, for their degrees, courses approved before two weeks after the last date of registration for full or summer terms.

**Auditing a Course (No Credit)**

An audited course is one in which the student registers for the learning experience but does not seek to earn academic credit for the course. A student seeking to audit a course must register and pay tuition and fees for the course and have the consent of the instructor to take the class in audit form. A student who has registered to audit a course may be dis-enrolled from the course at any time before the registration deadline expires if necessary to accommodate a student taking the course for credit. After the last day to register, the student cannot change the course option from audit course to a for credit bearing course.

Audited courses are not used in determining a maximum class load (overload) for undergraduate students in good academic standing, however, the audited course will be counted as part of the maximum allowable course load for graduate students and undergraduate students who are on academic probation.

**Attendance and Student Performance**

Academic success is closely correlated to student participation and attendance. Accordingly, students are expected to regularly attend all their classes. Each course instructor will establish the specific attendance and course requirements. Only students who are currently enrolled in a course for either credit or audit are permitted to officially attend the classes. However, individual instructors may allow an occasional visitor and may allow a student who officially withdrew from the course to continue to attend for the remainder of the semester.

**Absences from Class and Failure to Complete Assignments**

Students who must miss class due to accident or illness, or due to other circumstances beyond their control should consult the course syllabus and the instructor for guidance. Students may be administratively withdrawn from a course due to excessive absences (consecutive absences in excess of the number of class meetings held within a week or any number of absences, including failing to use the online Learning Management System, which are impairing the student's performance), or for persistent failure to complete assignments. In such cases, the Instructor may recommend administrative withdrawal by providing a completed “Student Absence/Lack of Progress Report” form to the Academic Associate Dean. If the Academic Associate Dean agrees with the recommendation of the course instructor, the student will be administratively withdrawn from the course. Any student who has been administratively withdrawn from a class may appeal that decision to the Dean of the College where the course was offered within 10 days after notification of the withdrawal.

Any absences due to the student’s participation in 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) will be excused and deemed an “Authorized Absence”. Authorized absences do not relieve the student of the course assignments or responsibilities and instructors may require students to complete course work before the absence. Prior to the student’s absence, the student will provide the instructor(s) with written notice of the dates of expected absence.

**Classroom Conduct**

Each instructor has the authority to establish and enforce reasonable rules of conduct in their courses. A student who engages in behavior that interferes with the educational environment of the class may be administratively dis-enrolled with the approval of the academic department head and academic associate dean for the course, and with notification to the Provost. Any student who has been administratively dis-enrolled from a class may appeal that decision to the Dean of the College where the course was offered within 10 days after notification of the dis-enrollment.
Student Performance Assessment

Individual student performance and learning outcomes in a course are measured and evaluated by the course instructor and reported to the student in the form of grades. Each instructor has the authority to establish assignments and other assessments (such as exams and quizzes) and to assign grades based on the student’s performance on those assessments. Final grades for the course are determined by the instructor and reported to the University Registrar as described in grading section of this catalog. Any student who believes that their academic performance has been evaluated unfairly may appeal the grade through the University’s Academic Appeals process as provided in this Catalog.

Academic Program Assessment

New Mexico State University is committed to providing its students with a quality education and a supportive learning environment. Academic Program Assessment is a continuous improvement process achieved by identifying a program’s desired learning outcomes, evaluating the extent to which those outcomes are collectively achieved by students in the program, and then implementing changes to enhance and improve the collective program outcomes. For assessment to be effective, students must be actively aware of and engaged in assessment activities.

Academic Program Assessment requires participation of students who are expected to provide feedback on personal, professional and academic development and to participate in a variety of assessment exercises. Assessment activities may be a part of regular graded course assignments, or may require students to engage in other activities. Assessments may include course projects, exams, exit interviews, standardized tests, surveys, focus groups, etc. Data gathered through these assessments is published only in aggregate form. Learn more about NMSU’s Academic Program Assessment at https://assessment.nmsu.edu/

Exam Week and Final Examinations

NMSU designates the last week of each semester as “Exam Week” during which each course has only a single 2 hour meeting time for a mandatory culminating activity which may be a final examination or some other course related activity. The University Student Records Office (USRO) establishes the Final Examination Schedule for each semester. Examinations are typically held in the course’s usual lecture/lab room. Some departments hold Departmental Exams where all students for all sections of a particular course are required to take the final examination simultaneously. The date, time and location of the Departmental Exams are indicated on the Final Examination Schedule. For courses that were not scheduled to meet at the specific times listed under “Regular Class Time” on the USRO’s Final Examination Schedule, the instructor and course department coordinate examination dates, times and locations with NMSU’s Academic Scheduling office (575) 646-4790. Final exams for weekend courses are held at the regular class period on the last day of class.

The final exam or culminating activity must not be rescheduled for a different date, time or location, except with permission of the department head and the unanimous consent of the enrolled students. During the week before Exam Week, instructors are not allowed to hold examinations lasting more than one class period.

Any student having more than three examinations scheduled in any one day may, no later than the week prior to exam week, notify the instructor of the examination scheduled latest in the day to obtain an alternative date for that examination. (If the fourth exam is a departmental exam, the instructor of the third exam will make alternate arrangements for that exam upon request.)

Students who believe that their instructor(s) have not honored Exam Week requirements may appeal to the instructor’s department head.

Developmental Evaluation

The academic skill level of all entering first-time students at the time of registration is evaluated based upon ACT scores, SAT test scores, and/or alternative placement assessments. The student’s eligibility to enroll in university level English and Mathematics courses is dependent upon this evaluation. Students who have not demonstrated adequate preparation for university level courses are required to take developmental courses. Developmental courses are included on the transcript and will be included in the calculation of the GPA, but the developmental course credits do not count towards a degree.

Basic Academic Skills

All undergraduate students must demonstrate Basic Academic Skills in both English and mathematics before enrolling in any upper-division course (numbered 300 or higher). These requirements ensure that each student in the upper-division classes has the ability to succeed without compromising the learning experience of other students. The completion of the Basic Academic Skills requirements does not necessarily result in the award of academic credit nor satisfaction of university general education requirements in English and mathematics. (Students should consult the General Education Courses and Requirements section in this chapter for these requirements.)

Transfer students with 45 or more credits are allowed to enroll in upper-division courses for only one semester before satisfying the Basic Academic Skills requirements. The Basic Academic Skills requirements may be satisfied in a variety of different ways as listed below:

English Basic Skill Demonstration Options (achieve one of the following):

- ACT English Score of 30
- Coursework - ENGL 1110G, or equivalent, completed with a grade of C- or higher.

Equivalents: the following are deemed equivalents to ENGL 111G for the purpose of satisfying Basic Academic Skills in English:

- ENGL 1110H – completed with a grade of C- or higher
- ENGL 1110M - required for International students who took the TOEFL examination
- CLEP Exam score of 57 or higher in freshman college composition
- English Advanced Placement (AP) Exam score of 3, 4, or 5
- English Composition Transfer Credits - 3 or more credits with a grade of C- or above, transferred from accredited post-secondary institutions (International students may be required to take ENGL 1110M Composition I Multilingual as noted above.)

Credits from Non-accredited Institutions - As a general rule, NMSU does not accept credits from non-accredited institutions. Students with 3 or more credits of college-level English composition with a grade of C- or higher from a non-accredited institution may, however, challenge the Basic Academic Skills requirement in English and ENGL 1110G Composition I course requirement by submitting a theme paper written
under the supervision of, and demonstrating achievement of ENGL 1110G Composition I learning outcomes as determined by, the Department of English.

**Mathematics Basic Skill Demonstration Options** (achieve one of the following):

- ACT Mathematics Score of 23
- Coursework – any one of the following courses or course combinations completed with a grade of C- or higher in each course:
  - MATH 1130G Survey of Mathematics
  - MATH 1215 Intermediate Algebra
  - MATH 1220G College Algebra
  - Any mathematics course numbered 1250G or above (prefix MATH) excluding MATH 1996 Topics in Mathematics and MATH 2992 Directed Study
- Basic Skills Exam Passing Score - offered twice a semester by the Department of Mathematical Sciences
- Calculus AB, Calculus BC or Statistics Advanced Placement (AP) Exam score of 3, 4, or 5

**IMPORTANT NOTE:** Basic Academic Skills Demonstration fulfillment options may not appear on the transcript, result in the award of academic credit, or satisfy general education requirements. The Basic Academic Skills requirements are used solely for the purpose of determining eligibility for enrollment in upper-division courses. All students should seek to complete the Basic Academic Skills requirements as early as possible. Students who postpone completion of Basic Academic Skills may be unable to progress toward degree completion in a timely manner.

**Independent Study and Directed Reading Courses**

Independent study courses and directed reading (other than those designated in the catalog with a subtitle), are for students capable of and sufficiently motivated to undertake self-directed study with limited oversight of a faculty member. Only students who have completed at least 28 credits at NMSU under traditional grading, with a cumulative GPA of 2.5 or better, are eligible to enroll independent study courses. No student is entitled to enroll in independent study and enrollment requires the consent of an instructor who agrees to supervise and evaluate the student’s learning activities in the course. Students seeking enrollment in an independent study course should prepare an independent study proposal to present to individual faculty member(s) in the relevant discipline for consideration. At a minimum, the proposal should include the topic of study, a brief survey of the literature or other resources on the topic, and a description of the proposed written product or other tangible outcome of the independent study. The relevant academic department for the discipline may have additional requirements. Each college determines the maximum number of credits that may be earned in independent study courses.

**Adjusted Credit Option**

The adjusted credit option provides eligible undergraduate students who earned a low grade-point average (less than 2.0 cumulative) during their first few semesters to reset their GPA calculation. This option may be used only once and is not reversible. These are the consequences of exercising the Adjusted Credit Option:

1. All of the student’s academic history pre-dating the request, including all NMSU course credits previously attempted or completed, transfer coursework, CLEP, ACT, advanced placement, special examination, and/or military service are included in the adjustment and designated as “ADJUSTED CREDITS” on the transcript. These credits are no longer be included in the calculation of the cumulative grade point average.
2. Courses carrying an academic grade of S, CR, C- or better, earned prior to the grading period in which the student requested this option, are treated as earned academic credit and need not be repeated, except where a higher grade is required in the student’s academic program.
3. Courses carrying an academic grade of U, CD, D or F, earned prior to the grading period in which the student requested this option, remain on the student’s transcript, but no academic credit is provided for these courses. The student must repeat these courses to obtain academic credit.
4. The student’s academic transcripts will continue to reflect all coursework, including courses falling under the adjusted credit option. In no circumstances will a transcript be issued that does not include all courses attempted at this university.
5. The student’s current academic status, eligibility for employment, and financial aid may be impacted. Probationary status and eligibility for on-campus employment are not affected by the exercise of the adjusted credit option.
6. The repeat rule for courses starts anew.
7. The student will not be eligible for award of an associate degree until earning thirty (30) or more additional credits after exercise of the Option.
8. The student is eligible for University honors at graduation upon completing a minimum of 60 academic credits at NMSU, after the adjusted credit option is exercised, with a resulting grade point average which satisfies University regulations for honors.

After carefully considering the consequences indicated above, eligible students may exercise the Adjusted Credit Option by paying a fee of $10 and submitting an adjusted credit option application to the University Student Records Office. Application forms are available at the University Student Records Office website and can be approved by the Director of the Center for Academic Advising and Student Support or the Associate Dean for Academics in the student’s college or the Academic Vice President at the Community Colleges. Only students meeting the following criteria are eligible to exercise the Option:

1. No awarded baccalaureate degree
2. Enrolled as a degree-seeking or non-degree undergraduate student
3. Cumulative grade-point average of less than 2.0 at NMSU
4. Fewer than 60 credits accumulated (including both transfer and NMSU credits)

**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.

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 they are already registered, they may be permitted to challenge the course. A student desiring to apply for special examination may obtain the necessary forms from the University Student Records Office. 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.

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 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, on-duty personnel, National Guard and Reservists who are current students or students applying for admission to New Mexico State University may be granted academic credit on a case-by-case basis upon evaluation of military transcripts - the Joint Service Transcript (jst.doded.mil) and the Community College of the Air Force 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.

Graduate Course Deficiencies

Students who have been admitted with departmental deficiencies may be required to take diagnostics tests and additional qualifying examinations. They must complete satisfactorily, in a manner specified by the major department, all undergraduate course deficiencies as prescribed by the department responsible for the graduate program. Courses taken to satisfy deficiencies will be listed on the undergraduate transcript; however, these course grades will not be calculated in the student's graduate GPA or graduate hours. With the permission of the student's advisor and the head of department, courses to meet undergraduate deficiencies may be taken under an S/U option (with S being a grade satisfactory to the professor), and such courses will not affect the maximum number of S/U graduate credits permitted.

Short Courses for Graduate Students

Short course(s) that are numbered 450/4500 and above have been approved to carry graduate credit. Graduate students must be registered for the short course(s) to receive graduate credit. Concurrent enrollment of graduate students in regular and short courses for the fall/spring semesters is allowed, provided the combined total credits does not exceed 15. All short courses carrying one semester credit will be graded on an S/U basis and these credits will be counted toward the student's limit of S/U credits.

Challenging Graduate Courses

A graduate student may challenge a graduate course by examination, please see the Graduate School for more information.

University Grading System

Each course department or instructor establishes the system for assessing student performance in achieving course learning objectives. Students should consult the course syllabus for a description of the grading system used in each course. At the conclusion of each course, instructors are required to report a final grade reflecting the instructor's assessment of each student's performance. Shortly after the end of the term, students can access their grades through the MyNMSU portal. No other grade notification will be issued. The final grade is reported on the student transcript. Instructors may elect whether to use fractional grading (the use of the plus and minus) in assigning final letter grades.

The NMSU system for final grades is expressed in letters, which carry grade points that are used in calculating the cumulative grade-point average, as shown in this table:

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Grade Points per Unit of Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>4.0</td>
</tr>
<tr>
<td>A</td>
<td>4.0</td>
</tr>
<tr>
<td>A-</td>
<td>3.7</td>
</tr>
<tr>
<td>B+</td>
<td>3.3</td>
</tr>
<tr>
<td>B</td>
<td>3.0</td>
</tr>
<tr>
<td>B-</td>
<td>2.7</td>
</tr>
<tr>
<td>C+</td>
<td>2.3</td>
</tr>
<tr>
<td>C</td>
<td>2.0</td>
</tr>
<tr>
<td>C-</td>
<td>2.0</td>
</tr>
<tr>
<td>D+, D, D-</td>
<td>1.0</td>
</tr>
<tr>
<td>F</td>
<td>0</td>
</tr>
<tr>
<td>W- Withdrawal</td>
<td>0</td>
</tr>
<tr>
<td>N- Grade not submitted</td>
<td>0</td>
</tr>
</tbody>
</table>
their program and/or their program as a whole. Students should check with their departments regarding specific course grading requirements for their particular degree program.

**Minimum Grade Requirement for Graduate Students**

Graduate degrees require a cumulative graduate G.P.A. of 3.0 or higher. Although B- and C grades (including C+ and C-) earned at NMSU may be counted toward the requirements for a graduate degree in some programs, this grade does not reflect acceptable graduate-level performance and may cause the cumulative G.P.A. to fall below the 3.0 required for graduate students. Some departments have higher grading requirements for courses in their programs. Students should check with their departments regarding specific course grading requirements for their particular degree program.

Courses in which a student earns a D or F grade do not ever satisfy graduate degree requirements; however these grades will be calculated in determining the students’ cumulative grade-point average. To obtain academic credit, students must retake courses in which a grade of D or F was earned.

**S/U Grading**

S/U grading allows the student to attempt to earn course credit without having a course grade included in their grade point average calculations. Under S/U grading, the instructor assigns an S grade for satisfactory achievement of the course learning objectives (normally equivalent to the letter grade of C- or higher) and a U grade for unsatisfactory performance in the class.

**Designated S/U Courses**

Each academic college 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 designated S/U courses are not included in the limitations on the number of S/U credits a student may take, and are not subject to the student eligibility requirements described below.

**Election of the S/U Grading Option - Undergraduate Students**

In courses other than those designated as S/U for all students, eligible individual students may elect the S/U Grading Option, subject to the regulations stated below. To be eligible for the S/U (satisfactory/unsatisfactory) Grading Option, undergraduate students must meet the eligibility requirements and obtain approval of an academic advisor. Eligibility requires completion of 28 credits at NMSU under traditional grading, with an overall average of 2.5 or better. (Upon approval of the adjusted credit option, students must re-establish eligibility.) Non-degree seeking students may take courses under the S/U option without regard to eligibility requirements. However, these courses may not be subsequently applied toward an undergraduate degree at NMSU.

The S/U option must be elected as part of the course registration and may not be added once the course registration period closes. Other than honors courses and courses officially designed as S/U, the following limitations apply to courses in which the S/U option is elected:

1. No more than 7 credits per semester or 4 credits per summer session.
2. Not to exceed a total of 21 credits towards a degree.
3. Not a required course for the student's major.

Students electing the S/U option should be mindful that upon a change of majors, the new major department may require a traditional grade for a course within that major that was previously completed with an S grade.
grade. In such cases, the student may request that the original instructor process a change of grade form to apply a traditional grade, however, if more than 2 years have elapsed or if the instructor is no longer at NMSU, such a change will not be possible and the student may be required to retake the course or obtain a traditional grade through a course challenge.

Election of the S/U Grading Option Election - Graduate Students
With an approval from their advisor and department head, graduate students in good academic standing may elect the S/U option, at the time of registration, for courses taken outside the major department, subject to the regulations stated below.

1. No more than a total of 6 credits of elected S/U courses are permitted in the master's degree.
2. Doctoral candidates may take an additional 6 credits under the S/U option after application to candidacy.

I Grade Designation
The letter grade of I (incomplete) is given for passable work that could not be completed due to circumstances beyond the student's control that develop after the last day to withdraw from the course.

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. Examples of appropriate circumstances include documented illness, documented death or crisis in the student's immediate family, unexpected military deployment and similar circumstances. Other job related circumstances are generally not appropriate grounds for assigning an I grade. Students requesting an I grade are responsible for providing satisfactory evidence of such circumstances. (In the case of medical records, instructors should review the information provided, note that adequate medical documentation was provided for review, and return the documentation to the student. Under no circumstances should the instructor retain any medical records or indicate the specifics of any medical condition in the academic records.)

The refusal to grant an I grade may be appealed in the same manner as any other final grade.

To assign an I grade, the instructor must complete the "I Grade Information Form" within the 12 month timeline and have the form delivered to the associate dean of the course college. The instructor must indicate on the form whether the student will be given the option to complete the remaining coursework and have the I grade changed to the earned letter grade. If so, the instructor should indicate the steps necessary to complete the remaining coursework. The I grade form should either be signed by the student in person, or the associate dean must send a copy of the document to the student's official permanent address, as recorded in the University Student Records Office, with a notation on the form that the student was not available for signature.

The I grade will be permanent in instances where (1) the instructor did not provide an option to complete the coursework, (2) the instructor left NMSU prior to completion of the coursework and grade change, or (3) the student failed to complete the coursework by the relevant deadline, and the instructor did not indicate that the I grade would be changed to the earned grade upon failure to complete. In such instances, the student will be required to re-enroll in the course to receive credit (in which case the permanent I grade and the subsequent earned letter grade will both appear on the transcript).

The student is entitled to have the I grade removed from the transcript only if, within 12 months or any earlier deadline established by the instructor on the "I Grade Information Form" and prior to graduation, the student completes the remaining coursework, as specified on the Form, in a manner satisfactory to the instructor. If the student fails to complete the coursework, the instructor may change the I grade to any appropriate grade (including D, F or U) only if the instructor stated that this would occur on the "I Grade Information Form." The instructor should assign whatever grade was earned for the entire course.

To change the I grade, the instructor must complete a "Change of Grade Form," obtain the signature of the associate dean for the course, and submit the form to the University Student Records Office.

RR Grade
The RR grade may be assigned only in undergraduate developmental courses (CCDE, CCDL, CCDM & CCDR) and indicates that the student has made substantial progress toward completing the requirements of the course. It carries neither penalty nor credit, so a 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 is a permanent notation on the student's transcript.

W Grade Designation
The W grade is assigned only in courses when the student withdraws or is administratively dis-enrolled from the course after the last day to drop the course. The W grade is permanent.

Effect of Change of Grade
The effect of a change of grade on a student's academic standing (academic 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 change (such as replacing the I grade with an earned grade) is included in the grade-point average calculation in order to establish the student's academic standing. If the transaction is recorded after the student begins another semester, for the purpose of calculating academic standing, the new grade is included with any other grades earned for the semester in which the grade change is processed.

Repeating Courses for a Change in Grade
Undergraduate students: may repeat courses, for a change in grade, when the original grade earned was a D or F. Las Cruces Main Campus students are not allowed to count repeated courses towards the minimum 15 credits required to retain merit-based institutional scholarship. Once a grade of C- or better is earned, the course will then be substituted in the calculation of the grade-point average and students will no longer be able to repeat that course for change of grade purposes. Student transcripts will continue to show the grade awarded for each course attempt. If the student's original grade was a D and he/she repeats the course, but receives a F, the second grade will not be substituted for the original.

Graduate students: may repeat courses to achieve a higher grade, but the grade assigned for each attempt will remain on the transcript and will be counted in the grade point average calculation.

Grade Point Average
Grade point average (GPA) calculations are based solely on courses taken at NMSU or under an approved National Student Exchange.

Grading in Graduate Research
In grading both master's and doctoral research, thesis and dissertation work in progress, the instructor reports for each enrollment period the
grade PR (progress) or U (unsatisfactory) rather than a traditional letter grade. These assigned grades are permanent notations on the student’s transcript. Only those credits graded PR (Progress) accumulate toward the minimum number of research credits required.

PR indicates that the student has devoted an adequate amount of time to the work scheduled but does not indicate the quality. U indicates that the student has stopped work or is doing work of unacceptable quality.

At the conclusion of the final oral examination, or when the thesis/dissertation is submitted for the final signature of the graduate dean, the instructor will report the final S or U grade for that semester. If the thesis/dissertation and the performance in the final oral examination are found to be acceptable, the instructor will report an S (satisfactory) grade. If the thesis/dissertation or the performance in the final oral examination is found to be unacceptable, the instructor will report an U (unsatisfactory) grade.

If a student accumulates a total of two U (unsatisfactory) grades in courses numbered either 599/5999, 600/6991, 700/7000, or any other graduate level project/research type courses with S/U grading, the student will be placed on provisional status. If three U (unsatisfactory) grades are reported for these courses, the student will be dismissed from the Graduate School.

For more information regarding how withdrawals impact tuition refunds, please see the Tuition, Fees & Other Expenses section of the catalog.

**Withdrawal from a Single Course**

Any student wishing to formally withdraw from a single course, after the last day to drop has passed, can do so through their Academic Advisor or the University Student Records Office. All such withdrawals will be registered on the student’s transcript with the “W” grade indication.

For students wishing to withdraw from all courses, please see the section on Withdrawal from NMSU.

**Leave of Absence from the Graduate School**

Students who are working on advanced degrees and plan to have an interruption in studies, for a calendar year, should request for a leave of absence through their department head. The student must submit a formal letter through their department head to the Dean of the Graduate School, an email will not be accepted. The request should include the beginning date and the anticipated ending date for the period of absence.

A graduate student on leave of absence will be expected not to use university facilities and place no demands upon the university faculty and staff, and, therefore will pay no fees. Time spent in the “leave-of-absences” status will not be counted toward the advanced degree time limits.

A graduate student who fails to register for one calendar year without obtaining a leave of absence from the Graduate School will be considered withdrawn from the university, by the Graduate School. In order to resume their studies after such absences, the student must go through the formal readmission process.

**Administrative Withdrawals**

In the event that a student has stopped attending class without formally withdrawing, stopped using the online Learning Management System, or has a history of persistent unexcused absences or failures to complete assignments, the University reserves the right to remove the student from the class by means of an administrative withdrawal. An administrative withdrawal may be requested under the following circumstances:

1. At the beginning of the semester, if a student misses the first two (2) class meetings or online activities.
2. At any point in the semester, if a student misses four (4) consecutive class meetings or online activities.
3. If over the course of the semester, the student persistently fails to attend class or fails to complete assignments.

In NO case is an administrative withdrawal used to avoid the assigning of D, F, U or RR grades for marginal or failing work. Administrative withdrawals are subject to the same refund rules as student initiated withdrawals (100% refund prior to census and no refund after census).

To request consideration for an administrative withdrawal, the instructor must complete the Student Absence/Lack of Progress Report, found on the forms page of the University Student Records Office webpage, and route for approvals. The University Student Records Office is ultimately responsible for processing the administrative withdrawal.

Upon receipt of a fully approved Student Absence/Lack of Progress Report, from the Dean’s Office, the Student Records staff will notify the student that they will be withdrawn from the class within 48 hours unless they appeal the action. This notification will be sent to the student’s official NMSU email address. Students wishing to appeal the administrative withdrawal, should reply to the Student Records’ notification email, with a valid reason for non-attendance / non-completion of coursework, within 48 hours of the email delivery time stamp.

If the appeal circumstances are determined reasonable and accepted, the student will not be withdrawn from the class and will be expected to actively participate in all future meetings and coursework. The Student Records Office will notify the instructor, Department Head and Associate Dean of the determination, via official NMSU email.

When an administrative withdrawal is initiated for a student who is representing the university at an official out-of-town event any administrative withdrawals will become effective upon the student’s return from the event or five days after the drop slip fully approved form is submitted to the Student Records Office.

**Military Withdrawal**

New Mexico State University understands that our military students may be called to active duty, specialized training, or disaster relief efforts with little notice. U.S. active duty military students wishing to withdraw from all their classes must present their orders and their request for full withdrawal, as indicated below. However, the below policy does not pertain to a student’s basic and/or annual training. A student who has an order for training is encouraged to formally request, through the proper military chain of command, a postponement of their orders until the summer or the end of the semester they are currently enrolled in. If a student’s request for postponement is denied, the student may then follow the below steps but must provide documentation that their postponement request was formally denied.
All NMSU students that have been called up for active duty must take the following steps in order to withdraw from all their classes:

1. **Military and Veterans Programs (MVP):** TA/VA students ordered to Active Duty must provide a copy of orders to the MVP office, in Corbett Center Student Union, Room 244, or by email mvp@nmsu.edu. To assist in reporting accurate information to their military service or the VA Regional Office, student should also provide, in writing, last day of class attendance.

2. **NMSU University Student Records:** All students presenting their orders to the University Student Records Office, (575) 646-3411, or records@nmsu.edu, will receive a military withdrawal from classes and a full tuition and fees refund for that semester.

3. **Bookstore:** Students who still have their receipts for textbooks purchased in 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. Please contact the bookstore for assistance at (575) 646-4431 or nmsu@bkstr.com.

### Student Medical Withdrawal

A student 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. This action applies to all courses a student is registered for in the affected semester(s). The student cannot select which courses they want to withdraw from and which they want to remain registered for when exercising this option. The students’ attending physician must provide a letter, on official letterhead with an original signature, stating the date(s) within the semester that the student was under medical care and must withdraw because of that medical condition. This letter must be submitted within the semester or no later than one academic year after the end of the term for which the withdrawal is being requested.

Once the information is reviewed a final determination will be made if the student is eligible for consideration of tuition or other refunds (students receiving funds awarded by the University Financial Aid and Scholarship Services should be aware of policies regarding withdrawal from the University). At the Las Cruces campus, medical withdrawal begins at the University Student Records Office. At all other campuses, medical withdrawal begins at the Student Services Office but is ultimately finalized with the University Student Records Office on the Las Cruces campus.

### Medical Conditions of a Family Member Withdrawal

A student who is withdrawing because of a medical condition of an immediate family member must submit a letter from the family member’s attending physician. This action applies to all courses a student is registered for in the affected semester(s). The student cannot select which courses they want to withdraw from and which they want to remain registered for when exercising this option. It must be on official letterhead with an original signature, stating the date(s) within the semester that the student’s immediate family member was under medical care and that the student must withdraw to attend to the immediate family member’s medical condition. This letter must be submitted within the semester or no later than one academic year at the end of the term for which the withdrawal is being requested.

Immediate family member, in this instance, includes a spouse; a domestic partner, as defined in the NMSU Policy Manual 7.04; a child, parent or legal guardian; a sister or brother and a grandparents or a grandchild. Familial relationships that are created by law are also included (i.e. mother/father in law; half or step siblings); any other relationships can be considered on a case-by-case basis.

Once the information is reviewed a final determination will be made if the student is eligible for consideration of tuition or other refunds (Students receiving funds awarded by the University Financial Aid and Scholarship Services should be aware of policies regarding withdrawal from the University) At the Las Cruces campus, medical withdrawal begins at the University Student Records Office. At all other campuses, medical withdrawal begins at the Student Services Office.

### Withdrawal from NMSU

Withdrawal from any NMSU campus is an official procedure that must be:

1. Initiated by the student (using the Withdrawal form)
2. Have all necessary signatures (as indicated on the form)
3. Be approved and processed through the University Student Records Office, located on the Las Cruces Campus

Students who withdraw from all courses for the semester should do so in person through the University Student Records Office. However, students who are unable to come in person may submit an e-mail using their NMSU e-mail account to records@nmsu.edu (). Students who leave without following the official procedure are graded appropriately by the instructor.

Applicable dates for the last day to withdrawal are published on the approved university academic calendar or under important dates at: [http://registration.nmsu.edu](http://registration.nmsu.edu).

A student who withdraws from all classes for the semester will retain access to their NMSU account per current policy but will lose access to other services and privileges available to enrolled students.

Financial information concerning drops and withdrawals can be found at [http://uar.nmsu.edu/withdrawals/](http://uar.nmsu.edu/withdrawals/). Financial Aid Recipients should contact University Financial Aid and Scholarship Services before withdrawing. Students receiving funds awarded by the University Financial Aid and Scholarship Services should be aware of policies regarding withdrawal from the University.

The Federal Higher Education Act requires the University to calculate a Return of Federal Student Aid Funds for students who withdraw (officially or unofficially) from all classes on or before the 60 percent attendance point in the semester. Using a pro-rata schedule, the percentage of the semester attended is used to calculate the amount of the student’s earned versus unearned Federal student aid funds. The unearned portion of Federal student aid funds will be returned to the appropriate aid program(s). Students withdrawing from classes are responsible for payment of any balance due after the required return of Federal student aid funds.

### Graduation Requirements

For specific graduation requirements for any degree offered at NMSU please see the Degrees, Majors, Minors and Other Academic Programs of Study section, as well as the departmental sections for those requirements. These requirements will include the minimum GPA, total credits and specific course requirements for graduation.
Applying for a Degree

Any students that are in their final semester of classes are considered degree candidates and are required to submit an “Application for Degree” as well as pay graduation fees for each degree being sought. The application for Degree form is available online through the MyNMSU website. It must be completed and submitted by the designated deadline for that summer term. The fees for the Las Cruces campus are all listed in the Tuition, Fees, and Other Expenses section of the catalog, once a student submits the application the fee will be included in the total cost for the semester or session in which the candidate anticipates completing their degree requirements.

If degree requirements are not completed during the semester/session, the student originally applied for, the student must then reapply and pay the appropriate fees. A $50 late fee applies to applications received after the application deadline, and no applications will be accepted after the posted deadline date.

A student must specify which catalog they are using for their degree requirements in order for the university to determine if the requirements are met and if a degree can be certified. The latest date for substitution or waiver of required courses for degree candidates is two weeks after the last date of registration for full or summer terms.

Attendance at the Commencement Ceremony

Commencement is a symbolic ceremony, that students can elect to participate in after they have applied for their degree. Participation in commencement does not, in itself, mean that a student is considered an NMSU graduate. In order to be awarded a degree, a student must fulfill university requirements as determined by academic colleges. The degree will reflect the graduation date from the application for degree in which all degree requirements were determined by the academic colleges.

The academic colleges will confirm students’ eligibility to participate in the commencement ceremony that is held at the end of the fall and spring semesters. Eligible candidates who are in the process of completing their final degree requirements and degree recipients from the previous summer session will participate in the fall ceremony. Students who are in the process of completing their final degree requirements in the spring can participate in the spring ceremony. However, Bachelor degree candidates that wish to participate in a spring commencement, prior to completing degree requirements in summer school may do so if they meet the following conditions:

1. Receive permission from the Dean of their college
2. Show a minimum cumulative grade-point average of 2.0
3. Only need 12 or fewer credit hours to complete their degree requirements
4. These remaining credit hours must be offered in the upcoming summer schedule of classes
5. Submit a 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.

Academic Regalia

Each college may approve distinctive symbols to be worn by the top 10 percent of its graduates at commencement. Only one symbol may be worn by each graduate. In addition, the student with the highest honors in each college may wear a crimson-colored gown. No other symbolic additions to academic regalia are allowed without the approval of the Academic Deans Council.

Diploma

All fees and bills owed the university must be paid in full before a student may receive a diploma or official transcripts. The degree title and major(s) will be printed on the diplomas, in accordance to the degree application award, determined by the academic colleges. Academic honors will also be printed on the diplomas below the degree and major(s). The name on the diploma will reflect the student’s current official NMSU records. Name changes are only processed for currently admitted students.

Diplomas will be mailed to graduates approximately eight weeks after the individual colleges certify the degree requirements and the final grades have been processed by the University Student Records Office. The diploma will be mailed to the address specified on the degree application, unless an address change was requested before the last day of the semester.

Undergraduate Academic Standing

When a student does not maintain adequate academic standing, he/she is placed in Academic Warning. If the student’s academic standing does not improve, the placement progresses to Academic Probation I. Continued unimproved academic standing moves a student into Academic Probation II, then finally, 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.

Undergraduate Academic Warning

Issued only once, the first time a student’s cumulative GPA falls below a 2.0 while in good academic standing. The University Student Records Office will send the student a notification 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 cannot enroll in more than 15 hours of coursework during the semester.
2. The student may be required to enroll in a 3-credit hour special study skills/time management course specifically designed for students on Academic Warning, or an equivalent course approved by the appropriate associate dean or CAO of their campus.
3. Students may be required to enter into a contract with their advisor, approved by their department head that places further stipulations on Academic Warning. The contract may include, but is not limited to the following:
4. The student may be required to take at least one repeat course to try to improve their GPA.
5. Except for the special study skills/time management course, the student’s coursework may be restricted to their major.
6. The student may be required to get tutoring help.
7. The student may be required to see an academic counselor on a specified time schedule.
8. The number of credit 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 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.

**Undergraduate 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. Academic Probation I will also occur if a student falls below a 2.0 cumulative GPA from Good Academic Standing if Academic Warning already occurred in a previous term.

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 failing 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 may 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 Military & Veterans Programs Office.
4. Students admitted under special provisions whose transcripts indicate less than a 2.0 GPA are admitted on Academic Probation I.

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 transition happens the student remains on Academic Probation I. The student will be placed on Academic Probation II if he/she is 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.

**Undergraduate Academic Probation II**

Academic Probation II is issued in two ways.

- The first is when a student falls below a semester 2.0 GPA and the cumulative GPA remains below a 2.0 while on Academic Probation I.
- The second is when a student maintains a semester GPA greater than 2.0 while on Academic Probation II but the cumulative GPA is still less than 2.0.

The following restrictions are in place for student’s in Academic Probation II:

1. The student cannot enroll in more than 7 credit 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, 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 Academic Suspension. A student on Academic Probation II remains eligible for all extracurricular activities as governed by the rules of the specific activity.

**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. If they withdraw from the university while on Academic Probation, they continue on that same level of 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 I 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 apply for re-admission.

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 Readmission-Degree Seeking). 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
Summer Attendance Impact on Academic Standing
A student may use summer classes to try to get warning or probationary status removed. 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 campuses. Such attendance must raise the combined spring semester and summer GPA to 2.0 or better. Under no circumstances may a student on Academic Warning or Academic Probation be allowed to register for an overload. The current academic status is continued if the student withdraws from the university and the probation or suspension status applies to all subsequent enrollments until the cumulative GPA is 2.0 or higher.

Graduate Academic Probation and Suspension
Graduate Academic Standing is based on both the student’s semester GPA and cumulative GPA. The student must maintain a cumulative GPA of 3.0 or higher to remain on Graduate Academic Good Standing.

Graduate Academic Probation I: A graduate student is placed on Graduate Academic Probation I when a graduate student’s semester GPA is above a 3.0 and the cumulative GPA drops below 3.0; or when the semester and cumulative GPA’s drop below 3.0 and the previous academic standing is Graduate Academic Good Standing.

Graduate Academic Probation II: Is issued when a graduate student semester GPA and the cumulative GPA drops below as 3.0 and the previous academic standing is one of Graduate Academic Probation I or Graduate Re-admit on Probation I.

Graduate Academic Suspension:
If the graduate student is unable to maintain a semester GPA of 3.0 or higher and the cumulative remains below 3.0 GPA while under Graduate Academic Probation II, the student will then be placed on Graduate Academic Suspension.

Students on Graduate Academic Suspension are barred from enrolling in graduate level courses at NMSU while on Suspension. Graduate students on Graduate Academic Suspension must sit out a minimum of one semester. Graduate students on suspension who wish to continue Graduate School after suspension must re-apply to the department and Graduate School. The student must also petition College Academic Dean or the Graduate School Dean, based on the major and degree the student is pursuing to be removed from Graduate Academic Suspension. At this time the graduate academic suspension status will be evaluated for possible readmission to the department. Should the suspension be lifted, the graduate student is placed on Graduate Academic Probation II or Graduate Re-admit on Probation II until such time that the graduate cumulative GPA equals or exceeds 3.0.

If you have questions about your academic standing, please contact your department academic advisor or Graduate Dean’s office.

Student Academic Code of Conduct
The Student Academic Code of Conduct (SACC), applicable to both undergraduate and graduate students, provides procedures for the review and resolution of alleged or suspected academic misconduct within a reasonably prompt time frame. The full SACC is found in the university’s published Administrative Rules and Procedures (ARP), specifically ARP 5.10 and ARP 5.11.

While it is important to refer to the detailed governing rules in the ARP, the process is summarized as follows: An institution-wide Academic Conduct Officer is responsible for processing each case of alleged academic misconduct. The accused student is provided notice of the allegation and has the right to participate during the fact finding process. The student may contest the investigative findings or sanction before a neutral third party hearing panel member. Either party to the matter has the right to a final appeal of the findings or a Level II sanction to the Office of the Provost.

The SACC distinguishes between Level I Sanctions and Level II Sanctions, depending upon the severity of the offense and other factors. The Level I sanction includes a formal warning. Offenses by graduate students and repeat offenses, even if less serious are subject to a Level II Sanction. Level II sanctions may include a notation of academic misconduct on the student’s academic transcript.

The full policy, examples of academic misconduct, report form and a flowchart of the procedures for resolving alleged student academic misconduct is available at:

Policies
- ARP 5.10
- ARP 5.11

Examples of Academic Misconduct and Report Form
- ARP Appendix 5.10-A (Examples)
- ARP Appendix 5.11-B (Form)

Flowchart of Procedures
- ARP Appendix 5.11-A

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.” A student’s name, class level, college and major, dates of attendance, degree(s) earned, honors and awards, address, telephone number, NMSU email address, Aggie ID number, most recent previous educational institution attended, place of birth, and some information about students involved in recognized activities and sports.

Other information regarding disclosure of student data is posted on the University Student Records Office website and in the University Student Records Office (USRO), in compliance with the Act.

Requests for withholding directory information must be filed in writing with the USRO. A student may choose to hide his/her address and phone number from the campus phonebook through the myNMSU portal. This will only hide the information from the public but the records will still be officially kept within the USRO.

Social Security Numbers in Student Records
As required by law, social security numbers are collected from prospective and current students who are either applying for admission to the university or plan to seek employment on campus. The social security number is a confidential record and is maintained as such by the
Changes in Demographic Information

Students wishing to make a legal name change, citizenship change, social security number update or a gender update can do so through the University Student Records Office (USRO). All students will need to fill out the “Demographic Change form” located at https://records.nmsu.edu/forms/ and provide one of the following documents to the USRO. Legal name changes will only be processed for students currently enrolled at NMSU or any of its Community Colleges.

1. **Legal name change**: students will need one legal documentation with the new name on it. This can be a Government Issued ID (drivers license, state card or valid passport), a Birth Certificate, a Court Order, a Marriage Certificate/Divorce Decree or a Certificate of Naturalization/I551 Card. **Note**: Documentation is not required to add/delete hyphen, space, apostrophe, or to abbreviate a middle name to initial.

2. **Citizenship change**: Certificate of Naturalization or I551 card.

3. **Social Security Number Update**: students will need to provide an original signed Social Security Card. Unsigned cards will not be accepted.

4. **Gender Update**: students will need to bring a Government Issued ID (drivers license, state ID card or valid passport) and a Revised Birth Certificate

Students may update their “preferred name”, which is the name used in lieu of a student’s legal name, on certain documents, such as, the email display name, learning management system, the phonebook, class rosters and advisee lists. This can be done by the student through the myNMSU portal and does not need to be done at the USRO.

For more information about the specific documents that are needed please contact the University Student Records Office at (575) 646-3411.

Changes in Residency Status for Tuition Purposes

The University Student Records Office (USRO) does not determine the laws and rulings for determining Residency, these are state laws that the USRO simply administers. An individual must establish legal residency in New Mexico before he or she is entitled to pay in-state tuition rates.

The student’s initial residency status is determined at the time of admission, any changes to this status must be initiated by the student through the USRO. A continuing student, classified as a non-resident, who has satisfied the requirements to establish residency may submit a Petition for In-State Residency Tuition Classification along with the required supporting documentation to the USRO Office. Petitions must be filed on or before the third Friday of the semester for which the student is requesting resident tuition.

For specific information about the process of petitioning for In-State Residency or for information about who is eligible for residency for tuition purposes please visit the https://records.nmsu.edu/residency/ website or the University Student Records Office on the Las Cruces campus.

Official Transcripts

An official transcript is the University’s certified statement of your complete NMSU academic record in chronological order by semester and year. It includes the student’s coursework, grades and any degrees that were awarded. Any credit hours earned through transfer work are listed as the equivalent course at NMSU. Grades are not transferred, nor are they used to calculate the NMSU grade point averages. Official transcripts will not be released if the student is in debt to the university.

Transcripts can either be ordered in person at the University Student Records Office or online at https://records.nmsu.edu/transcripts/, there will be a fee for these that may vary depending on the total number of transcripts ordered and the type of delivery method that is selected. A student can request two types of transcripts an electronic one, which is sent as a secured PDF or a printed hard copy that can be delivered in a sealed envelope.

The name that will appear on the student’s transcript will match the name on the student’s official NMSU record. Name changes will only be processed for students currently enrolled at NMSU or any of its Community Colleges.

Purging of Student Files

All academic files for students who attend NMSU are kept for five (5) years following the student’s final term enrolled. Only archival documentation will be retained. The files of students who do not enroll within one year after being admitted are destroyed.

Common Course Numbering Crosswalk

The Post-secondary Education Articulation Act charges the New Mexico Higher Education Department with establishing and maintaining a common course numbering system, in consultation with faculty. To this end, the common course numbering system includes both equivalent (Common) and unique courses.

- **Common Course**: is any course that is offered at multiple institutions throughout the state, has the same prefix/number combination, the same title, the same description, and at least 80% of the learning outcomes for the course are the same.

- **Unique Course**: is any course that is unique to the institution (the NMSU system), has a prefix/number combination, title, description and learning outcomes that are unique to the institution (the NMSU System).

The table below shows the previous NMSU System-wide course prefix/number combination, the future Common Course Numbering prefix/number combination, and an indicator of whether the course is deemed Common or Unique throughout the state.
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**ANTH-ANTHROPOLOGY**

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| ANTH 1135G | ANTH 130G | Common |
| ANTH 1135L | ANTH 130GL | Common |
| ANTH 1136 | ANTH 118 | Unique |
| ANTH 1137G | ANTH 120G | Unique |
| ANTH 1140G | ANTH 125G | Common |
| ANTH 1160G | ANTH 202G | Common |
| ANTH 2140G | ANTH 115 | Common |
| ANTH 2150 | ANTH 116 | Common |
| ANTH 2996 | ANTH 297 | Unique |

**ARCH-ARCHITECTURE**

| ARCH 1105 | ARCT 150 | Unique |
| ARCH 1110 | ARCT 104 | Common |
| ARCH 1112 | ARCT 124 | Unique |
| ARCH 1114 | ARCT 154 | Unique |
| ARCH 1120 | ARCT 101 | Common |
| ARCH 1121 | ARCT 170 | Unique |
| ARCH 1122 | ARCT 204 | Unique |
| ARCH 1220 | ARCT 111 | Unique |
| ARCH 2111 | ARCT 210 | Unique |
| ARCH 2113 | ARCT 224 | Unique |
| ARCH 2114 | ARCT 250 | Unique |
| ARCH 2115 | ARCT 254 | Unique |
| ARCH 2116 | ARCT 260 | Unique |
| ARCH 2122 | ARCT 274 | Unique |
| ARCH 2124 | ARCT 295 | Unique |
| ARCH 2220 | ARCT 211 | Unique |
| ARCH 2994 | ARCT 264 | Unique |
| ARCH 2995 | ARCT 291 | Unique |
| ARCH 2996 | ARCT 290 | Unique |

**ARTH-ART HISTORY**

<p>| ARTH 1115G | ART 101G | Common |
| ARTH 2110G | ART 295G | Common |
| ARTH 2120G | ART 296G | Common |
| ARTH 2136 | ARTS 2671 | Unique |
| ARTH 300 | ART 300 | N/A |
| ARTH 305 | ART 305 | N/A |
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| ARTH 311 | ART 311 | N/A |
| ARTH 312 | ART 312 | N/A |</p>
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</table>

**Associate Degree and Certificate Programs**

Note: Any item in this catalog is subject to modification at any time by proper administrative procedure. Check with Academic Advising or your Program Manager to inquire about potential changes between Catalog Publications.

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.

**A**
- Applied Business - Associate of Applied Business (p. 82)
- Applied Business Retail and Merchandising Services - Certificate (p. 83)
- Associate in General Studies (p. 143)
A Note About Career Technical Education Courses

Students planning to pursue a four-year degree at New Mexico State University after completing their studies at NMSU Grants need to be aware that not all career technical education courses taken at NMSU Grants will apply toward a given major at NMSU. The number of NMSU Grants credits that may be counted toward a four-year degree depends on the major selected and any agreements providing for the acceptance of the career technical education courses.

It is best for students to consult advisers at both NMSU Grants and NMSU early in their associate degree program to insure that the maximum number of credits will apply toward the bachelor's degree program selected.

Placement Tests

All students should take the Math and English Placement Test to assist in determining skill levels, if they have not taken the ACT or SAT and earned adequate scores. Some students may benefit by taking developmental coursework in English and/or mathematics to strengthen skill levels in these areas. Although developmental courses do not meet degree requirements, they are certainly of benefit to those enrolled. After completing any developmental courses, new students are advised to complete ENGL 1110G Rhetoric and Composition, before completing other General Education requirements.

Certificate Programs

Students who plan to earn a certificate in one of the Certificate programs are encouraged to schedule an appointment with an Academic Adviser in the Student Services office; the student will be provided with a specific program of study. Additionally, speak with a Financial Aid adviser to ensure the certificate program is eligible for financial aid.

Additional Programs

In addition to Associate Degrees and Certificate programs offered by NMSU Grants, the college also offers additional programs of study that prepare students for Bachelor's Degrees and certification in several areas.

Students who want to earn credit in Early Childhood development may enroll in the Early Childhood (ECED) courses for CDA certification. Students who plan to earn a certificate in one of the Certificate programs are advised to select courses that fulfill the New Mexico Higher Education Department Common Core Requirements for all programs at NMSU and that transfer to other four-year institutions. General Education courses are designated with "G" following the prefix. Since approximately half of the requirements for an A.A. degree are met with elective credit, it is recommended that students plan these electives to meet other requirements for their planned baccalaureate degree. Undecided students are encouraged to follow this degree program because it is flexible and will help structure their coursework.

Students must complete all University degree requirements, which include: General Education requirements and elective credits to total at least 60 credits. Developmental coursework will not count towards the degree requirements and/or elective credits, but may be needed in order to take the necessary English and Mathematics coursework.

The New Mexico General Education course list can be found here.
**Associate of Science Degree**

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Area I: Communication</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENGL 1110G</td>
<td>Composition I</td>
<td>4</td>
</tr>
<tr>
<td><strong>English Composition - Level 2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select one from the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ENGL 2210G</td>
<td>Professional &amp; Technical Communication</td>
<td></td>
</tr>
<tr>
<td>or ENGL 2221G</td>
<td>Writing in the Humanities and Social Science</td>
<td></td>
</tr>
<tr>
<td><strong>Oral Communication</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMM 1130G</td>
<td>Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>or COMM 1115G</td>
<td>Introduction to Communication</td>
<td></td>
</tr>
<tr>
<td><strong>Area II: Mathematics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select one MATH 1000-2000G course from the New Mexico General Education list</td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td><strong>Area III: Laboratory Science a</strong></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Select one Area III: Laboratory Science Course (4 credits)</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>Area IV: Social/Behavioral Sciences</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select two Area IV: Social/Behavioral Science courses (6 credits total)</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>Area V: Humanities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select any 3 credit course listed in the New Mexico General Education link; see link above.</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>Area VI: Creative and Fine Arts</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select any 3 credit course from the New Mexico General Education link; see link above.</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>General Education Elective</strong></td>
<td></td>
<td>3-4</td>
</tr>
<tr>
<td><strong>Other Core Requirements</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OECS 105</td>
<td>Introduction to Information Technology</td>
<td>3</td>
</tr>
<tr>
<td><strong>Electives, to bring the total credits to 60</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select a minimum of 25 credits from lower division courses, one of which must be &quot;G&quot; course, and no more than 10 credits may consist of Career Technical Applied coursework and PHED credits. SPAN 1110, SPAN 1120, and ENGL 1120 are recommended for some Bachelor degree programs.</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits** | **60-61** |

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1. Student's subsequent transfer degree major should guide the selection of the math course. A General Education mathematics course is required for the degree but students may need to take any prerequisites needed to enter the course first.

2. See the General Education section of the catalog for a full list of courses.

3. Elective credit may vary based on prerequisites, dual credit, AP credit, and/or certificate coursework. The amount indicated in the requirements list is the amount needed to bring the total to 60 credits and may appear in variable form based on the degree. However, students may end up needing to complete more or less on a case-by-case basis and students should discuss elective requirements with their advisor.

See an advisor to determine which courses are considered "applied" coursework and run a degree audit.

300-400 level credits may not be applied to degree, without approval.

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**A Suggested Plan of Study**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Year</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fall</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENGL 1110G</td>
<td>Composition I</td>
<td>4</td>
</tr>
<tr>
<td>OECS 105</td>
<td>Introduction to Information Technology</td>
<td>3</td>
</tr>
<tr>
<td><strong>Area IV: Social/Behavioral Science course</strong></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>Area II: Mathematics Course</strong></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td><strong>Credits</strong></td>
<td></td>
<td><strong>16</strong></td>
</tr>
<tr>
<td><strong>Spring</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENGL 2210G or ENGL 2221G</td>
<td>Professional &amp; Technical Communication or Writing in the Humanities and Social Science</td>
<td>3</td>
</tr>
<tr>
<td><strong>Area III: Laboratory Science Course</strong></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>Area V: Humanities</strong></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td><strong>Area IV: Social/Behavioral Science Course</strong></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td><strong>Credits</strong></td>
<td></td>
<td><strong>16</strong></td>
</tr>
<tr>
<td><strong>Second Year</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fall</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMM 1130G or COMM 1115G</td>
<td>Public Speaking or Introduction to Communication</td>
<td>3</td>
</tr>
<tr>
<td><strong>Area IV: Creative and Fine Arts Course</strong></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td>3-4</td>
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<td>3</td>
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<tr>
<td>Elective</td>
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<td>3</td>
</tr>
<tr>
<td><strong>Credits</strong></td>
<td></td>
<td><strong>15-16</strong></td>
</tr>
<tr>
<td><strong>Spring</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Education Elective</td>
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<td><strong>Total Credits</strong></td>
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<td><strong>59-62</strong></td>
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</tbody>
</table>

1. See the General Education section of the catalog for a full list of courses.

2. Select a minimum of 25 credits from lower division courses, one of which must be "G" course, and no more than 10 credits may consist of Career Technical Applied coursework and PHED credits. SPAN 1110, SPAN 1120, and ENGL 1120 are recommended for some Bachelor degree programs.

---

**Program Manager:** Alfred Gene Romero  
**Phone:** (505) 287-6668  
**Email:** agene@nmsu.edu  
**Office:** Room 306, McClure Hall

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**Associate of Science Degree**

60 credits

The Associate of Science (A.S.) degree represents the completion of the first two years of several bachelor's degree programs related to the sciences. Students pursuing the Associate of Science degree are advised to select courses that fulfill requirements for specific programs at New Mexico State University and that transfer to other four-year institutions. Many of the courses are General Education (G) courses.
Students interested in the natural sciences (e.g., biology or chemistry) or fields closely related to the sciences (e.g., allied health science) are encouraged to follow this degree plan.

Students must complete all University degree requirements, which include: General Education requirements and elective credits to total at least 60 credits. Developmental coursework will not count towards the degree requirements and/or elective credits, but may be needed in order to take the necessary English and Mathematics coursework.

The New Mexico General Education course list can be found here.

Students are strongly encouraged to meet with an academic advisor for help in planning their studies and should be prepared to select their coursework from the following areas:

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>Area I: Communications</td>
<td>English Composition - Level 1</td>
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<td></td>
<td>ENGL 1110G Composition I</td>
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<td></td>
<td>ENGL 2210G Professional &amp; Technical Communication</td>
<td>3</td>
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<tr>
<td>Oral Communication</td>
<td>COMM 111G Introduction to Communication</td>
<td>3</td>
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<tr>
<td>or COMM 1130G Public Speaking</td>
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</tr>
<tr>
<td>Area II: Mathematics</td>
<td>MATH 1220G College Algebra</td>
<td>3</td>
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<tr>
<td></td>
<td>MATH 1250G Trigonometry &amp; Pre-Calculus</td>
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<tr>
<td></td>
<td>MATH 1350G Introduction to Statistics</td>
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</tr>
<tr>
<td>Area III: Laboratory Science</td>
<td>Select two Area III: Sciences Courses (8 credits)</td>
<td>8</td>
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<tr>
<td>Area IV: Social/Behavioral Sciences</td>
<td>Select one Area IV: Social/Behavioral Sciences Course (3 credits)</td>
<td>3</td>
</tr>
<tr>
<td>Area V: Humanities</td>
<td>Select one 3 credit course from the New Mexico General Education list; see link above.</td>
<td>3</td>
</tr>
<tr>
<td>Area VI: Creative and Fine Arts</td>
<td>Select one 3 credit course from the New Mexico General Education list; see link above.</td>
<td>3</td>
</tr>
<tr>
<td>General Education Elective</td>
<td>Take one 3 credit MATH course from the New Mexico General Education list; see link above.</td>
<td>3</td>
</tr>
<tr>
<td>Other Core Requirements</td>
<td>OECS 105 Introduction to Information Technology</td>
<td>3</td>
</tr>
<tr>
<td>Electives, to bring the total credits to 60</td>
<td>Select a minimum of 24 credits of lower division courses, 12 credits of which must be in MATH or a Laboratory Science. SPAN 1110, SPAN 1120, and ENGL 1120 are recommended for some Bachelor degree programs</td>
<td>24</td>
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<tr>
<td>Total Credits</td>
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<td>60</td>
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</table>

1 ENGL 2210G Professional & Technical Communication is required for the BSN program. Note campus subtitle for preferred BSN English course.
2 Nursing students are advised to take MATH 1220G College Algebra, MATH 1350G Introduction to Statistics or higher. MATH 1130G Survey of Mathematics does not satisfy the BSN requirement.

3 See the General Education section of the catalog for a full list of courses.
4 Nursing students are required to complete CHEM 1120G Introduction to Chemistry Lecture and Laboratory (non majors) and BIOL 2110G Cellular Biology and BIOL 2110L Cellular Biology Lab.
5 Nursing students are required to take PSYC 1110G Introduction to Psychology and CEPY 1120G Human Growth and Behavior for the BSN.
6 Nursing students are required to complete NUTR 2110 Human Nutrition, BIOL 2310 Microbiology & BIOL 2310L Microbiology Lab, BIOL 2210 Human Anatomy and Physiology I for the Health Sciences, and BIOL 2225 Human Anatomy and Physiology II.

### A Suggested Plan of Study

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Year</td>
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<td></td>
</tr>
<tr>
<td>Fall</td>
<td>MATH 1220G College Algebra</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ENGL 1110G Composition I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Area III: Laboratory Science Course 1</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Elective 2</td>
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<tr>
<td></td>
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<thead>
<tr>
<th>Spring</th>
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</thead>
<tbody>
<tr>
<td>ENGL 2210G Professional &amp; Technical Communication</td>
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<td></td>
</tr>
<tr>
<td>MATH or Science Elective 2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Area III: Laboratory Science Course 1</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>OECS 105 Introduction to Information Technology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Area IV: Social/Behavioral Science Course 1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Credits</td>
<td>16</td>
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<table>
<thead>
<tr>
<th>Second Year</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Fall</td>
<td>COMM 1130G Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>or COMM 1115G or Introduction to Communication</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 1350G Introduction to Statistics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Area V: Humanities Course 1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Science Elective 2</td>
<td>3-4</td>
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</tr>
<tr>
<td>Elective 2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Credits</td>
<td>15-16</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spring</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Area VI: Creative and Fine Arts Course 1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Science Elective 2</td>
<td>3-4</td>
<td></td>
</tr>
<tr>
<td>Math or Science Elective 2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Electives</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Credits</td>
<td>15-16</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 60-62

1 See the General Education section of the catalog for a full list of courses.
2 Select a minimum of 24 credits of lower division courses, 12 credits of which must be in MATH or Laboratory Science. SPAN 1110, SPAN 1120, and ENGL 1120 are recommended for some Bachelor degree programs.

Program Manager: Dr. Eyrusalam Bedasso
Phone: (505) 287-6644
Email: ebedasso@nmsu.edu
Office: Room 113C, Martinez Hall, 2nd Floor
Automotive Technology

Automotive Technology - Associate of Applied Science (p. 78)

Automotive Technology - Certificate (p. 79)

AUTO 102. Electrical Measuring Instruments
2 Credits (1+2P)
Selection, operation, and care of electrical measuring instruments.

AUTO 111. Automotive Mechanics Basics
4 Credits (4)
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 Credits (2+6P)
Principles of gasoline engine operation. Identification, design, function of engine components; engine disassembly and reassembly; troubleshooting, and rebuilding heads.

AUTO 113. Automotive Electricity and Electronics PT I
4 Credits (2+4P)
Topics include mastery of DC electricity, use of digital multimeters, troubleshooting electrical problems in starting, charging and accessory systems. Restricted to Community Colleges only.

AUTO 114. Automotive Electricity and Electronics PT II
4 Credits (2+4P)
Advanced AC and DC automotive electronic circuits. Troubleshooting electronically controlled components including supplemental restraint systems and convenience accessories. Restricted to Community Colleges campuses only.

Prerequisite: AUTO 113.

Learning Outcomes
1. Understand and demonstrate safety rules related to electronically controlled automotive systems. Diagnosis and demonstrate knowledge of series, parallel, and combination circuits, and their applications as applied to automotive repair. Demonstrate use of wiring diagrams as a diagnostic aide. Demonstrate use of meters, handheld labscopes, scan tools, and other diagnostic equipment. Demonstrate use of repair manuals, both hard copy and electronic. Demonstrate knowledge, diagnose and repair Air Bag Supplemental Inflatable Restraint systems Demonstrate knowledge, diagnose and repair various convenience electronic systems. Interpret customer concerns, create and complete a diagnostic routine and successfully repair an electrical problem. Diagnose and repair starting and charging systems.

AUTO 115. Automotive Engine Repair
5 Credits (2+6P)
Principles of gasoline engine operation. Identification of engine parts, operation, and function. Disassembly and reassembly. Engine problem diagnoses (cooling system, lubrication system, engine noises). Restricted to Community Colleges only.

AUTO 117. Electronic Analysis and Tune-Up of Gasoline Engines
5 Credits (2+6P)
Theory and operation of ignition and emission control systems and fuel system. Use of troubleshooting equipment and diagnostic equipment.
Prerequisite: AUTO 120 or consent of instructor.

AUTO 119. Manual Transmission/Clutch
5 Credits (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 Credits (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 122. Automotive Brakes
4 Credits (2+4P)
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. Restricted to Community Colleges only.

AUTO 124. Automotive Heating and Air Conditioning
4 Credits (2+4P)
R12 and R134A air conditioning systems maintenance diagnosis and repair. R12 to R134A conversion procedures. Troubleshooting automatic temperature controls and leak detection. Restricted to Community Colleges only.

AUTO 125. Brakes
5 Credits (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 Credits (2+6P)
Types of steering systems, suspension maintenance and repair, four-wheel alignment procedures.

AUTO 127. Basic Automatic Transmission
4 Credits (2+4P)
Theory and operation of the automatic transmission; maintenance, troubleshooting, diagnosis, and repair of components.

AUTO 129. Automotive Steering and Suspension
4 Credits (2+4P)
Diagnosis/service of suspension components including shocks, springs, ball joints, manual and power steering systems and four wheel alignment are some areas covered. Restricted to Community Colleges only.

AUTO 130. Introduction to Transportation Industry
3 Credits (3)
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
3 Credits (1+4P)
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. Restricted to Community Colleges campuses only.
Prerequisite(s): Class A CDL restricted license (permit) and either restriction of D.O.T.
AUTO 132. Automotive Air-Conditioning and Heating Systems 4 Credits (2+4P)
Theory and operation, reading schematic diagrams, troubleshooting, repair, and replacement operations performed.

AUTO 137. Fuel Systems and Emission Controls 4 Credits (2+4P)
Covers theory and operation of fuel system and emission control. Troubleshooting, vacuum diagrams, overhaul, repair and adjustment of carburetion and fuel injection.
Prerequisite(s): AUTO 117 or consent of instructor.

AUTO 139. Automotive Computer Controls 4 Credits (2+4P)
Same as OEPM 139.

AUTO 162. Advanced Non-Structural Repair I 4 Credits (2+4P)
This course will involve the students in all phases of minor non-structural damage repair. It will encompass sheet metal repair, advanced panel replacement and alignment.
Prerequisite(s): AUTO 161.

AUTO 163. Advanced Non-Structural Repair II 4 Credits (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 Credits (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 Credits (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 Credits (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 Credits (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 Credits (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 Credits (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 Credits (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 Credits (2+4P)
This course is a continuation of AUTO 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 201. Engine Performance I 4 Credits (2+4P)
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. Restricted to Community Colleges only.

AUTO 203. Engine Performance II 4 Credits (2+4P)
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. Restricted to Community Colleges only.
Prerequisite: AUTO 201.

Learning Outcomes
1. Be able to explain basic electrical theories. Be able to explain basic and advanced engine designs and engine operating theory. Be able to explain engine cooling and lubricating systems. Be able to explain intake and exhaust systems Test battery, starting and charging systems Test ignition systems including point type, electronic trigger type, and distributor-less systems. Test automotive fuel system including fuel tanks, lines, filters and pumps. Test basic electronic fuel injection systems. Test automotive computer input devices and controlled devices 1Demonstrate ability to work with PC based automotive software including Alldata,
AUTO 204. Engine Performance III
4 Credits (2+4P)
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 of 4 and 5 gas analyzers is mastered. Hybrid vehicles and the latest engine control systems are introduced. Restricted to Community Colleges only.

AUTO 205. Manual Drive Train and Axles
4 Credits (2+4P)
Operation, diagnosis, maintenance, repair or replacement of manual transmissions, clutch assemblies, differentials, drivelines, axles, and manual transaxles. Restricted to Community Colleges only.

AUTO 206. Automatic Transmissions
5 Credits (2+6P)
Operation, diagnosis, maintenance, and repair of automatic transmissions including rear wheel drive, front wheel drive, and electronically controlled transmissions and transaxles. Restricted to Community Colleges only.

AUTO 208. Introduction to Alternative Fueled Vehicles
3 Credits (3)
Course will familiarize student with conditions that are resulting in the alternative fueled vehicle movement as well as the design and safety precautions unique to each alternative fuel. Propulsion systems covered include electric vehicles, bio-fueled vehicles, hybrid-electric vehicles and hydrogen powered vehicles, along with other emerging technologies as appropriate. Restricted to: Community Colleges only.

Auto 209. Hybrid Vehicle Service Techniques
3 Credits (3)
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. Restricted to: Community Colleges only.

Prerequisites: AUTO 113 and AUTO 114.

AUTO 221. Cooperative Experience I
1-6 Credits
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 Credits
Individual studies in areas directly related to automotive technologies. May be repeated for a maximum of 12 credits.

Prerequisite: consent of instructor.

AUTO 290. ASE Certification Preparation
1 Credit (1)
This is the capstone course for the Automotive Technology Program and is a requirement for graduation. Consent of instructor required. Restricted to: AUTO majors. Restricted to Community Colleges campuses

Learning Outcomes
1. write technical reports explaining customers complaint(s), specific component malfunction(s) and related problems to include repair procedures, specifications, parts and costs associated with each specific repair
2. determine, categorize and document component or systems malfunctions which will be discussed in class
3. adequately identify safety hazards associated with electrical, electronic, hydraulic, pneumatic and mechanical systems before participating in any lab project
4. use a systematic approach to identify, diagnose and repair new hydro, electrical and mechanical systems
5. identify all related parts and components before attempting to repair each system
6. clearly identify and understand the specific function of each component before these systems and subsystems are dismantled for repairs
7. demonstrate proficiency in locating, identifying and following procedures for repairs as outlined on the Mitchell and All-DATA computer information systems
8. retrieve all phases of automotive information needed to repair the following: Electrical and Electronics, Engine Repair, Engine Performance, Automatic transmissions, Heating And Air Conditioning Systems
9. demonstrate proficiency in the proper usage of on-board computer scanners used to identify and properly diagnose possible malfunction within a specific on-board computer system
10. 1 demonstrate proficiency in the proper use of scanners, information and vehicle specifications to determine needed repairs
11. 1 identify, evaluate, diagnosis and repair electrical, electronic and mechanical systems and subsystems

AUTO 295. Special Topics
1-6 Credits
Topics to be announced in the Schedule of Classes.

Program Manager: Eric Oskey
Phone: (505) 287-6635
Email: ero@nmsu.edu
Office: 052A, Martinez Hall, 1st Floor

Automotive Technology - Associate of Applied Science

60 credits

The Associate of Applied Science in Automotive Technology provides training for employment as an automotive technician or in a related field. The Automotive Technology laboratory and classroom facilities have been equipped with the most current test and training equipment available. Classroom instruction is combined with practical training in the laboratory to provide students with service and repair procedures required for ASE certification. Additional training is available for those
technicians seeking to update current practices in the ASE certification areas.

Students must complete all University degree requirements, which include: General Education requirements and elective credits to total at least 60 credits. Developmental coursework will not count towards the degree requirements and/or elective credits, but may be needed in order to take the necessary English and Mathematics coursework.

### Program Requirements

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td><strong>General Education</strong></td>
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<tr>
<td><strong>Choose one course from four of the following six content areas for a total of 12-14 credits</strong></td>
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<tr>
<td><strong>Area I: Communications</strong></td>
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<tr>
<td>ENGL 1110G Composition I</td>
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<tr>
<td><strong>Area IV: Social/Behavioral Sciences</strong></td>
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<tr>
<td>PSYC 1110G or SOCI 1110G Introduction to Psychology</td>
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<td><strong>Area V: Humanities</strong></td>
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<tr>
<td>HIST 1110G United States History I</td>
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<td>HIST 1120G United States History II</td>
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<td>PHIL 1115G Introduction to Philosophy</td>
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<td>PHIL 2110G Introduction to Ethics</td>
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<td>PHIL 2230G Philosophical Thought</td>
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<tr>
<td><strong>Area VI: Creative and Fine Arts</strong></td>
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<tr>
<td>ARTH 1115G Orientation in Art</td>
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<td>ARTS 1145G Visual Concepts</td>
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<td>THEA 1110G Introduction to Theatre</td>
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<td><strong>General Education Elective</strong></td>
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<tr>
<td>ENGL 2210G Professional &amp; Technical Communication</td>
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<tr>
<td><strong>Automotive Core Requirements</strong></td>
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<tr>
<td>WELD 105 Introduction to Welding</td>
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<tr>
<td>AUTO 112 Basic Gasoline Engines</td>
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<tr>
<td>AUTO 117 Electronic Analysis and Tune-Up of Gasoline</td>
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<td>AUTO 119 Manual Transmission/Clutch</td>
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<td>AUTO 120 Electrical Systems</td>
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<td>AUTO 125 Brakes</td>
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<tr>
<td>AUTO 126 Suspension, Steering, and Alignment</td>
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<tr>
<td>AUTO 132 Automotive Air-Conditioning and Heating Systems</td>
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<tr>
<td>AUTO 137 Fuel Systems and Emission Controls</td>
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<tr>
<td>OETS 118 Mathematics for Technicians</td>
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<tr>
<td>or MATH 1215 Intermediate Algebra</td>
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</table>

**Total Credits**: 59

1. Each course selected must be from a different area and students cannot take multiple courses in the same area.
2. See the [General Education](#) section of the catalog for a full list of courses.

### A Suggested Plan of Study

This roadmap assumes student placement in ENGL 1110G Composition I and demonstrates how to complete an Associate degree in two years. The contents and order of this roadmap may vary depending on initial student placement in mathematics and English. It is only a suggested plan of study for students and is not intended as a contract. Course availability may vary from fall to spring semester and may be subject to modification or change. Students are advised to earn a C or better in courses to avoid repeating courses and may consider completing General Education courses in the summer.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td><strong>First Year</strong></td>
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<tr>
<td><strong>Fall</strong></td>
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<tr>
<td>ENGL 1110G Composition I</td>
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<tr>
<td>WELD 105 Introduction to Welding</td>
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<td>3</td>
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<tr>
<td>AUTO 112 Basic Gasoline Engines</td>
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</tr>
<tr>
<td>OETS 118 Mathematics for Technicians or MATH 1215 Intermediate Algebra</td>
<td>3</td>
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</tbody>
</table>

**Credits**: 15

| **Spring**                                          |                      |         |
| AUTO 117 Electronic Analysis and Tune-Up of Gasoline Engines |                      | 5       |
| AUTO 120 Electrical Systems                          |                      | 4       |
| AUTO 137 Fuel Systems and Emission Controls           |                      | 4       |
| PSYC 1110G or SOCI 1110G Introduction to Psychology or Introduction to Sociology | 3          |

**Credits**: 16

| **Second Year**                                      |                      |         |
| **Fall**                                             |                      |         |
| AUTO 119 Manual Transmission/Clutch                  |                      | 5       |
| AUTO 125 Brakes                                      |                      | 5       |
| AUTO 126 Suspension, Steering, and Alignment         |                      | 5       |

**Credits**: 15

| **Spring**                                           |                      |         |
| AUTO 132 Automotive Air-Conditioning and Heating Systems or AUTO 127 Basic Automatic Transmission | 4          |
| Area V: Humanities Course 1                          |                      | 3       |
| Area VI: Creative and Fine Arts Course 1              |                      | 3       |
| ENGL 2210G Professional & Technical Communication    |                      | 3       |

**Credits**: 13

**Total Credits**: 59

1. See the [General Education](#) section of the catalog for a full list of courses.

### Automotive Technology - Certificate of Completion

This Certificate is 100% embedded in, and leads to, the Associate of Applied Science in Automotive Technology at NMSU Grants.

Program Manager: Eric Oskey
Phone: (505) 287-6635
Email: ero@nmsu.edu
Office: 052A, Martinez Hall, 1st Floor
BCT 100. Introduction to Construction I  
2 Credits (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. May be repeated up to 2 credits.  
Restricted to Community Colleges campuses only.  
Corequisite(s): BCT 102; BCT 103.

BCT 102. Introduction to Construction II  
2 Credits (2+1P)  
Introduction to power and hand tools, blueprints, and basic rigging  
hardware and techniques. May be repeated up to 2 credits. Restricted to  
Community Colleges campuses only.  
Corequisite(s): BCT 101; BCT 103.

BCT 103. Introduction to Construction Laboratory  
3 Credits (3)  
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. May be repeated up to 3 credits.  
Restricted to Community Colleges campuses only.  
Corequisite(s): BCT 101; BCT 102.

BCT 104. Woodworking Skills I  
3 Credits (1+4P)  
Use and care of hand tools and elementary power tools, safety  
procedures, and supervised project construction.

BCT 105. Woodworking Skills II  
3 Credits (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 Credits (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 Credits (2+4P)  
Types and applications of paints and clear coatings. Use of fasteners,  
caulks, and sealants. Restricted to: Community Colleges only.

BCT 109. Plumbing I  
3 Credits (2+3P)  
Covers orientation to the trade. Students will learn about materials used  
in the plumbing industry and the different types of plumbing fixtures. It  
includes task-oriented projects in which the students apply many of the  
skills and knowledge that are presented through the National Center for  
Construction and Education Research (NCCER) Plumbing Program. May  
be repeated up to 3 credits.  
Prerequisite(s)/Corequisite(s): BCT 101, BCT 102. Restricted to  
Community Colleges campuses only.

BCT 110. Blueprint Reading for Building Trades  
4 Credits (2+4P)  
Same as DRFT 151, OET 101, OEPB 110.

BCT 111. Small Equipment Maintenance and Repair  
4 Credits (2+4P)  
Covers small engine theory, troubleshooting and repair, auto  
maintenance, hydraulic theory and repair lubricants, batteries and  
scheduled tool maintenance. Restricted to: Community Colleges only.
BCT 114. Basic Carpentry
3 Credits (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. May be repeated up to 3 credits. Restricted to Community Colleges campuses only. Corequisite(s): BCT 115; BCT 116.

BCT 115. Carpentry Level I
3 Credits (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. May be repeated up to 3 credits. Consent of Instructor required. Restricted to Community Colleges campuses only. Corequisite(s): BCT 114; BCT 116.

BCT 116. Basic Carpentry Lab
2 Credits (2)
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. May be repeated up to 2 credits. Restricted to Community Colleges campuses only. Corequisite(s): BCT 114; BCT 115.

BCT 117. Plumbing 1A
3 Credits (2+2P)
This course will introduce students to the plumbing profession. Students will become familiar with the tasks and responsibilities of plumbing professionals in the construction industry and gain a basic knowledge of the plumbing field. Restricted to Community Colleges campuses only.

BCT 118. Math for Building Trades
3 Credits (3)
Geometry, algebra, arithmetic, and basic trigonometry pertaining to mathematical applications in the building trades field. Same as OEET 118, DRFT 118, OEPB 118. Prerequisite: CCDM 103 N.

BCT 123. Residential Wiring I
3 Credits (2+3P)
Introduction to residential electrical wiring trade, electrical safety practices, basic electrical circuits and theory, reading and interpreting applicable construction prints/drawings, introduction to basic National Electric Code (NEC), and preparation for entry-level employment in residential electrical wiring. Restricted to Community Colleges campuses only.

BCT 130. Professional Development and Leadership
1 Credit (1)
As members and/or officers of various student professional organizations, students gain experience in leadership, team building, and community service. Students competing or participating in Skills USA are required to register for the course. May be repeated up to 6 credits. Consent of Instructor required. Restricted to: BCT majors. Graded: S/U Grading (S/U, Audit). Restricted to: Community Colleges only.

BCT 150. Forklift Operation
1 Credit (1)
Classroom instruction and hands-on practice to prepare students to operate a forklift safely in the workplace. Students will have the opportunity to earn a forklift operator’s permit. Consent of Instructor required. Restricted to Community Colleges campuses only.

BCT 200. Building Trades II
8 Credits (2+12P)
Continuation of BCT 100: roofing; exterior and interior finish; masonry; door, window, and cabinet installation.

BCT 206. Advanced Cabinetmaking
3 Credits (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 209. Plumbing II
3 Credits (2+2P)
Continuation of BCT 109. Provides students the opportunity to gain more practice in the skills and knowledge learned in Plumbing I. Students will install fixtures and run the various plumbing supply lines from Plumbing Level I. The course included hands on projects in which the students apply many of the competencies that have been presented through the National Center for Construction and Education Research (NCCER) Plumbing Program. May be repeated up to 3 credits. Prerequisite(s)/Corequisite(s): BCT 109.

BCT 217. Building and the Environment
3 Credits (3)
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 Colleges only.

BCT 218. Plumbing 2
4 Credits (2+4P)
This course builds on the skills and knowledge students have gained in previous BCT introduction to plumbing courses, focusing on installation of plumbing systems. Students will become familiar with the tasks and responsibilities of plumbing professionals in the construction industry and gain a basic knowledge of the plumbing field. Prerequisite(s): BCT 117 and BCT 119.

BCT 219. Weatherization in Construction
3 Credits (2+2P)
Introduction to industry weatherization standards and practices utilized in the construction of buildings for the purpose of energy conservation. Economic and environmental impacts of the use of energy in heating and cooling building will be examined. Prerequisite(s): BCT 101, BCT 102 and BCT 103.

BCT 221. Cooperative Experience I
1-4 Credits
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 223. Residential Wiring II
3 Credits (2+3P)
Introduction to electrical raceways and fittings; electrical conductors and cables; basic electrical construction drawings, residential electrical services, and electrical test equipment. Restricted to Community Colleges campuses only.
Prerequisite(s): BCT 123.

BCT 255. Special Topics
1-6 Credits (1-6)
Topics to be announced in the Schedule of Classes. May be repeated up to 12 credits. Consent of Instructor required. Restricted to Community Colleges campuses only.

BCT 290. Special Problems in Building Technology
1-4 Credits
Individual studies in areas directly related to building technologies.
Prerequisite: consent of instructor.

Program Manager: Dr. Marlene Chavez-Toivanen
Phone: (505) 287-6641
Email: marchave@nmsu.edu
Office: Martinez Hall

Building Trades Woodworking - Certificate of Completion

The 16 credit hour certificate in Building Trades Woodworking is designed to provide an introduction to the theory and skills necessary for the construction of wood based items such as furniture and cabinets.

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BCT</td>
<td>Building Trades Requirements</td>
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</tr>
<tr>
<td>104</td>
<td>Woodworking Skills I</td>
<td>3</td>
</tr>
<tr>
<td>105</td>
<td>Woodworking Skills II</td>
<td>3</td>
</tr>
<tr>
<td>106</td>
<td>Woodworking Theory and Practice</td>
<td>3</td>
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<tr>
<td>206</td>
<td>Advanced Cabinetmaking</td>
<td>3</td>
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<tr>
<td>255</td>
<td>Special Topics (Furniture Making)</td>
<td>3</td>
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<tr>
<td>290</td>
<td>Special Problems in Building Technology</td>
<td>1</td>
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<tr>
<td>Total Credits</td>
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<td>16</td>
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</tbody>
</table>

A Suggested Plan of Study

This roadmap is only a suggested plan of study in order to complete a Certificate in two semesters. It is not intended as a contract. Course availability may vary from fall to spring semester and may be subject to modification or change. Students are advised to earn a C or better in courses to avoid repeating courses.

First Year

Fall

BCT 104 Woodworking Skills I 3
BCT 106 Woodworking Theory and Practice 3
BCT 255 Special Topics 3
Credits 9

Spring

BCT 105 Woodworking Skills II 3
BCT 206 Advanced Cabinetmaking 3

BCT 290 Special Problems in Building Technology 1

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCT</td>
<td>General Education</td>
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<tr>
<td>110G</td>
<td>Composition I</td>
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<tr>
<td>1110G</td>
<td>United States History I</td>
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<tr>
<td>1120G</td>
<td>United States History II</td>
<td></td>
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<tr>
<td>1150G</td>
<td>Western Civilization I</td>
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<td>1160G</td>
<td>Western Civilization II</td>
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<tr>
<td>1115G</td>
<td>Introduction to Philosophy</td>
<td></td>
</tr>
<tr>
<td>1115G</td>
<td>Orientation in Art</td>
<td></td>
</tr>
</tbody>
</table>

Program Manager: Dr. Marlene Chavez-Toivanen
Phone: (505) 287-6641
Email: marchave@nmsu.edu
Office: Martinez Hall
### New Mexico State University - Grants

#### Applied Business Retail and Merchandising Services - Certificate

**16 credits**

The Certificate in Applied Business Retail and Merchandising Services will enable students to acquire the fundamental business skills needed to manage and promote a retail sales operation. This is an applied certificate aimed at developing a student's employee performance and leading to pursuit of the Associate of Applied Business.

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BUSA 1110</td>
<td>Intro to Business</td>
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<tr>
<td>BMGT 126</td>
<td>Retail Management</td>
<td>3</td>
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<tr>
<td>BMGT 132</td>
<td>Principles of Selling</td>
<td>3</td>
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<tr>
<td>BMGT 136</td>
<td>Forecasting Business Activity</td>
<td>3</td>
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<tr>
<td>BMGT 216</td>
<td>Business Math</td>
<td>3</td>
</tr>
<tr>
<td>BMGT 221</td>
<td>Internship I</td>
<td>1</td>
</tr>
</tbody>
</table>

**Total Credits**: 16

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### A Suggested Plan of Study

This roadmap is only a suggested plan of study in order to complete a Certificate in two semesters. It is not intended as a contract. Course availability may vary from fall to spring semester and may be subject to modification or change. Students are advised to earn a C or better to avoid repeating courses. BMGT 216 Business Math requires a C or better in CCDM 103n PreAlgebra, or an adequate placement in the Math Placement Exam.

#### First Year

**Fall**

- ENGL 1110G - Composition I: 4 credits
- BUSA 1110 - Intro to Business: 3 credits
- ACCT 2110 - Principles of Accounting I: 3 credits
- ECON 2120G - Principles of Microeconomics: 3 credits
- OECS 105 - Introduction to Information Technology: 3 credits

**Credit Total**: 16

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**Spring**

- ENGL 2210G - Professional & Technical Communication: 3 credits
- ACCT 2120 - Principles of Accounting II: 3 credits
- BMGT 216 - Business Math: 3 credits
- BMGT 221 - Internship I: 1 credit

**Credit Total**: 7

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### Second Year

**Fall**

- AREA: Humanities: 3 credits
- AREA: Creative and Fine Arts: 3 credits
- ECON 2120G - Principles of Microeconomics: 3 credits
- BMGT 126 - Retail Management: 3 credits
- BMGT 132 - Principles of Selling: 3 credits

**Credit Total**: 15

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**Spring**

- BMGT 221 - Internship I: 2 credits
- BMGT 240 - Human Relations: 3 credits
- COMM 1110G or COMM 1130G - Introduction to Communication or Public Speaking: 3 credits
- MGMT 2110 - Principles of Management: 3 credits
- MKTG 2110 - Principles of Marketing: 3 credits

**Credit Total**: 14

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**Total Credits**: 60

---

**Program Manager**: Dr. Marlene Chavez-Toivanen  
**Phone**: (505) 287-6641  
**Email**: marchave@nmsu.edu  
**Office**: Martinez Hall
**OECS 101. Computer Basics**
1 Credit (1)
Hands-on instruction to introduce computer use and commonly used software. Graded S/U.

**OECS 105. Introduction to Information Technology**
3 Credits (3)
Examination of information systems and their impact on commerce, education, and personal activities. Utilization of productivity tools for communication, data analysis, information management and decision-making. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.

**OECS 110. Introduction to Power Point**
1-3 Credits (1-3)
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. Restricted to Community Colleges campuses only.

**OECS 125. Operating Systems**
1-3 Credits (1-3)
Installation, configuration and optimization of current operating systems. Restricted to: Community Colleges only.

**OECS 128. Operating Systems Linux/Unix**
3 Credits (3)
Installation, configuration, and use of Linux/Unix operating system software and utilities including hardware management, file management, use of command line, and scripting. Restricted to: Community Colleges only.

**OECS 140. Introduction to Game Production Industry**
1-3 Credits (1-3)
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. Restricted to Community Colleges campuses only.

**OECS 141. Introduction to Interactive Game Programming**
1-3 Credits (1-3)
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. Restricted to Community Colleges campuses only.

**OECS 142. Developing of skills in programming using the Java programming language.** Restricted to: Community Colleges only.

**OECS 145. Mobile Application Development**
1-3 Credits (1-3)
Introduction to elements of mobile application coding including concepts, design strategies, tools needed to create, test and deploy applications for mobile devices. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.

**OECS 155. Special Topics - Introductory Computer Technology**
0.5-4 Credits (.5-4)
Topics to be announced in the Schedule of Classes. May be repeated up to 8 credits.

**OECS 185. PC Maintenance and Repair I**
1-3 Credits
Introduction to most common types of PC configurations, installations, and failures. This course will explore troubleshooting skills for maintaining and repairing common hardware and software related problems. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.

**OECS 192. C++ Programming I**
3 Credits (3)
Development of skills in programming using the C++ programming language. Restricted to: Community Colleges only.

**OECS 195. Java Programming I**
1-3 Credits
Developing of skills in programming using the Java programming language. Restricted to: Community Colleges only.

**OECS 200. Accounting on Microcomputers**
3 Credits (3)
Fundamental accounting principles using popular microcomputer software to include G/L, A/R, A/P, purchase order, billing, inventory, and forecasting modules. **Prerequisite:** ACCT 2110 or OATS 121.

**OECS 204. Linux Operating System**
1-3 Credits
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. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.

**OECS 205. Advanced Operating Systems: Administration**
3 Credits (3)
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. May be repeated for a maximum of 6 credits. **Prerequisite:** OECS 128.

**OECS 207. Windows**
0.5-3 Credits
Covers local installation, configuration of core local services, managing users, and the general local management and maintenance of Windows workstations. May be repeated up to 6 credits. **Prerequisite(s)/Corequisite(s):** OECS 185. Restricted to Community Colleges campuses only.
OECS 208. Internet Applications
1-3 Credits
Survey of the Internet to include e-mail, file transfer, current search techniques, the World Wide Web and basic Web page development. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.

OECS 209. Computer Graphic Arts
1-3 Credits
Basic graphics composition using computer programs to include editing and manipulating graphic images, clip-art, and printing of pictures. May be repeated for a maximum of 6 credits under different subtitles listed in the Schedule of Classes.
Prerequisite: OECS 105, BCIS 1110, or OECS 101.

OECS 210. Web Design for Business
3 Credits (3)
Design and create a website using HTML, CSS, web development tools and industry-recognized software while applying best practices in site management and business web presence.
Learning Outcomes
1. Students will identify and apply best practices for web design in a business setting. Students will create a basic web page utilizing WC3 principles. Students will explain the importance and impact of web presence in today's business environment. Students will determine and utilize web page features and techniques for a specific business. Students will create a web design management plan for business. Students will discuss web page tools for performance and web traffic analytics. Students will identify web design components for a mobile society.

OECS 211. Word Processing Applications
1-3 Credits
Basic word processing to include composing, editing, formatting, and printing of documents. May be repeated under different subtitles listed in the Schedule of Classes for a maximum of 6 credits.
Prerequisites: BCIS 1110 or OECS 105.

OECS 215. Spreadsheet Applications
1-3 Credits
Use of spreadsheets to include graphics and business applications. May be repeated for a maximum of 6 credits.
Prerequisites: BCIS 1110 or OECS 105.

OECS 220. Database Application and Design
1-3 Credits
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. Restricted to Community Colleges only.
Prerequisite(s): BCIS 1110 OR E T 120 OR E T 122 OR OECS 105.

OECS 221. Internship I
1-3 Credits
Work experience that directly relates to a student's major field of study that provides the student an opportunity to explore career paths and apply knowledge and theory learned in the classroom. Internships may be paid or unpaid. Students are supervised/evaluated by both the employer and the instructor. May be repeated up to 3 credits. Consent of instructor required. Restricted to: OECS majors. Graded: S/U Grading (S/U, Audit). Restricted to Community Colleges campuses only.
Prerequisite(s): Consent of instructor.

OECS 222. Internship II
1-3 Credits
Continuation of OECS 221. Each credit requires specified number of hours of on-the-job work experience. May be repeated up to 3 credits. Consent of Instructor required. Restricted to: OECS majors. Graded: S/U Grading (S/U, Audit). Restricted to Community Colleges campuses only.
Prerequisite(s): OECS 221 and consent of instructor.
OECS 245. Game Programming I  
3 Credits (3)  
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 Credits (3)  
Continuation of OECS 245. May be repeated for a maximum of 6 credits.  
Prerequisite: OECS 245.  
OECS 250. Systems Analysis and Design I  
3 Credits (3)  
Analysis, configuration, design and testing of organizations’ work flow as it relates to hardware, software, data, procedures and personnel. Systems Life Cycle approach matching end users’ needs to feasible financial, technical and operational solutions. Restricted to Community Colleges campuses only.  
Prerequisite(s): OECS 220.  
OECS 253. Applied Data Analysis and Management  
3 Credits (3)  
Applied use of advanced spreadsheet tools for data analysis and database tools for data and information management. Connect emerging topics in business to tools used in analyzing data and making raw data useful for business decision making.  
Prerequisite: BCIS 1110.  
Learning Outcomes  
1. Manage, integrate, and analyze data with data tools. Generate and summarize data. Use tools for business projections, comparisons, trends, and informed decisions. Create advanced queries and enhance table design. Use form tools and create custom forms. Use automation tools for efficiency. Secure and maintain data. Plan, research, create, and revise spreadsheets and databases for a specific business application. Discuss emerging topics in business related to data analysis and mangement.  
OECS 255. Special Topics  
1-4 Credits  
Topics to be announced in the Schedule of Classes.  
OECS 261. Introduction to Networks  
3-4 Credits (3-4)  
Introduction to networking principles including the practical and conceptual skills for understanding basic networking, planning and designing networks, implementing IP addressing schemes, examining the OSI and TCP/IP layers, and performing basic configurations for routers and switches. Aligns to the first course of the Cisco Networking Academy CCNA curriculum. Restricted to Community Colleges campuses only.  
OECS 262. Essentials of Routing and Switching  
3-4 Credits (3-4)  
Examination of the architecture, components, and operations of routers and switches in a small network. Student will learn how to configure, verify and troubleshoot: routers and switches, static routing, default routing, VLANs, and ACLs. Aligns to the second course of the Cisco Networking Academy CCNA curriculum. May be repeated up to 4 credits.  
Prerequisite(s)/Corequisite(s): OECS 261. Restricted to Community Colleges campuses only.  
OECS 263. Network Fundamentals  
3-4 Credits (3-4)  
Fundamentals of networking architecture, components, and operations including practical and conceptual skills using routers and switches. Student will learn how to configure, verify and troubleshoot static routing, default routing, VLANs, and ACLs. This course aligns to the third course of the Cisco Networking Academy CCNA curriculum. May be repeated up to 4 credits.  
Prerequisite(s)/Corequisite(s): OECS 262. Restricted to Community Colleges campuses only.  
OECS 264. Network Routing Protocols  
3-4 Credits (3-4)  
Fundamentals of routing protocols for troubleshooting advanced network operations. Covers common networking issues such as RIP, OSPF, and EIGRP for IPv4 and IPv6 networks. This course aligns to the fourth course of the Cisco Networking Academy CCNA curriculum. May be repeated up to 4 credits.  
Prerequisite(s)/Corequisite(s): OECS 263. Restricted to Community Colleges campuses only.  
OECS 269. Network Security  
3-4 Credits (3-4)  
Fundamentals of design and implementation of network security solutions that will reduce the risk of system vulnerability. May be repeated up to 8 credits. Restricted to Community Colleges campuses only.  
Prerequisite(s): OECS 204 or OECS 207 or OECS 261 or consent of instructor.  
OECS 275. PC Maintenance and Repair II  
1-3 Credits  
Continuation of OECS 185. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.  
Prerequisite(s): OECS 185.  
OECS 280. Desktop Publishing I  
3 Credits (3)  
Design and production of publication materials to fill the needs of business communities, using a microcomputer. May be repeated for a maximum of 6 credits. Same as OATS 280.  
Prerequisites: either BCIS 1110, OECS 105.  
OECS 290. Computer Technology Capstone  
1-3 Credits  
Refines skills learned in the OECS program. Culminates in a review and practice of advanced software applications. May be repeated up to 3 credits. Restricted to: OECS & OECT majors. Restricted to Community Colleges campuses only.  
Prerequisite(s): (OECS 125, OECS 128, OECS 207, OR OECS 203) AND (OECS 185 OR E T 283).  
OECS 299. Independent Study  
1-3 Credits  
Specific subjects to be determined based on need. Restricted to: Community Colleges only.  
Program Manager: Sarah Johnson  
Phone: (505) 287-6656  
Email: sjohns10@nmsu.edu  
Office: McClure Hall, Room 301
Computer Technology - Associate of Applied Science

Are you looking for a high demand job in Computer Technology?

We have a completely online program that aligns with industry certifications that will get you noticed.

Courses and their Industry Alignment

<table>
<thead>
<tr>
<th>Course</th>
<th>Industry Certification</th>
</tr>
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<tbody>
<tr>
<td>OECS 185 PC Maintenance and Repair I</td>
<td>Comptia A+</td>
</tr>
<tr>
<td>OECS 125 Operating Systems</td>
<td>Comptia A+</td>
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<tr>
<td>OECS 207 Windows</td>
<td>Microsoft Windows 10 Exam #70-697</td>
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<tr>
<td>OECS 204 Linux Operating System</td>
<td>Linux Exam LPIC-1 (101, 102)</td>
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<td>OECS 105 Introduction to Information Technology</td>
<td>Overview</td>
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<td>OECS 215 Spreadsheet Applications</td>
<td>Microsoft Office Specialist Exam #77-420</td>
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<tr>
<td>OECS 280 Desktop Publishing I</td>
<td>Adobe InDesign CS5 Exam #9AO-142</td>
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<tr>
<td>OECS 230 Data Communications and Networks I</td>
<td>Comptia Network+</td>
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<td>OECS 231 Data Communications and Networks II</td>
<td>Comptia Network+</td>
</tr>
<tr>
<td>OECS 280 Desktop Publishing I</td>
<td>HTML 5/ CSS</td>
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</table>

Entry-level positions usually start around $15 an hour or $30,000 a year. For more information, search job sites like Indeed for A+ certification or Computer Technician. These positions are growing rapidly with new companies moving into new Mexico all of the time.

Our program also leads into the online Bachelor of Information Communication Technology at NMSU Las Cruces.

Feel free to contact the Program Manager, Sarah Johnson. See contact information under Contact tab.

60 credits

The Associate of Applied Science in Computer Technology prepares students for entry-level work in the IT field. Skills include PC repair, installing and configuring operating systems, managing network systems and installing and configuring standard business software.

Students must complete all University degree requirements, which include: General Education requirements and elective credits to total at least 60-62 credits. Developmental coursework will not count towards the degree requirements and/or elective credits, but may be needed in order to take the necessary English and Mathematics coursework.

(See also Certificate in Computer Technology) (p. 88)

A Suggested Plan of Study

This roadmap assumes student placement in ENGL 1110G Composition I. The contents and order of this roadmap may vary depending on initial student placement in mathematics and English. It is only a suggested plan of study for students and is not intended as a contract. Course availability may vary from fall to spring semester and may be subject to modification or change.

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<th>Title</th>
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<td>Introduction to Information Systems</td>
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<td>or Introduction to Information Systems</td>
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<tr>
<td>OECS 125</td>
<td>Operating Systems</td>
<td>3</td>
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<tr>
<td>or OECS 269</td>
<td>or Network Security</td>
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<tr>
<td>OECS 185</td>
<td>PC Maintenance and Repair I</td>
<td>3</td>
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<td>OECS 204</td>
<td>Linux Operating System</td>
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<tr>
<td>OECS 207</td>
<td>Windows</td>
<td>3</td>
</tr>
<tr>
<td>OECS 215</td>
<td>Spreadsheet Applications</td>
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<td>OECS 221</td>
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<td>OECS 230</td>
<td>Data Communications and Networks I</td>
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<td>OECS 231</td>
<td>Data Communications and Networks II</td>
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<tr>
<td>FDMA 1360</td>
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</table>

Total Credits: 60-62
If all courses are completed, apply for the Certificate in Computer Technology

Summer
An OEC/C S/CMT Elective Course

Credits 3

Second Year
Fall
ENGL 1110G Composition I
SOCI 1110G Introduction to Sociology
Select one Laboratory Science Course (4 credits from General Education list)
FDMA 1360 Web Design I

Credits 14

Spring
ENGL 2210G Professional & Technical Communication
OECS 221 Internship I
Choose one course from Area II, III, or VI
ARTS/C S/FDMA/OECS Elective Courses

Credits 13-14

Total Credits 60-61

1 See the General Education section of the catalog for a full list of courses.

Program Manager: Sarah Johnson
Phone: (505) 287-6656
Email: sjohns10@nmsu.edu
Office: McClure Hall, Room 301

Creative Media Design
Are you looking for a high demand job in Creative Media/Graphic Design?
We have a completely online program that will get you noticed.

Courses and their Industry Alignment
FDMA 1360 Web Design I = HTML, CSS
FDMA 1510 Introduction to 3D Animation = 3D Studio Max
FDMA 1120 Desktop Publishing
FDMA 1535 Introduction to Illustrator = Adobe Illustrator
FDMA 1515 Introduction to Digital Image Editing - Photoshop = Adobe Photoshop
FDMA 1710 2D Animation = 3D Studio Max
FDMA 1630 Principles of Design
FDMA 1210 Digital Video Production I = Adobe Premiere
FDMA 2360 Web Design II = Javascript
FDMA 2994 Portfolio Design & Development

Creative Media Design - Associate of Applied Science (p. 99)
FDMA 1110. Film History
3 Credits (3)
This course surveys the history of cinema—investigating the process by which the original “cinema of attractions” evolved into a globally dominant form of visual storytelling. We will explore the development of cinema both as an art form and as an industry, and consider the technological, economic, cultural factors, and key international movements that shape it.
Learning Outcomes
1. Develop appreciation for the history of cinema.
2. Develop knowledge of the key eras in the history of US cinema.
3. Learn the characteristics of major movements in international cinema.
4. Explain technological innovations that were necessary for, and integral to, the advancement of cinema.
5. Recognize the various elements that go into telling a story in cinema.

FDMA 1120. Desktop Publishing
3 Credits (2+2P)
This course is designed to teach introductory skills for designing and creating publications and presentations with layout software. The course will focus on graphics and typographic design, fonts, and other skills for print and web publishing.
Learning Outcomes
1. Demonstrate knowledge of fundamental features and navigation of desktop publishing software.
2. Combine text and images for effective communication.
3. Develop a balanced composition through use of color, contrast, and alignment.
4. Produce documents with professional layout and typography skills.
5. Create attractive and effective designs.
6. Combine knowledge of typography, images, and design principles to produce professional print and web media.
7. Create or add to a professional design portfolio for future use.

FDMA 1210. Digital Video Production I
3 Credits (2+4P)
An introduction to digital video production. Students learn camera operation, lights and audio equipment. Hands-on production is completed in the studio and on location.
Learning Outcomes
1. Plan and produce a digital video project
2. Apply post-production workflow
3. Work in team and as individual to complete digital video projects.

FDMA 1220. Introduction to Digital Video Editing
3 Credits (3)
In this course, students learn the basics of the post-production process for non-linear video editing. Students work with multiple video formats and create short movies for multiple distribution platforms. Skills include media management and professional terminology. Sections on the Main Campus will be restricted to CMI students.
Learning Outcomes
1. Define concepts related to digital video editing.
2. Use non-linear video editing software for editing a short film
3. Enhance storytelling through the use of continuity, timing, cutaways, intercutting, compositing, transitioning, jump cutting, montaging and animating.
4. Use text, titles, transitions, video effects, sound effects, dialogue, and visual assets for digital video editing.

FDMA 1250. Web Design I
3 Credits (2+2P)
This course provides an introduction to web development techniques, theory, and design. Students will learn HTML, CSS application, and strategies for effective site navigation and design, along with industry standard web editing software to develop various websites. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): ARTS 1520 OR FDMA 1515.
Learning Outcomes
1. Acquire and utilize web design terminology.
2. Create basic web pages using HTML.
3. Demonstrate how to use industry-standard, web editing software.
4. Design professional pages that are easy to navigate and quick to load.
5. Develop a basic comprehension of CSS
6. Prepare and export a variety of graphics to be used online.
7. Compare and contrast designing for web media vs. print media.
8. Analyze the importance of web presence in today’s business/social climate
FDMA 1410. Audio Production I
3 Credits (2+2P)
Students will learn about and apply essential tools and techniques in analog and digital audio production. Topics include acoustic science, microphones, recording and mixing techniques, analog and digital audio hardware and software, including, multi-track, computer-based recording and editing systems. Restricted to: Community Colleges only.
Prerequisite(s): FDMA 1210 and FDMA 2410.
Learning Outcomes
1. Apply tools and techniques in analog and digital audio production
2. Illustrate the fundamentals of acoustic science.
3. Model professional behavior used in audio recording.

FDMA 1415. Principles of Sound
3 Credits (2+2P)
The creation of a professional quality original media soundtrack is possible for relatively low production/post production cost. This class is designed to give the student an overview of creating sound for a variety of digital media. Topics include acoustic principles, sound design, audio hardware, recording techniques, and editing, processing, and multi-track mixing, using software applications. Restricted to: Community Colleges only.
Prerequisite(s)/Corequisite(s): FDMA 1220.
Learning Outcomes
1. Record and edit wild sound effects and synced dialogue
2. Discover, upload, and edit on-line music, ambience and sound effect loops
3. Implement audio design theories
4. Create an aesthetic soundtrack which incorporates multiple elements and dimensions
5. Design, edit, process, mix and master a synced multi-track soundtrack
6. Demonstrate capable use of digital audio production and post-production workflow
7. Produce short audio projects which meet media industry technical standards

FDMA 1510. Introduction to 3D Animation
3 Credits (3)
This course provides an overview of 3D animation production processes. 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. Students will review and critique other's animation, as well as plan and produce original animation for review by classmates and as part of a CGI demo reel.
Prerequisite(s): FDMA 2382 or FDMA 2381 or consent of instructor.
Learning Outcomes
1. Demonstrate a fundamental understanding of 3D animation history and principles.
2. Analyze animation work of other artists.
3. Appropriately utilize the various media technologies for digital 3D animation.
4. Demonstrate and apply basic techniques of digital 3D animation.
5. Demonstrate and apply basic processes of creating CGI for a narrative.
6. Apply some basic strategies for developing and creating a story visually, and create original animations.
7. Present original animations to instructor and classmates for critique.
8. Create a CGI demo reel of work completed during the course.

FDMA 1515. Introduction to Digital Image Editing - Photoshop
3 Credits (2+2P)
In this course, students will learn how to use the tools in Adobe Photoshop to create new images and edit existing images. Tools used will include selections, layers, and adjustments, among other pixel editing tools. Basic composition and output will be emphasized in all projects. May be repeated for a maximum of 6 credits.
Learning Outcomes
1. Make and refine selections
2. Adjust color and tone in an image
3. Eliminate unwanted objects in an image
4. Apply layers to organize and create effects
5. Create brushes, styles and vector shapes
6. Prepare image for print and screen output
7. Apply masking and layers to non-destructively edit an image
8. Effectively utilize blending modes and layer styles
9. Apply adjustment layers
10. Apply design principles including typography

FDMA 1531. Evolution of Electronic Games
3 Credits (2+2P)
Focus on the evolution of video games and how they have shaped mainstream entertainment. May be repeated up to 6 credits.
FDMA 1535. Introduction to Illustrator
3 Credits (2+2P)
Students receive instruction on vector graphics creation using vector illustration software. The students will create professional-quality artwork for print publishing and multimedia graphics. Instruction includes creating and manipulating basic shapes, drawing with the pen tool, using various brushes, working with type and preparing graphics for web, print, and digital publication. May be repeated for a maximum of 6 credits.

Learning Outcomes
1. Apply a variety of shape blending options
2. Create and apply new gradients
3. Apply Gradient Meshes and Envelopes
4. Create symbols, brushes and vector shapes
5. Apply Pathfinder and other effects
6. Effectively utilize the pen tool to draw and edit shapes
7. Effectively utilize Vector tools
8. Prepare image for print and screen output
9. Apply clipping masks
10. 1Prepare image for use in another program
11. 1Apply design principles including typography

FDMA 1536. Advanced Computer Illustration
3 Credits (2+2P)
Advanced techniques in 2D vector drawing and fundamentals of 3D illustration for use in print, web, and multimedia applications. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.

Prerequisite(s): FDMA 1535.

Learning Outcomes
1. Demonstrate proficiency in using advanced features of Illustrator.
2. Identify and create different illustrator/art styles using advanced techniques for shading, perspective, light, reflection.
3. Produce high quality digital imagery incorporating basic principles of composition.
4. Create a series of illustrations demonstrating a design competency in layout foundation and illustrative moods or client/project based solutions.
5. Create high quality portfolio pieces that demonstrate an advanced knowledge of design, composition and Illustrator techniques.
6. The students will produce finished printed portfolio pieces demonstrating a comprehensive knowledge of typographical, design, illustrative and layout skills

FDMA 1545. Introduction to Photography & Digital Imaging
3 Credits (2+2P)
This course is a study of the principles and techniques of photography using digital equipment, and discusses how digital cameras, imaging editing, and technology have changed the world of photography. Students will learn about studies in resolution, lighting, software, editing, printing, and web applications. They will gain fundamental knowledge in the rapidly expanding technology of photography and imaging, and be able to incorporate the knowledge into all areas of digital graphics.

Learning Outcomes
1. Exhibit proper usage of the principles and techniques of photography using digital equipment.
2. Utilize features and techniques of a digital camera with proper use of lenses, settings, and flashes.
3. Create photo collections that represent proper use of technical skills.
4. Demonstrate proficiency in planning, lighting, capturing, and distributing photographic projects which show ability to create photographs artistically and to tell a story or express an idea.
5. Utilize appropriate software to create original projects.
6. Demonstrate knowledge in post-production of photos as to sizing, sampling, resolution, and exporting.
7. Produce original projects which respect intellectual property of others.
8. Create a digital portfolio of work completed during the course.

FDMA 1555. Introduction to the Creative Media Industry
3 Credits (3)
This class is an introductory course for students who are beginning their understanding of Media and how it affects them and our society. It offers a broad-stroked view of the entire industry including Marketing, Production, History, Jobs, Design, Architecture, New Media Literacy, and industry standards. Students will listen to experts in the field, get involved in open discussions about the industry and use new information to complete hands-on individual & group assignments.

Learning Outcomes
1. The basic philosophies and methods that guide people working in the Creative Media industry.
2. Knowledge of a wide variety of different jobs, qualifications and paradigms used in the industry.
3. Marketing, Production, Budgets, History, New Media, Inspiration and other aspects of the industry.
4. An accurate view of the Creative Media field.
FDMA 1630. Principles of Design
3 Credits (2+2P)
This course will explore how we see and use visuals to communicate information. Students will develop critical thinking skills in applying concepts of basic design principles. Students will apply the concepts with hands-on and analysis assignments. These concepts will then be applied to design for advertising, print, digital media, and web design. The business of design will also be covered with emphasis on client relations and networking. Restricted to: Community Colleges only. Prerequisite(s): FDMA 1535

Learning Outcomes
1. Practice Creativity
2. Plan a Design project
3. Demonstrate the effective use of Emphasis Contrast
4. Demonstrate the effective use of Balance and Alignment
5. Demonstrate the effective use of Harmony and Repetition
6. Demonstrate the effective use of Flow, Movement, and Rhythm
7. Demonstrate the effective use of Simplicity and Economy
8. Effectively apply basic color theory
9. Demonstrate the effective use of Typography principles
10. Apply design principles to Screen Print Projects
11. Develop client relations

FDMA 1710. 2D Animation
3 Credits (2+2P)
Concepts and techniques in storyboarding and creating interactive 2D animations for web, multimedia and video. Prerequisite(s): FDMA 1535.

Learning Outcomes
1. Be able to correctly storyboard an animation scene
2. Define and demonstrate basic animation terminology and principles.
3. Produce a complete hand drawn animation using industry standard software and processes.

FDMA 1715. 2-D COMPOSING & FX
3 Credits (3)
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 unrendered animation into a final piece with advanced 3D lighting, spacing, and digital effects so that it can achieve a dynamic, professionally rendered look. Restricted to Las Cruces campus only.

Learning Outcomes
1. The goal of this class is for students to learn how to use advanced compositing and effects tools in order to achieve a more dynamic and professional visual look for their animations or motion graphics.
2. By the end of the class, you should be proficient animation compositors that can assemble and synthesize a basic animation into a rendered, visually sophisticated piece.
3. Students who pass this class will have a basic to intermediate knowledge of Adobe After Effects.

FDMA 1720. 3-D Character Design
3 Credits (2+4P)
Focus on designing a character and then taking that design and building it in 3D using intermediate modeling techniques. May be repeated for a maximum of 6 credits.

Prerequisite(s): FDMA 1510 or FDMA 2530.

Learning Outcomes
1. Translate concept art into a low and high resolution 3D model using proper modeling techniques
2. Use Polygon modeling techniques to create a 3D character
3. Layout UVs and utilize Adobe Photoshop to texture a model.

FDMA 1996. Selected Topics
1-4 Credits (1-4)
Specific titles to be announced in the Schedule of Classes. May be repeated for a maximum of 18 credits. Restricted to Community Colleges campuses only.

Learning Outcomes
1. Varies

FDMA 2111. Environmental Scene Design
3 Credits (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(s): FDMA 1510 or FDMA 2530.

FDMA 2120. Film Crew I/ Introduction to Film and Media Workflow
9 Credits (9)
An introduction to the film industry. This class teaches film production processes, film crew hierarchy, film production set-safety and etiquette and provides hands-on training in industry standard film production equipment. Students complete the semester by participating as a below-the-line crew member on a short film. Restricted to: Community Colleges only.

Learning Outcomes
1. Assist producers and directors in completing a professional film project
2. Work effectively in production crew positions in a group environment.
3. Recognize and articulate specific film production structure, from original concept to final release

FDMA 2125. Film Crew II
9 Credits (9)
The second course designed to train students to become working members of film crews. It will be taught by working film professionals. Content will be lecture and hands-on. Students complete the semester by working as part of an actual film crew as below-the-line and above-the-line crew members. Restricted to: Community Colleges only.

Prerequisite(s): FDMA 2120.

Learning Outcomes
1. Understand film production processes used to produce a film
2. Manage craft area job functions
3. Model on-set protocols and professional behaviors
4. Assist producers and directors in completing a professional film project
FDMA 2150. Desktop Publishing II
3 Credits (2+2P)
This class will enhance and build upon student layout/design skills developed in the Introduction to Desktop Publishing course, incorporating intermediate to advanced concepts in typography and layout design. Upon completion of this course, students will be able to use page layout software to prepare a variety of documents for presentation and critique, including newsletters, instructional flyers, and other complex design/typographic pieces. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): FDMA 1120.
Learning Outcomes
1. Build upon knowledge of design and design terminology.
2. Exhibit intermediate to advanced design principles using type, layout, and color.
3. Demonstrate skill in intermediate to advanced concepts and features of page layout software.
4. Exhibit knowledge of styles, tables, images and clipping paths and interactive documents as well as printing preparations and procedures.
5. Create layouts for print, web, and other media that demonstrate an intermediate to advanced knowledge in typography and layout design.
6. Format and produce newsletters and instructional flyers, as well as larger, complex projects such as packaging mechanicals, multiple master page documents, and books.
7. Assess works of graphic design for quality and effectiveness.
8. Utilize produced material to create or add to a design portfolio for future use.

FDMA 2210. Digital Video Production II
3 Credits (2+2P)
Advanced techniques of the tools and application of professional film making. May be repeated for a maximum of 6 credits.
Prerequisite: FDMA 1210.
Learning Outcomes
1. Demonstrate the ability to produce and manage a video project: Produce a script, storyboard, and production schedule for a video project designed for a specific audience.
2. Demonstrate proficiency in producing quality digital video footage and audio tracks: Shoot to the script and storyboard using a variety of camera and lighting techniques; Produce a finished complex sound track including narration, music, and sound effect.
3. Demonstrate ability to produce and edit a professional quality video project: Integrate all production aspects of the project including video, audio, graphics, titles, transitions, and effects. Guide the project through the final production stages.
4. Develop competency in digital video distribution using various formats and techniques: Distribute project in various formats which could include DVD and web posting.

FDMA 2241. Advanced Camera Techniques
3 Credits (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(s): FDMA 1210.
Learning Outcomes
1. Students knowledge of high-end video camera operation and features.
2. Students must know all the working features of the video production equipment being used during the course in order to achieve the desired footage as required by the instructor.
3. Demonstrate proficiency in producing quality digital video footage.
4. Individuals must acquire the knowledge of different shooting styles in different productions situations and use those acquired skills to produce the appropriate video footage.
5. Using the proper lighting in different on location shooting styles.
6. Skill of each individual utilizing the usage of high-end camera equipment such as dollies, cranes, and Steadicam.
7. Each individual must work as a team player to create professional style video footage.

FDMA 2285. Digital Video Production and Editing II
3 Credits (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. Restricted to Community Colleges campuses only. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): FDMA 1220.
Learning Outcomes
1. Intermediate to advanced video editing create short films and training videos, create TV quality commercials, direct a news broadcast, and work as a mentor to students on digital media equipment.

FDMA 2287. Digital Design Studio
1-3 Credits
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. May be repeated for a maximum of 6 credits.
Prerequisite(s): FDMA 1630 or ARTS 1712.
Learning Outcomes
1. Demonstrate competency in the use of InDesign software.
2. Create appropriate visual solutions based on target marketing information.
3. Demonstrate competency in the design and production of advertising and promotional materials.
4. Present ideas and concepts effectively and competently.
5. Visually demonstrate design solutions to be used in a portfolio.
FDMA 2310. History of Cinema I
3 Credits (3)
This course surveys the history of cinema - investigating the process by which the original "cinema of attractions" evolved into a globally dominant form of visual storytelling. We will explore the development of cinema both as an art form and as an industry, and consider the technological, economic, cultural factors, as well as many key international movements that helped shape it. Restricted to: G-CMI, DFM, ANVE majors.
Learning Outcomes
1. Gain a greater appreciation for the history of cinema
2. Develop knowledge of the key eras in the history of U.S. cinema
3. Learn the characteristics of major movements in international cinema
4. Understand the various elements that go into telling a story in cinema: screenplay, narrative devices, director, producer, talent, production design, cinematography, editing, sound design
5. Learn how major genres in U.S. cinema have evolved in the past 100+ years
6. Gain a basic understanding of the operations and organization of the Hollywood film industry, from the studio system until today
7. Gain an awareness of the shifts in the film industry that present new opportunities for independent filmmakers
8. Understand the importance of learning about the history of cinema to the process of becoming a filmmaker
9. Strengthen public speaking skills

FDMA 2311. History of Animation
3 Credits (3)
Explores the history of Animation as an art form and industry through readings, screenings, lecture and periodic guest speakers. Restricted to: G-CMI, ANVE, DFM majors. Restricted to Las Cruces campus only.
Learning Outcomes
1. To expand your knowledge of the history of animation and its evolution to the modern day.
2. To expand your ability to view animation critically and to understand its early connections to cartooning as well as its ongoing cultural presence and relevance.
3. To expand your comfort with accessing information and completing assignments both online and independently. Canvas will be utilized for many of our readings and for some response assignments.

FDMA 2312. History of Media Design
3 Credits (3)
An introduction to the principles of design history and theory within a chronological framework of historical and emerging media.
Learning Outcomes
1. Introduction to visual communication: Defines design media; Discuss universal design principles and strengthen student basic design skills.
2. Historical technological development and design: Prehistoric communication; Beginnings of alphabet and written language; Movable type and the printing press; Industrial revolution; Digital Age; Designers and Trends; Personalities and their influence and contributions
3. Identify design styles and discuss the relevance of how design influences: Idea generation; Trend sources; Influences or appropriation; Propaganda and advertising.

FDMA 2325. Advanced Photoshop
3 Credits (2+2P)
This course expands on the Photoshop skill set to develop proficiency with selections, masking, channels, filters, color correction, painting tools, vector integration, video, special effects, and compositing techniques. The focus is on the core image-editing tools of Photoshop that can be universally applied to photography, print, film or the web. The material is covered in production-oriented projects and students develop work suitable for portfolios. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): FDMA 1515.
Learning Outcomes
1. Create effects using advanced blending techniques
2. Effectively utilize advanced masking techniques
3. Refine Selections with advanced techniques
4. Assess Adjust color in an image
5. Utilize advanced photo enhancement techniques
6. Alter images using Photoshop painting techniques
7. Create brush presets
8. Create vector elements with paths
9. 1Add manipulate type on a path
10. 1Create advanced special effects
11. 1Apply vanishing point warping
12. 1Create a video clip
13. 1Apply color adjustments to video

FDMA 2326. Digital Photography and Imaging II
3 Credits (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. Restricted to: Alamogordo campus, Carlsbad campus, Dona Ana campus.
Prerequisite(s): FDMA 1545.
Learning Outcomes
1. Apply proper exposure techniques.
2. Practice effective composition techniques.
3. Demonstrate knowledge of working with Camera RAW files.
4. Demonstrate proper image adjustment and correction techniques.
5. Successfully apply the basics of HDR digital photography.
6. Apply techniques for modifying light.
FDMA 2360. Web Design II
3 Credits (2+2P)
In this course, students will refine their skills in coding and web graphic design as well as be introduced to methods in constructing sites that adhere to the standards of responsive web design. Students will expand their knowledge of HTML and CSS using a code editor, and they will both analyze existing websites and also construct an interactive website. May be repeated up to 6 credits. Restricted to Community Colleges campuses only. 
**Prerequisite(s):** FDMA 1360.

**Learning Outcomes**
1. Plan and produce web design mockups.
2. Demonstrate a proficiency in HTML/CSS coding.
3. Utilize basic web scripts.
4. Integrate animation into web design.
5. Create fully functional websites using one or more web editors.
6. Make a website “live.”
7. Evaluate web designs for aesthetics and functionality.
8. Demonstrate the utilization of responsive design.

FDMA 2365. Web Design for Small Business
3 Credits (2+2P)
Technology and techniques for designing and building a web presence for small business. May be repeated up to 6 credits. Restricted to Community Colleges campuses only. 
**Prerequisite(s):** FDMA 1360.

**Learning Outcomes**
1. Learning advanced tools and techniques for creating and maintaining complex Business web sites. We will be using CSS, PHP, HTML, Photoshop, and Wordpress.
2. design a complete and fully functional online web business.
3. understand and develop a plan to better manage a web store/business.
4. review basic design guidelines in preparing a variety of web applications for business.
5. develop technical skills in using various web based solutions.
6. reinforce your knowledge of web design software.
7. introduce alternate sources of data, communication and financial solutions.

FDMA 2370. Advanced Web Techniques
3 Credits (2+2P)
Creating and managing complex web sites using advanced techniques and tools. May be repeated for a maximum of 6 credits. Restricted to: Community Colleges only.
**Prerequisite(s):** FDMA 1515 and FDMA 2360.

**Learning Outcomes**
1. Create webpages using Hypertext Markup Language (HTML) elements and tags
2. Format webpages using Cascading Style Sheets (CSS)
3. Validate webpage code
4. Apply industry-standard webpage design and organization principles
5. Publish a website

FDMA 2381. Storyboarding
3 Credits (3)
Examines effective writing principles to create storyboards that communicate the overall picture of a project, timing, scene complexity, emotion and resource requirements. Further, the purpose of this course is to introduce students to the principles of visual storytelling—in film—through the use of the storyboard. In other words, to show how storyboards are critical “architectural component” of the filmmaking process, used as a blueprint (or guide) to communicate the complex elements of a film story. Crosslisted with: ENGL 2381. Restricted to: DFM, ANVE, G-CMI majors. Restricted to Las Cruces campus only.

**Learning Outcomes**
1. Learn to conceive and draw original images.
2. Learn to use images to tell a story.
3. Design, develop, and order images (shots) into storyboarded scenes.
4. Understand how storyboarded sequences are a tool in the process of filmmaking.
5. Understand how the storyboard image is translated from the written page.
6. Build scenes from the scripted sequences into a storyboard.

FDMA 2382. Principles of Story Across the Media
3 Credits (3)
The purpose of this course is to help students understand the basic elements of narrative structure (e.g. character, dramatic conflict, theme, etc.) and how these elements may be used effectively in media expression. Crosslisted with: ENGL 2382. Restricted to: G-CMI, DFM, ANVE majors. Restricted to Las Cruces campus only.

**Learning Outcomes**
1. Identify the elements of storytelling in scripted text or improvised performance
2. Understand how these elements work together across different media
3. Apply these elements of storytelling in original work
4. Appreciate and master these elements for independent or collaborative work

FDMA 2410. Audio Production II
3 Credits (2+2P)
Students will use skills developed in the Audio Production I course to produce audio projects utilizing a variety of analog and digital audio hardware and software, including continued use of multi-track, computer-based recording and editing systems, as well as exploring more advanced audio techniques and concepts. Restricted to: Community Colleges only.

**Learning Outcomes**
1. Apply analog and digital audio hardware and software in audio recording.
2. Apply common professional set-up practices of audio production facilities.
3. Produce audio projects, sync sound recordings, and audio dialogue replacement (ADR) demonstrating technical expertise.
4. Perform an audio mix and master for a final professional product.
5. Analyze and compare existing audio productions for quality.
FDMA 2510. Introduction to Sound Design for Film
3 Credits (3)
This course is an introduction to the principles, techniques and applications of sound design and film scoring. Students learn how sound affects storytelling in a film, examine the role of sound from the script to screen, and the professional process of creating a soundtrack. Students learn how to use sound equipment in a production environment and execute basic techniques used to develop a soundtrack. Crosslisted with: FDMA 1415.
Prerequisite(s)/Corequisite(s): FDMA 2382. Restricted to: DFM,ANVE majors. Restricted to Las Cruces campus only.
Learning Outcomes
1. Compare the properties and propagation of sound and importance of sound to the storytelling aspect of filmmaking
2. Learn the process of designing a soundtrack for film and recording live audio dialogue for use in post-production editing
3. Learn methods of capturing sound including live audio recording, dialogue recording, foley, orchestration and audio dialogue replacement
4. Design a soundtrack for motion media project.

FDMA 2520. Introduction to Cinematography
3 Credits (3)
The Director of Photography (or Cinematographer), in close collaboration with the Director and Production Designer, helps determine the look of a film. This course is designed to introduce students to the technical and aesthetic fundamentals of creating, developing, and collaborating on the visual elements of storytelling, using camera framing, lensing, and lighting fundamentals such as shadows, light and color. May be repeated up to 6 credits. only. Prerequisite(s)/Corequisite(s): FDMA 2382 (Las Cruces Campus) or FDMA 1210 (Community College Campus(es)
Learning Outcomes
1. Define and explain the fundamental concepts of cinematography, such as exposure, lighting solutions, and color temperature
2. Understand how cinematography brings the Director's vision to reality
3. Demonstrate proficiency in plotting and executing interior and exterior lighting solutions.

FDMA 2530. Introduction to 3D Modeling
3 Credits (3)
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. May be repeated for a maximum of 6 credits.
Learning Outcomes
1. Identify the role of a 3D modeler in a production pipeline within various fields of digital animation
2. Apply techniques in modeling mechanical and organic objects
3. Utilize tools available in professional 3D modeling software
4. Create simple animations and renders
5. Present original animations to instructor and classmates for critique
6. Create a demo reel of work completed during the course.

FDMA 2535. Digital Illustration
3 Credits (3)
Introductory course examining traditional artistic expressions and translating visual art experiences into a digital art medium to enhance visual storytelling. Students acquire basic principles of drawing and painting through hands-on experience manipulating tonal value, composition, form development, light and shadow, color theory, rendering realism, and graphic design. Restricted to: DFM,ANVE majors. Restricted to Las Cruces campus only.
Learning Outcomes
1. Be familiar with the CMI computer system, facilities, equipment and policies
2. Appropriately utilize the various media technologies available at CMI for digital illustration
3. Understand the different roles and areas of digital illustration
4. Understand and apply some basic techniques of digital illustration
5. Understand and apply some basic processes of creating pleasing images based on knowledge of traditional art principles
6. Begin to apply some basic strategies for developing and creating aesthetically pleasing images.

FDMA 2570. Creative Media Studio
3 Credits (2+2P)
A studio environment where students specialize in creating film-festival quality and portfolio-ready projects under the supervision of faculty. May be repeated for a maximum of 6 credits.
Prerequisite(s): FDMA 1210 and FDMA 1220 or FDMA 2530.
Learning Outcomes
1. Students will work together to create portfolio-quality work in a studio environment
2. Through classroom discussion and reporting the students will collaborate to produce a professional quality "vertical slice" game concept within a defined timeline and financial budget

FDMA 2575. Digital Illustration
3 Credits (3)
Introductory course examining traditional artistic expressions and translating visual art experiences into a digital art medium to enhance visual storytelling. Students acquire basic principles of drawing and painting through hands-on experience manipulating tonal value, composition, form development, light and shadow, color theory, rendering realism, and graphic design. Restricted to: DFM,ANVE majors. Restricted to Las Cruces campus only.
Learning Outcomes
1. Be familiar with the CMI computer system, facilities, equipment and policies
2. Appropriately utilize the various media technologies available at CMI for digital illustration
3. Understand the different roles and areas of digital illustration
4. Understand and apply some basic techniques of digital illustration
5. Understand and apply some basic processes of creating pleasing images based on knowledge of traditional art principles
6. Begin to apply some basic strategies for developing and creating aesthetically pleasing images.

FDMA 2715. Special Effects
3 Credits (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(s): FDMA 2530 or FDMA 2765.
FDMA 2720. 3-D Animation
3 Credits (3)
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): FDMA 1510, FDMA 2710 or consent of instructor.
Learning Outcomes
1. Clearly describe the role of an animator in cinema, gaming and related fields.
2. Recognize leading animators and their methods.
3. Demonstrate knowledge of advances in contemporary animation.
4. Utilize current industry standard animation tools.
5. Apply fundamental animation processes and techniques

FDMA 2725. Rigging for 3D Animation
3 Credits (3)
This course will introduce principles and practices of current 3D animation rigging. 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, body and facial rigging. Restricted to: DFM, ANVE majors.
Prerequisite(s): FDMA 1510.
Learning Outcomes
1. Understand what Rigging is and the role it plays in the world of cinema and video games.
2. Be familiar with industry professionals and their techniques and approaches to rigging.
3. Understand and be able to apply the fundamentals of rigging to industry standard applications.
4. Demonstrate ability to rig basic to intermediate machines, bipeds and quadrupeds

FDMA 2730. Advanced Character Animation
3 Credits (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. Restricted to: Community Colleges only.
Prerequisite(s): FDMA 2530.
Learning Outcomes
1. Create skeletal riggings for use with a 3D model
2. Attach riggings to a 3D model using Smooth and rigid binding and refine the bindings so that they are properly weighted
3. Animate a 3D model using skeletal and vertex animation techniques

FDMA 2735. Advanced 3D Animation Workshop A
3 Credits (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. May be repeated for a maximum of 9 credits. Consent of instructor required.
Corequisite(s): FDMA 2740.
Learning Outcomes
1. Define the duties and skills sets required for a career in 3D Modeling.
2. Understand the Maya interface, the uses for all of the major modes and menus of the interface and be able to describe how to access the tools, actions and the options of those tools and actions.
3. Complete and compile a multi shot animated short.

FDMA 2740. Advanced 3D Animation Workshop B
3 Credits (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. May be repeated for a maximum of 9 credits. Consent of instructor is required.
Corequisite(s): FDMA 2735.
Learning Outcomes
1. Define the duties and skills sets required for a career in 3D Modeling.
2. Understand the Maya interface, the uses for all of the major modes and menus of the interface and be able to describe how to access the tools, actions and the options of those tools and actions.
3. Complete and compile a multi shot animated short.

FDMA 2745. Light, Shade, Render
3 Credits (3)
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. Restricted to: DFM, ANVE majors. Restricted to Las Cruces campus only.
Prerequisite(s): FDMA 1510, FDMA 2530, or Consent of Instructor.
Learning Outcomes
1. Understand the role of lighting and surfacing to tell a story.
2. Be familiar with leading lighting artist and their approaches.
3. Utilize the software implemented in the entertainment industry.
4. Understand and apply fundamental lighting and rendering techniques.
5. Demonstrate ability to create successfully rendered scenes from concept through production.
FDMA 2750. Digital Sculpting
3 Credits (3)
Introduce students to the 3D Sculpting programs which are the industry standard sculpting programs. Students will learn how to create complex high polygon sculpts and normal maps and transfer the models into 3D studio Max and Autodesk Maya. May be repeated up to 6 credits. Restricted to: Community Colleges only.
Prerequisite(s): FDMA 2530.
Learning Outcomes
1. Demonstrate communication skills through written critiques and explanations
2. Students will demonstrate visual communication skills through critiques, written explanations, and storyboarding
3. Demonstrate a working knowledge of Zbrush's interface
4. Demonstrate a working knowledge of Zpheres and how they are best used to create sculpts
5. Demonstrate a working knowledge of painting a mesh using Spotlight
6. Demonstrate a working knowledge of retopologizing and exporting the mesh
7. Demonstrate a working knowledge of integrating the full Zbrush pipeline into Unity and Unreal

FDMA 2755. Drawing for Animation
3 Credits (3)
Introductory study of the human and animal form in relation to animation. Students learn fundamentals and exaggeration of the figure, as related to proportion, rhythm, mechanics, and motion. Areas of focus are: basic form, proportion, shape, contour, gesture, anatomy, portraiture, perspective, clothing effects and drawing from observation. Restricted to: CMT, DFM, ANVE majors.
Learning Outcomes
1. Students will have an opportunity to gain hands on experience using industry standard state of the art animation software.
2. Understand what the basics of drawing the human form.
3. Be able to design the human form from imagination.

FDMA 2993. Workshops (Advanced Photography)
1 Credit (1)
This is a series of 1-credit workshops offering specialized and intense advanced skill training and upgrading applications of photography for commercial purposes and training in photographic skills and styles presented by a variety of professional lecturers. May be repeated up to 7 credits. Restricted to Community Colleges only.
Prerequisite(s): FDMA 1545.
Learning Outcomes
1. Varies
FDMA 2998. Internship
1-3 Credits
Work experience that directly relates to a student’s major field of study that provides the student an opportunity to explore career paths and apply knowledge and theory learned in the classroom. Internships may be paid or unpaid. Students are supervised/evaluated by both the employer and the instructor. May be repeated up to 9 credits. Consent of Instructor required. Graded: S/U Grading (S/U, Audit). Restricted to Community Colleges campuses only. Consent of instructor required.

Learning Outcomes
1. Varies

Program Manager: Sarah Johnson
Phone: (505) 287-6656
Email: sjohns10@nmsu.edu
Office: McClure Hall, Room 301

Creative Media Design - Associate of Applied Science

60 credits

The Associate of Applied Science in Creative Media prepares students for entry-level work in the media industry. Skills include both above and below the line concepts including working with audio and video equipment, editing, acting, directing, and writing. Students also build skills in communications, project management and computers that are transferable to other media related jobs including education, television and gaming.

Students must complete all University degree requirements, which include: General Education requirements and elective credits to total at least 60-61 credits. Developmental coursework will not count towards the degree requirements and/or elective credits, but may be needed in order to take the necessary English and Mathematics coursework.

 Prefix | Title | Credits
---|---|---
**General Education** | Select one course from four of the following six content areas for a total of 12-14 credits. | 12-14
Area I: Communications | ENGL 1110G Composition I | 1, 2
Area II: Mathematics | | |
Area III: Laboratory Sciences | | |
Area IV: Social/Behavioral Sciences | PSYC 1110G Introduction to Psychology | 1, 2
or SOCI 1110G Introduction to Sociology | 1, 2
Area V: Humanities | | |
Area VI: Creative and Fine Arts | | |
General Education Elective | ENGL 2210G Professional & Technical Communication | 3

FDMA 1515 Introduction to Digital Image Editing - Photoshop 3
FDMA 1535 Introduction to Illustrator 3
FDMA 1630 Principles of Design 3
FDMA 1710 2D Animation 3
FDMA 2360 Web Design II 3
FDMA 2994 Portfolio Design & Development 3

Other Course Requirements
OECS 105 Introduction to Information Technology 3
Electives, to bring the total credits to 60 1 3 11 Select courses from the following prefixes: ARTS/ C S/FDMA/ OECS

Total Credits 60-61

1. Each course selected must be from a different area and students cannot take multiple courses in the same area.
2. See the General Education section of the catalog for a full list of courses.
3. Elective credit may vary based on prerequisites, dual credit, AP credit, and/or certificate coursework. The amount indicated in the requirements list is the amount needed to bring the total to 60 credits and may appear in variable form based on the degree. However students may end up needing to complete more or less on a case-by-case basis and students should discuss elective requirements with their advisor.

A Suggested Plan of Study

Additional classes may be needed based on placement test results and course prerequisites. Visit with an advisor for help with creating a customized plan.

**First Year**

**Fall**

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>O ECS 105</td>
<td>Introduction to Information Technology</td>
<td>3</td>
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<tr>
<td>FDMA 1360</td>
<td>Web Design I</td>
<td>3</td>
</tr>
<tr>
<td>FDMA 1535</td>
<td>Introduction to Illustrator</td>
<td>3</td>
</tr>
<tr>
<td>FDMA 1515</td>
<td>Introduction to Digital Image Editing - Photoshop</td>
<td>3</td>
</tr>
<tr>
<td>FDMA Elective - any FDMA course not in degree</td>
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<td>3</td>
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<tr>
<td><strong>Credits</strong></td>
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**Spring**

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<tr>
<th>Prefix</th>
<th>Title</th>
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<tbody>
<tr>
<td>FDMA 1630</td>
<td>Principles of Design</td>
<td>3</td>
</tr>
<tr>
<td>FDMA 2360</td>
<td>Web Design II</td>
<td>3</td>
</tr>
<tr>
<td>FDMA 2994</td>
<td>Portfolio Design &amp; Development</td>
<td>3</td>
</tr>
<tr>
<td>FDMA Elective - Any FDMA course not in degree</td>
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<td>5</td>
</tr>
<tr>
<td>If all courses are completed, apply for the Certificate in Web Fundamentals</td>
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<td><strong>Credits</strong></td>
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**Second Year**

**Fall**

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<thead>
<tr>
<th>Prefix</th>
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<tr>
<td>ENGL 1110G</td>
<td>Composition I</td>
<td>4</td>
</tr>
<tr>
<td>GEN Ed Course - One course from Areas II, III, V, or VI 1, 2</td>
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<td>3-4</td>
</tr>
<tr>
<td>GEN Ed Course - One course from Areas II, III, V, or VI 1, 2</td>
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<td>3-4</td>
</tr>
<tr>
<td>FDMA 1510</td>
<td>Introduction to 3D Animation</td>
<td>3</td>
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<tr>
<td>FDMA 1120</td>
<td>Desktop Publishing</td>
<td>3</td>
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<tr>
<td><strong>Credits</strong></td>
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<td><strong>16-18</strong></td>
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**Spring**

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<tr>
<th>Prefix</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ENGL 2210G</td>
<td>Professional &amp; Technical Communication</td>
<td>3</td>
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</tbody>
</table>
PSYC 1110G or SOCI 1110G
Introduction to Psychology
or Introduction to Sociology
3
FDMA 1710
2D Animation
3
FDMA 1210
Digital Video Production I
3
Any ARTS elective
Design degree
3

If all courses are completed, apply for the AAS in Creative Media Design degree

Credits
15
Total Credits
60-62

Program Manager: Sarah Johnson
Phone: (505) 287-6656
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Office: McClure Hall, Room 301

Criminal Justice

Criminal Justice - Associate Degree (p. 101)

CJUS 1110G. Introduction to Criminal Justice
3 Credits (3)
This course provides an overall exploration of the historical development and structure of the United States criminal justice system, with emphasis on how the varied components of the justice system intertwine to protect and preserve individual rights. The course covers critical analysis of criminal justice processes and the ethical, legal, and political factors affecting the exercise of discretion by criminal justice professionals.

Learning Outcomes
1. Describe the history, structure and function of the criminal justice system in the United States.
2. Discuss the role of law enforcement, court systems, corrections, and security in maintaining social order.
3. Identify and describe crime causation theories, various measures of crime and their reliability and victimization theories.
4. Relate fundamental principles, concepts and terminology used in criminal justice to current events.
5. Apply basic analytical and critical thinking skills in evaluating criminal justice issues, policies, trends and disparities.

CJUS 1120. Criminal Law
3 Credits (3)
This course covers basic principles of substantive criminal law including elements of crimes against persons, property, public order, public morality, defenses to crimes, and parties to crime. May be repeated up to 3 credits.

Learning Outcomes
1. Explain the concepts of substantive criminal liability in the United States, including actus reas, mens rea, causation, concurrence, and parties to crime.
2. Define the differences between criminal law and civil law in the United States.
3. Demonstrate basic knowledge of legal terminology as it relates to criminal law.
4. Identify the elements of crimes against persons, property, public order and the administration of justice, public morality, and the inchoate crimes.
5. Describe the various defenses to crimes.

CJUS 1996. Special Topics in Criminal Justice
1-3 Credits
Specific subjects to be announced in the Schedule of Classes. May be repeated under different topics for a maximum of 6 credits.

Learning Outcomes
1. Varies

CJUS 2120. Criminal Courts and Procedure
3 Credits (3)
This course covers the structures and functions of American trial and appellate courts, including the roles of attorneys, judges, and other court personnel, the formal and informal process of applying constitutional law, rules of evidence, case law and an understanding of the logic used by the courts.

Learning Outcomes
1. Explain the application of the Constitutional Amendments that apply to criminal justice.
2. Explain and describe the dual court system in the U.S. and how courts enforce the rule of law.
3. Identify and list the duties and requirements of the courtroom workgroup.
4. Describe courtroom procedures, rules of the court, and due process of law.
5. Articulate basic knowledge of the U.S. criminal court system.
6. Define legal terms.
7. Explain the use of discretion in criminal procedure.
8. Differentiate the role of courts of limited jurisdiction, courts of general jurisdiction, and the appellate courts in the processing of criminal cases.

CJUS 2140. Criminal Investigations
3 Credits (3)
This course introduces criminal investigations with in the various local, state, and federal law enforcement agencies. Emphasis is given to the theory, techniques, aids, technology, collection, and preservation procedures which insure the evidentiary integrity. Courtroom evidentiary procedures and techniques will be introduced. Community Colleges only. (Note: students completing CJUS 2140 may not take CJUS 321.)

Learning Outcomes
1. Identify developments in investigation technology.
2. Identify common types of criminal investigations and their key components.
3. Apply proper crime scene investigative protocols.
4. Explain proper evidentiary gathering and handing procedures, and utilize various interviewing techniques.
5. Identify and compare different law enforcement agencies and the role they play in criminal investigations.
6. Describe proper collection, evidence preservation, documentation, and court presentation.
7. Develop effective search authorization.
CJUS 2150. Corrections System
3 Credits (3)
This course introduces the corrections system in the United States, including the processing of an offender in the system and the responsibilities and duties of correctional professionals. The course covers the historical development, theory, and practice, as well as the institutional and community-based alternatives available in the corrections process.

Learning Outcomes
1. Describe the purposes of the corrections system and the issues facing the corrections system.
2. Explain the components of the corrections system and describe their functions.
3. Compare and contrast the different forms of correction practices.
4. Explain the goals of corrections, the different factors affecting the sentencing process, the legal rights of prisoners, and the issues concerning prison violence.
5. Explain the impact of reentry into society.
6. Identify the issues concerning capital punishment.
7. Describe the effectiveness of various correction programs on offenders.

CJUS 2160. Field Experience in Criminal Justice
3-6 Credits
This course is designed to provide actual experience working for a criminal justice agency and the opportunity to apply criminal justice concepts and theory to a field situation. Students already working in an agency will complete an approved learning project while on the job.

Prerequisites: CJUS 1110G, prior arrangement and consent of instructor and a GPA of 2.0 or better in major.

Learning Outcomes
1. Obtain practical experience by observing, researching, and working in a criminal justice agency.
2. Apply the knowledge of principles, theories, and methods that were learned in the classroom to situation in which field experience will be devoted
3. Instill an understanding for general and specific problems that criminal justice agencies encounter on a daily basis.
4. Develop a professional work ethic and attitudes, including reliability, professional responsibility, and the ability to work cooperatively with others.

CJUS 2220. The American Law Enforcement System
3 Credits (3)
This course covers the historical and philosophical foundations of law and order, with an in-depth examination of the various local, state, ad federal law enforcement agencies and how they interact within the criminal justice system.

Learning Outcomes
1. Discuss, evaluate, and analyze the role of police in the democratic society today, and the historical development of modern day law enforcement
2. Define and explain the different types of community policing and the valid reasons behind their application within a community
3. List and discuss the ways to overcome the barriers to change within a police organization, good recruitment, screening, and retention of employees
4. Analyze and discuss the history of and the different types of police patrol, as well as the use of force and deadly force, and methods used for controlling police behavior
5. Describe and discuss the different types of police behavior, potential oversight, and remedy and their limitations
6. List and discuss the benefits of higher and continued education, along with the minimum educational requirements for police officers
7. Evaluate and discuss the reasons for police stress and the methods of dealing with stressors
8. Interpret current court cases, both state and federal, that affect police procedures

Program Manager: Megan Stoneking
Phone: (505) 287-6679
Email: stmegang@nmsu.edu
Office: Room 113D, Martinez Hall, 2nd Floor

Criminal Justice - Associate in Criminal Justice
60 credits

The Associate in Criminal Justice introduces students to three areas of the Criminal Justice system: police, courts, and corrections. This degree is interdisciplinary in nature. Studies include the humanities, law, natural, behavioral and social sciences. The curriculum seeks to balance theoretical inquiry with applied knowledge.

This Associate degree satisfies the first two years of the Distance Education Bachelor of Criminal Justice.

Students must complete all University degree requirements, which include: General Education requirements and elective credits to total at least 60 credits. Developmental coursework will not count towards the degree requirements and/or elective credits, but may be needed in order to take the necessary English and Mathematics coursework.

The New Mexico General Education course list can be found here.

<table>
<thead>
<tr>
<th>Prefix</th>
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<tbody>
<tr>
<td>ENGL 1110G</td>
<td>Composition I</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 1110G</td>
<td>Composition II</td>
<td>3</td>
</tr>
</tbody>
</table>

Prefix | Title | Credits |
--------|-------|---------|
General Education | | |
Area I: Communications | | |
English Composition - Level 1 | | |
ENGL 1110G | Composition I | 4 |
English Composition - Level 2 | | |
Select one from the following: | | 3 |
**General Education Elective**

Choose one from the following:

- **Area VI: Creative and Fine Arts**
  - MATH 1220G College Algebra
tor MATH 1350G Introduction to Statistics

- **Area V: Humanities**
  - ASTR 1115G Introduction to Astronomy (lec+lab)
to ASTR 2110G The Planets
  - ENGL 2210G Course in English

- **Area III/IV: Laboratory Science and Social/Behavioral Sciences**
  - BIOL 2610G Principles of Biology: Biodiversity, Ecology, and Evolution
  - BIOL 2610L Principles of Biology: Biodiversity, Ecology, and Evolution Laboratory
  - BIOL 1120G Human Biology

Select one from the following:

- **Area II: Mathematics**
  - MATH 1220G College Algebra
  - or MATH 1350G Introduction to Statistics

- **Area III: Laboratory Science Course (4 credits):**
  - PHYS 1115G Survey of Physics with Lab

Two Area IV: Social/Behavioral Sciences Courses (6 credits)

- ANTH 1115G Introduction to Anthropology
- CHEP 1120G Human Growth and Behavior
- ENVS 1110G Environmental Science I
- GEOG 1110G Physical Geography
- PHYS 1115G Survey of Physics with Lab
- Two Area IV: Social/Behavioral Sciences Courses (6 credits)

- ANTH 1115G Introduction to Anthropology
- CHEP 1120G Human Growth and Behavior
- ENVS 1110G Environmental Science I
- GEOG 1110G Physical Geography
- PHYS 1115G Survey of Physics with Lab

- **Area V: Humanities**
  - ARTH 1115G Orientation in Art
  - ENGL 1110G Introduction to English

Area VI: Creative and Fine Arts

Choose one from the following:

- **Area VI: Creative and Fine Arts**
  - MATH 1220G College Algebra
  - or MATH 1350G Introduction to Statistics

- **Area V: Humanities**
  - ASTR 1115G Introduction to Astronomy (lec+lab)
to ASTR 2110G The Planets
  - ENGL 2210G Course in English

- **Area III/IV: Laboratory Science and Social/Behavioral Sciences**
  - BIOL 2610G Principles of Biology: Biodiversity, Ecology, and Evolution
  - BIOL 2610L Principles of Biology: Biodiversity, Ecology, and Evolution Laboratory
  - BIOL 1120G Human Biology

Select one from the following:

- **Area II: Mathematics**
  - MATH 1220G College Algebra
  - or MATH 1350G Introduction to Statistics

- **Area III: Laboratory Science Course (4 credits):**
  - PHYS 1115G Survey of Physics with Lab

Two Area IV: Social/Behavioral Sciences Courses (6 credits)

- ANTH 1115G Introduction to Anthropology
- CHEP 1120G Human Growth and Behavior
- ENVS 1110G Environmental Science I
- GEOG 1110G Physical Geography
- PHYS 1115G Survey of Physics with Lab

- **Area V: Humanities**
  - ARTH 1115G Orientation in Art
  - ENGL 1110G Introduction to English

**Second Language Requirements**

The College of Arts & Sciences requires completion of a second language through the 2120 level for the Bachelor of Criminal Justice degree. See the NMSU Catalog for College of Arts and Sciences for additional information on how to satisfy this requirement.

**A Suggested Plan of Study**

This roadmap assumes student placement into ENGL 1110G Composition I and a College level MATH, such as MATH 1220G, College Algebra, and demonstrates how to complete an Associate degree in two years. The contents and order of this roadmap may vary depending on initial student placement in mathematics and English. It is only a suggested plan of study for students and is not intended as a contract. Course availability may vary from fall to spring semester and may be subject to modification or change. Students are advised to earn a C or better in courses to avoid repeating courses.

**Note:** A grade of C- or better is required in all Criminal Justice courses and any courses filling the Arts & Sciences Core Requirements.

1 MATH 1220G College Algebra is also required and will count towards both the General Education and Core Requirements.

2 Students must need to take any prerequisites needed to enter of the allowable Mathematics course(s) first.

3 For those planning to complete the Bachelor of Criminal Justice through NMSU Las Cruces, the Criminal Justice Department prefers a Philosophy course to satisfy the Humanities course.

4 CJUS 1110G Introduction to Criminal Justice is a General Education Social/Behavioral Science course; it will count under the CJ Core Requirements, but not as completing Area IV.
**Drafting and Graphics Technology**

| Program Manager: Megan Stoneking |
| Phone: (505) 287-6679 |
| Email: stmegan@nmsu.edu |
| Office: Room 113D, Martinez Hall, 2nd Floor |

**DRFT 100. Introduction to Architecture, Engineering, & Construction**
3 Credits (3)

Introduction to and exploration of careers in the fields of architecture, engineering, and construction. Specific fields to include: architecture, civil engineering, mechanical engineering, structural engineering, engineering technology, residential construction, commercial construction, geographical information systems (GIS), surveying, sustainable design, and green building. Crosslisted with: ARCH 1310. Restricted to Community Colleges campuses

**Learning Outcomes**
1. Prepare accurate written technical documents, Produce drawing documents that are technically sound, Develop and practice productive work skills, and Upgrade technical knowledge and skills to keep pace with real-world changes

**DRFT 101. Introduction to Drafting and Design Technologies**
1 Credit (1)

Professional and student organizations associated with the Drafting and Design Technologies program, degree requirements, employment skills and work habits, and university and college policies and procedures will be explored. Students will be introduced to the current learning management system and career-readiness certification. Restricted to Community Colleges only.

**DRFT 105. Technical Drawing for Industry**
3 Credits (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 Credits (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 Credits (2+2P)

Introduction to principles and fundamentals of drafting using both manual drawing techniques and computer-aided drafting (CAD) applications. May be repeated up to 3 credits. Crosslisted with: E T 109 and C E 109. Restricted to Community Colleges campuses only.

**Prerequisites:** OECS 207, OECS 125 or consent of instructor.

**DRFT 112. Drafting Concepts/Computer Drafting Fundamentals I**
4 Credits (2+4P)

Basic drafting skills, terminology, and visualization. Introduction to principles and fundamentals of computer-aided drafting. Same as E T 106.

**Prerequisites:** OECS 207, OECS 125 or consent of instructor.

**DRFT 113. Drafting Concepts/Computer Drafting Fundamentals II**
4 Credits (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. Same as E T 216. Restricted to: Community Colleges only.

**Prerequisite:** DRFT 112.
DRFT 114. Introduction to Solid Modeling  
3 Credits (2+2P)  
2D mechanical drafting and 3D mechanical solid modeling utilizing the latest version of AutoCAD software. Industry dimensioning and annotation standards will be emphasized. 2D multi-view working drawings, 3D solid models, and basic 3D model assemblies will be introduced. Restricted to Community Colleges campuses only.  
Prerequisite(s): DRFT 109.

DRFT 115. General Construction Safety  
3 Credits (3)  
Overview of general construction safety related to building, highway and road construction, and surveying field work for entry-level individuals. Students will also have the opportunity to earn a 10-hour construction industry OSHA card. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.

DRFT 124. Introduction to Geometric Dimensioning and Tolerancing  
3 Credits (2+2P)  
Introduction to geometric dimensioning and tolerancing (GD&T) for the mechanical CAD drafting, solid modeling, mechanical engineering technology, mechanical engineering, and manufacturing industries. Related industry standard finishes and fasteners will also be introduced and explored.  
Prerequisite(s)/Corequisite(s): DRFT 114. Restricted to Community Colleges campuses only.

DRFT 130. General Building Codes  
3 Credits (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 Colleges campuses only.

DRFT 135. Electronics Drafting I  
3 Credits (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 Credits (2+2P)  
Introduction to drafting in the field of Civil Engineering. Drawings, projects, and terminologies related to topographic, contour drawings, plan and profiles, and street/highway layout. Crosslisted with: E T 143. Restricted to Community Colleges campuses only.

DRFT 151. Construction Principles and Print Reading  
3 Credits (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 Credits (2+2P)  
Introduction to drafting in the field of survey engineering. Drawings, projects and terminologies related to Point Data, topography, land/boundary surveys, legal descriptions and plat surveys. Using the current Autodesk software. Crosslisted with: SUR 143. Restricted to Community Colleges campuses only.

Prerequisite(s): DRFT 109.

DRFT 160. Construction Take-Offs and Estimating  
3 Credits (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 163. Civil Infrastructure Detailing  
3 Credits (2+2P)  
Infrastructure detailing related to civil engineering projects including: ponding, roadway, sewer, and storm-water structures; concrete foundations; and related utility details. Restricted to Community Colleges campuses

Prerequisite(s): DRFT 109.

Learning Outcomes
1. Prepare accurate written technical documents, Produce drawing documents that are technically sound, Develop and practice productive work skills, and Upgrade technical knowledge and skills to keep pace with real-world changes DRFT 163 Course Competencies  
I. Create applicable details utilizing AutoCAD and other software packages, Interpret local design standards, applicable codes, and industry practices, Apply local design standards, Apply applicable codes, Follow standards industry practices, Design applicable details within given parameters, and Develop good workplace skills and professional, productive work habits.

DRFT 164. Intermediate Mechanical Drafting/Solid Modeling  
3 Credits (2+2P)  
Intermediate 3D mechanical parametric solid modeling and assembly creation utilizing the latest version of Autodesk Inventor software. The creation of 2D working drawings from 3D solid models will be emphasized. Geometric Dimensioning and Tolerancing (GD&T), basic material properties, and industry standard fastening and manufacturing methods will be introduced.  
Prerequisite(s)/Corequisite(s): DRFT 114. Restricted to Community Colleges campuses only.

DRFT 165. Introduction to Building Information Modeling  
3 Credits (2+2P)  
Introduction to Building Information Modeling (BIM) in the development of virtual 3D building models, construction documents, renderings and basic animations related to architectural, structural, and mechanical/electrical/plumbing building components. Utilizes the latest BIM technologies in the integration one, parametric BIM. Restricted to Community Colleges campuses only.

DRFT 180. Residential Drafting  
3 Credits (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. Restricted to Community Colleges campuses only.

Prerequisite(s): DRFT 109.
DRFT 181. Commercial Drafting
3 Credits (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. May be repeated up to 3 credits. Restricted to Community Colleges campuses
Prerequisite(s): DRFT 109.

DRFT 190. Finding and Maintaining Employment
2 Credits (2)
Techniques in self-evaluations, resume writing, application completion, job interviewing, and job retention. Exposure to work ethics, employee attitudes, and employer expectations.

DRFT 204. Geographic Information Systems Technology
3 Credits (2+2P)
The use of digital information for which various digitized data creation methods are captured. Users will capture, store, analyze and manage spatially referenced data in a modeled mapping procedure. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.

DRFT 214. Advanced Solid Modeling
3 Credits (2+2P)
Advanced 3D mechanical parametric solid modeling and assembly creation utilizing the latest version of Solidworks software. The creation of 2D working drawings from 3D solid models and the creation of 3D models for machining/manufacturing will be emphasized. Geometric Dimensioning and Tolerancing (GD&T), material properties, and industry standard fastening and manufacturing methods will be further explored.
Prerequisite(s)/Corequisite(s): DRFT 114. Restricted to Community Colleges campuses only.

DRFT 222. Introduction to Geomatics
3 Credits (2+3P)
Theory and practice of geomatics as applied to plane surveying in the areas of linear measurements, angle measurements, area determination, differential and trigonometric leveling, and topographic mapping. Crosslisted with: SUR 222.
Prerequisite: MATH 1250G or MATH 1430G.
Learning Outcomes
1. Various

DRFT 230. Building Systems Drafting
3 Credits (2+2P)
Development of working drawings for electrical, plumbing, and HVAC systems, for residential and commercial building through the applications of both 2D Drafting and 3D Building Information Modeling (BIM) techniques. Basics of project setup, National CAD Standards, ADA Standards, modern office practice, code analysis, as well as Sustainability and LEED for new construction. Restricted to: Community Colleges only.
Prerequisite(s): DRFT 180 or DRFT 181.

DRFT 231. Construction Methods and Equipment
3 Credits (2+2P)
Introduction to methods and equipment utilized in the construction industry including, common construction equipment, equipment utilization, equipment operating costs, site and earthwork, applicable specifications and testing, and related planning and safety considerations. Restricted to Community Colleges campuses only.
Prerequisite(s): DRFT 151.

DRFT 240. Structural Systems Drafting
3 Credits (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. May be repeated up to 3 credits.
Prerequisite(s)/Corequisite(s): DRFT 180 or DRFT 181. Restricted to Community Colleges campuses only.

DRFT 242. Roadway Development Drafting
3 Credits (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 subdivision plats, local utility and drainage plans, construction details roadway, etc., according to local development/agency standards. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): DRFT 143.

DRFT 243. Land Development Drafting
3 Credits (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, etc., according to local development/agency standards.
Prerequisite: DRFT 143 and DRFT 153.

DRFT 250. Principles of Detailing and Design
3 Credits (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. May be repeated up to 3 credits.
Prerequisite(s)/Corequisite(s): DRFT 180 or DRFT 181. Restricted to Community Colleges campuses only.

DRFT 254. Spatial Data Processing
3 Credits (2+2P)
Utilizes the tools and technologies of GIS, processing volumes of geodata identifying a numerical, coded or listed map. Involves the analysis of spatial data from various and diverse applications and place in a descriptive mapping process. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): DRFT 204.

DRFT 255. Independent Study
1-3 Credits (1-3)
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 258. Introduction to Infraworks
3 Credits (2+2P)
Introduction to the utilization of Infraworks software for the conceptualization, optimization, and visualization of infrastructure projects in the context of the built and natural environment. Restricted to Community Colleges campuses
Prerequisite(s): DRFT 143.

Learning Outcomes
1. Prepare accurate written technical documents, Produce drawing documents that are technically sound, Develop and practice productive work skills, and Upgrade technical knowledge and skills to keep pace with real-world changes DRFT 253 Course Competencies I. Navigate within a 3D drawing/modeling space, Connect drawings to data sources, Stylize data sources, Create models elements, Analyze models, Collaborate on a project with others, Communicate design, and Develop good workplace skills and professional, productive work habits.

DRFT 261. Construction Scheduling and Project Management
3 Credits (2+2P)
Introduction to construction scheduling and project management. Restricted to Community Colleges campuses only.
Prerequisite(s): DRFT 161.

DRFT 265. Advanced Building Information Modeling Applications
3 Credits (2+2P)
Advanced applications of Building Information Modeling (BIM) including the creation of, and practice in collaborative work sets, data and design analyses, energy modeling and analysis, preliminary LEED analysis, construction take-offs & estimation, and construction animation, through use of various BIM and related software. Restricted to: Community Colleges only.
Prerequisite(s): DRFT 165.

DRFT 274. GIS Theory and Analysis
3 Credits (2+2P)
Analyzes the hypothesis in which location and spatial data sufficiently quantifies the appropriate statistical methodology. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): DRFT 254.

DRFT 276. Computer Rendering and Animation I
3 Credits (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 278. Advanced CAD Applications
3 Credits (2+2P)
Introduction to advanced CAD commands, applications, usage techniques, and user customization. The latest version of the National CAD Standards will also be explored. Restricted to: Community Colleges only.
Prerequisite(s): DRFT 109.

DRFT 288. Portfolio Development
3 Credits (2+2P)
Production of a portfolio consisting of previously produced student work related to the student’s individualized degree option. Process shall include the compilation and organization of working and presentation drawings, construction documents, BIM Models, and renderings/animations. Students will learn the basics of design layout and online portfolio documentation. Job search and resume preparation activities will also be required. Production of new material and content may also be required. This course is designed as a last semester course in the Drafting & Design curricula. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): Consent of Instructor.

DRFT 290. Special Topics
1-4 Credits (1-4)
Topics subtitled in the Schedule of Classes. May be repeated for a maximum of 12 credits.

DRFT 291. Cooperative Experience
1-6 Credits (1-6)
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. Graded S/U.
Prerequisite: consent of instructor.

DRFT 295. Professional Development and Leadership DASA
1 Credit (1)
Students gain experience in leadership, team building, performing community service, and membership and/or leadership in a student organization. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.

Program Manager: Richard Gutierrez
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Drafting and Graphics Technology - Certificate of Completion

30 credits

This program provides students with the education and experience needed to pursue an entry-level drafting or computer graphics position. The program includes Architectural, Civil, Mechanical and Electronics Drafting. Classes developing 3-D animated graphics used by architects, designers for simulation, lawyers for accident reconstruction, executives for presentations, and business for training videos are included.

Prefix | Title | Credits
--- | --- | ---
DRFT 109 | Computer Drafting Fundamentals | 3
DRFT 114 | Introduction to Solid Modeling | 3
DRFT 135 | Electronics Drafting I | 3
DRFT 143 | Civil Drafting Fundamentals | 3
DRFT 151 | Construction Principles and Print Reading | 3
DRFT 176 | | 3
DRFT 180 | Residential Drafting | 3
DRFT 181 | Commercial Drafting | 3
DRFT 276 | Computer Rendering and Animation I | 3
ECED 1110. Child Growth, Development, and Learning  
3 Credits (3)  
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. The course includes knowledge of how young children grow, develop and learn. Major theories of child development are integrated with all domains of development, including biological-physical, social, cultural, emotional, cognitive and language. The adult's role in supporting each child's growth, development and learning is emphasized.  
Learning Outcomes  
1. Incorporate understanding of developmental stages, processes, and theories of growth, development, and learning into developmentally appropriate practice. A.1  
2. Demonstrate knowledge of the interaction between maturation and environmental factors that influence physical, social, emotional, cognitive, and cultural domains in the healthy development of each child. A.2  
3. Demonstrate knowledge of the significance of individual differences in development and learning.  
4. Demonstrate knowledge of how certain differences may be associated with rate of development and  
5. Developmental patterns associated with developmental delays and/or specific disabilities. A.3  
6. Demonstrate knowledge of the similarities between children who are developing typically and those with diverse abilities. A.4  
7. Demonstrate knowledge of the many functions that language serves in the cognitive, social, and emotional aspects of development in the formative years. A.7  
8. Demonstrate knowledge of the developmental sequence of language and literacy, including the  
9. Influence of culture and home factors. A.8  
10. Demonstrate knowledge of how children acquire and use verbal, non-verbal, and alternative means of communication. A.9  
11. Demonstrate knowledge of the relationship among emotions, behaviors, and communication skills to assist children in identifying and expressing their feelings in appropriate ways. A.10  
12. Use appropriate guidance to support the development of self-regulatory capacities in young children. A.11
ECED 1115. Health, Safety, and Nutrition
2 Credits (2)
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. It includes information for developing sound health and safety management procedures for indoor and outdoor learning environments for young children. The course examines the many scheduling factors that are important for children’s total development, healthy nutrition, physical activity, and rest.

Learning Outcomes
1. Recognize and respond to each child’s physical health, intellectual and emotional well-being, and nutritional and safety needs. B.1
2. Articulate an understanding of indoor and outdoor learning environments that provide opportunities for children to put into practice healthy behaviors (physically, socially and emotionally). B.2
3. Use appropriate health appraisal and management procedures and makes referrals when necessary. B.3
4. Recognize signs of emotional distress, child abuse, and neglect in young children and use procedures appropriate to the situation, such as initiating discussions with families, referring to appropriate professionals, and, in cases of suspected abuse or neglect, reporting to designated authorities. B.4
5. Establish an environment that provides opportunities and reinforcement for children’s practice of healthy behaviors that promote appropriate nutrition and physical and psychological well-being. B.5
6. Provide a consistent daily schedule for rest/sleep, as developmentally appropriate. B.6
7. Implement health care and educational activities for children and families based on health and nutritional information that is responsive to diverse cultures. B.7
8. Assist young children and their families, as individually appropriate, in developing decision-making and interpersonal skills that enable them to make healthy choices and establish health-promoting behaviors. B.8

ECED 1120. Guiding Young Children
3 Credits (3)
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. Emphasis is placed on helping children become self-responsible, competent, independent, and cooperative learners and including families as part of the guidance approach.

Learning Outcomes
1. Apply knowledge of cultural and linguistic diversity and the significance of socio-cultural and political contexts for development and learning and recognize that children are best understood in the contexts of family, culture and society. A.6
2. Demonstrate knowledge of the many functions that language serves in the cognitive, social, and emotional aspects of development in the formative years. A.7
3. Demonstrate knowledge of the relationship among emotions, behaviors, and communication skills to assist children in identifying and expressing their feelings in appropriate ways. A.10
4. Use appropriate guidance to support the development of self-regulatory capacities in young children. A.11
5. Demonstrate knowledge and skill in building positive, reciprocal relationships with families. C.1
6. Demonstrate knowledge and skill in building positive, reciprocal relationships with families. C.1
7. Demonstrate knowledge of and respect for variations across cultures, in terms of family strengths, expectations, values, and child-rearing practices. C.4
8. Demonstrate the ability to incorporate the families’ desires and goals for their children into classroom or intervention strategies. C.7
9. Demonstrate knowledge and skills in developmentally appropriate guidance techniques and strategies that provide opportunities to assist children in development positive thoughts and feelings about themselves and others through cooperative interaction with peers and adults. E.3
10. Demonstrate understanding of the influence of the physical setting, schedule, routines, and transitions on children and use these experiences to promote children’s development and learning. E.7
11. Demonstrate knowledge of assessment techniques, interpretation of assessment information in the application of this
ECED 1125. Assessment of Children and Evaluation of Programs
3 Credits (3)
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. The course addresses the development and use of formative and summative assessment and evaluation instruments to ensure comprehensive quality of the total environment for children, families, and the community. Students will develop skills for evaluating the assessment process and involving other teachers, professionals and families in the process.
Prerequisite(s): ECED 1110 and (ENGL 1110G or ENGL 1110H or ENGL 1110M).

Learning Outcomes
1. Demonstrate ability to choose valid tools that are developmentally, culturally, and linguistically appropriate; use the tools correctly, make appropriate referrals; and interpret assessment results, with the goal of obtaining valid, useful information to inform practice and decision making. F.1
2. Demonstrate knowledge of maintaining appropriate records of children’s development and behavior that safeguard confidentiality and privacy. F.2
3. Demonstrate knowledge of the educator’s role as a participating member of the assessment process as described and mandated by state and federal regulations for Individual family service plans (IFSP) and individual education plans (IEP). F.3
4. Demonstrate understanding of the influences of environmental factors, cultural/linguistic differences, and diverse ways of learning on assessment outcomes. F.4 Involve the family and, as appropriate, other team members in assessing the child’s development, strengths, and needs in order to set goals for the child. F.5 Articulate an understanding of the distinctions and definitions of assessment concepts (e.g., screening, diagnostic assessment, standardized, testing, accountability assessment). F.6
5. Apply understanding of assessment concepts toward selection of appropriate formal assessment measures, critiquing the limitations of inappropriate measures, and discussing assessment issues as part of interdisciplinary teams. F.7
6. Articulate an understanding that responsible assessment is legally and ethically grounded and guided by sound professional. It standards is collaborative and open with the goal of supporting diverse children and families. F.8
7. Demonstrate knowledge of assessment techniques, interpretation of assessment information in the Application of this data to curriculum development and/or intervention planning. F.9
8. Demonstrate knowledge of a variety of techniques and procedures to evaluate and modify program goals for young children and their families. F.10
9. Demonstrate knowledge and use of program evaluation to ensure comprehensive quality of the total Environment for children, families, and the community. F.11
10. Use both self and collaborative evaluations as part of ongoing program evaluations. F.12

ECED 1130. Family and Community Collaboration
3 Credits (3)
This beginning course examines the involvement of families and communities from diverse cultural and linguistic backgrounds in early childhood programs. Ways to establishes collaborative relationships with families in early childhood settings is discussed. Families’ goals and desires for their children will be supported through culturally responsive strategies.
Prerequisite(s): ECED 1110 and (ENGL 1110G or ENGL 1110H or ENGL 1110M).

Learning Outcomes
1. Demonstrate knowledge and skill in building positive, reciprocal relationships with families. C.1
2. Articulate an understanding of a safe and welcoming environment for families and community members. C.2
3. Develop and maintain ongoing contact with families through a variety of communication strategies. C.3
4. Demonstrate knowledge of and respect for variations across cultures, in terms of family strengths, expectations, values, and child-rearing practices. C.4
5. Articulate understanding of the complexity and dynamics of family systems. C.5
6. Demonstrate understanding of the importance of families as the primary educator of their child. C.6
7. Involve families and community members in contributing to the learning environment. C.9
8. Demonstrate ability to communicate to families the program’s policies, procedures, and those procedural safeguards that are mandated by state and federal regulations. C.11
9. Apply knowledge of family theory and research to understand family and community characteristics including socioeconomic conditions; family structures, relationships, stressors, and supports (including the impact of having a child with diverse abilities); home language and ethnicity. C.12
10. Demonstrate knowledge of and skill to access community resources that assist families and contribute directly or indirectly to children’s positive development such as mental health services, health care, adult education, English language instruction, and economic assistance. C.13
11. Demonstrate effective written and oral communication skills when working with children, families, and early care, education, and family support professionals. E.14
12. Demonstrate a commitment to leadership and advocacy for excellence in programs and services for young children and their families. G.6
ECED 2110. Professionalism  
2 Credits (2)
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.

Learning Outcomes
1. Recognize signs of emotional distress, child abuse, and neglect in young children and use procedures appropriate to the situation, such as initiating discussions with families, referring to appropriate professionals, and, in cases of suspected abuse or neglect, reporting to designated authorities. B.4
2. Demonstrate ability to communicate to families the program’s policies, procedures, and those procedural safeguards that are mandated by state and federal regulations. C.11
3. Use both self and collaborative evaluations as part of ongoing program evaluations. F.12
4. Demonstrate ability to adhere to early childhood professional codes of ethical conduct and issues of confidentiality. G.1
5. Demonstrate awareness of federal, state, and local regulations, and public policies regarding programs and services for children birth through eight years of age. G.2
6. Demonstrate understanding of conditions of children, families, and professionals; the historical and current issues and trends; legal issues; and legislation and other public policies affecting children, families, and programs for young children and the early childhood profession. G.3
7. Demonstrate critical reflection of one’s own professional and educational practices from community, state, national, and global perspectives. G.4
8. Demonstrate understanding of the early childhood profession, its multiple historical, philosophical, and social foundations, and how these foundations influence current thought and practice. G.5
9. Demonstrate knowledge in technology resources to engage in ongoing professional development. G.7

ECED 2115. Introduction to Language, Literacy, and Reading  
3 Credits (3)
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. This course provides the foundation for early childhood professionals to become knowledgeable about literacy development in young children. Instructional approaches and theory-based and research based strategies to support the emergent literacy and reading skills of native speakers and English language learners will be presented.

Prerequisite(s): ECED 1110 and (ENGL 1110G or ENGL 1110H, or ENGL 1110M).

Learning Outcomes
1. Demonstrate knowledge of the many functions that language serves in the cognitive, social, and emotional aspects of development in the formative years. A.7
2. Demonstrate knowledge of the developmental sequence of language and literacy, including the influence of culture and home factors. A.8
3. Demonstrate knowledge of how children acquire and use verbal, non-verbal, and alternative means of communication. A.9
4. Develop partnerships with family members to promote early literacy in the home. C.8
5. Establish partnerships with community members in promoting literacy. C.10
6. Demonstrate knowledge of the reading and writing components of emergent literacy at each developmental level. D.4
7. Provide and use anti-bias materials/literature and experiences in all content areas of the curriculum. D.7
8. Create and manage a literacy-rich environment that is responsive to each child’s unique path of development. E.9
9. Use a variety of strategies during adult-child and child-child interactions and facilitate communication and dialogue of expressive language and thought. E.10
10. Demonstrate a variety of developmentally appropriate instructional strategies that facilitate the development of literacy skills. E.11
ECED 2120. Curriculum Development through Play Birth through Age 4 (PreK)
3 Credits (3)
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 in 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 special needs and the development of IFSPs is included. Curriculum development in all areas, including literacy, numeracy, the arts, health, science, social skills, and adaptive learning for children, birth through age four, is emphasized. Consent of instructor required.
Prerequisite(s): ECED 1110 and (ENGL 1110G or ENGL 1110H or ENGL 1110M).
Corequisite(s): ECED 2121.
Learning Outcomes
1. Use appropriate guidance to support the development of self-regulatory capacities in young children. A.11
2. Demonstrate knowledge of relevant content for young children and developmentally appropriate ways of integrating content into teaching and learning experiences for children from birth to four (0-4) years of age. D.1
3. Demonstrate the integration of knowledge of how young children develop and learn with knowledge of the concepts, inquiry tools, and structure of content areas appropriate for different developmental levels. D.2
4. Adapt content to meet the needs of each child, including the development of individualized family service plans (IFSP) or individualized education plans (IEP) for children with diverse abilities through the team process with families and other team members. D.6
5. Demonstrate knowledge of varying program models and learning environments that meet the individual needs of all young children, including those with diverse abilities. E.1
6. Create environments that encourage active involvement, initiative, responsibility, and a growing sense of autonomy through the selection and use of materials and equipment that are suitable to individual learning, developmental levels, diverse abilities, and the language and cultures in New Mexico. E.2
7. Develop, implement and evaluate an integrated curriculum that focuses on children's development and interests, using their language, home experiences, and cultural values. D.5
8. Demonstrate understanding of the influence of the physical setting, schedule, routines, and transitions on children and use these experiences to promote children's development and learning. E.7
9. Use and explain the rationale for developmentally appropriate methods that include play, small group projects, open-ended questioning, group discussion, problem solving, cooperative learning and inquiry experiences to help young children develop intellectual curiosity, solve problems, and make decisions. E.8
10. Demonstrate understanding of the influence of the physical setting, schedule, routines, and transitions on children and use these experiences to promote children's development and learning. E.7
11. Plan blocks of uninterrupted time for children to persist at self-chosen activities, both indoors and outdoors. E.6
12. Demonstrate a variety of developmentally appropriate instructional strategies that facilitate the development of emergent literacy skills. E.11
13. Demonstrate understanding of the influence of the physical setting, schedule, routines, and transitions on children and use these experiences to promote children's development and learning. E.7
14. Use and explain the rationale for developmentally appropriate methods that include play, small group projects, open-ended questioning, group discussion, problem solving, cooperative learning and inquiry experiences to help young children develop intellectual curiosity, solve problems, and make decisions. E.8
15. Provide a variety of activities that facilitate development of the whole child in the following areas: Physical/motor, social/emotional, language/cognitive and adaptive/living skills. A.5
16. Use and explain the rationale for developmentally appropriate methods that include play, small group projects, open-ended questioning, group discussion, problem solving, cooperative learning and inquiry experiences to help young children develop intellectual curiosity, solve problems, and make decisions. E.8

ECED 2121. Curriculum Development through Play Birth through Age 4 (PreK) Practicum
2 Credits (2)
The beginning practicum course is a co-requisite with the course Curriculum Development through Play – Birth through Age 4. The field based component of this course will provide experiences that address curriculum content that is relevant for children birth through age four in 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 special needs and the development of IFSPs is included. Curriculum development in all areas, including literacy, numeracy, the arts, health, science, social skills, and adaptive learning for children, birth through age four, is emphasized. Consent of instructor required.
Prerequisite(s): ECED 1110 and (ENGL 1110G or ENGL 1110H or ENGL 1110M).
Corequisite(s): ECED 2120.
Learning Outcomes
1. Use appropriate guidance to support the development of self-regulatory capacities in young children. A.11
2. Demonstrate knowledge of relevant content for young children and developmentally appropriate ways of integrating content into teaching and learning experiences for children from birth to four (0-4) years of age. D.1
3. Demonstrate the integration of knowledge of how young children develop and learn with knowledge of the concepts, inquiry tools, and structure of content areas appropriate for different developmental levels. D.2
4. Adapt content to meet the needs of each child, including the development of individualized family service plans (IFSP) or individualized education plans (IEP) for children with diverse abilities through the team process with families and other team members. D.6
5. Demonstrate knowledge of varying program models and learning environments that meet the individual needs of all young children, including those with diverse abilities. E.1
6. Create environments that encourage active involvement, initiative, responsibility, and a growing sense of autonomy through the selection and use of materials and equipment that are suitable to individual learning, developmental levels, diverse abilities, and the language and cultures in New Mexico. E.2
7. Develop, implement and evaluate an integrated curriculum that focuses on children's development and interests, using their language, home experiences, and cultural values. D.5
8. Demonstrate understanding that each child's creative expression is unique and can be encouraged through diverse ways, including creative play. E.5
9. Plan blocks of uninterrupted time for children to persist at self-chosen activities, both indoors and outdoors. E.6
10. Demonstrate understanding of the influence of the physical setting, schedule, routines, and transitions on children and use these experiences to promote children's development and learning. E.7
11. Use and explain the rationale for developmentally appropriate methods that include play, small group projects, open-ended questioning, group discussion, problem solving, cooperative learning and inquiry experiences to help young children develop intellectual curiosity, solve problems, and make decisions. E.8
12. Demonstrate understanding of the influence of the physical setting, schedule, routines, and transitions on children and use these experiences to promote children's development and learning. E.7
13. Demonstrate understanding of the influence of the physical setting, schedule, routines, and transitions on children and use these experiences to promote children's development and learning. E.7
14. Use and explain the rationale for developmentally appropriate methods that include play, small group projects, open-ended questioning, group discussion, problem solving, cooperative learning and inquiry experiences to help young children develop intellectual curiosity, solve problems, and make decisions. E.8
ECED 2130. Curriculum Development and Implementation Age 3 (PreK) through Grade 3  
3 Credits (3)  
The 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 special needs and the development of IEP’s is included. Consent of instructor required.  
Prerequisite(s): ECED 1110 and (ENGL 1110G or ENGL 1110H or ENGL 1110M).  
Corequisite(s): ECED 2131.  
Learning Outcomes  
1. Use appropriate guidance to support the development of self-regulatory capacities in young children. A.11  
2. Demonstrate the integration of knowledge of how young children develop and learn with knowledge of the concepts, inquiry tools, and structure of content areas appropriate for different developmental levels. D.2  
3. Demonstrate knowledge of what is important in each content area, why it is of value, and how it links with early and later understandings within and across areas. D.3  
4. Demonstrate knowledge of the language, reading and writing components of emergent literacy at each developmental level. D.4  
5. Adapt content to meet the needs of each child, including the development of individualized family service plans (IFSP) or individualized education plans (IEP) for children with diverse abilities through the team process with families and other team members. D.6  
6. Demonstrate knowledge of varying program models and learning environments that meet the individual needs of all young children, including those with diverse abilities. E.1  
7. Create environments that encourage active involvement, initiative, responsibility, and a growing sense of autonomy through the selection and use of materials and equipment that are suitable to individual learning, developmental levels, diverse abilities, and the language and cultures in New Mexico. E.2  
8. Create and manage inclusive learning environments that provide individual and cooperative opportunities for children to construct their own knowledge through various strategies that include decision-making, problem solving, and inquiry experiences. E.4  
9. Demonstrate understanding that each child’s creative expression is unique and can be encouraged through diverse ways, including creative play. E.5  
10. Plan blocks of uninterrupted time for children to persist at self-chosen activities, both indoors and outdoors. E.6  
11. Demonstrate understanding of the influence of the physical setting, schedule, routines, and transitions on children and use these experiences to promote children’s development and learning. E.7  
12. Demonstrate knowledge of developmentally appropriate uses of technology, including assistive technology. E.12  
13. Demonstrate knowledge of assessment techniques, interpretation of assessment information in the application of this data to curriculum development of intervention planning. F.9

ECED 2131. Curriculum Development and Implementation Age 3 (PreK) through Grade 3 Practicum  
2 Credits (2)  
The beginning practicum course is a co-requisite with the course Curriculum Development and Implementation: Age 3 through Grade 3. The field based component of this course will provide experiences that address 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 special needs and the development of IEPs is included. Consent of instructor required. Corequisite(s): ECED 2130  
Prerequisite(s): ECED 1110 and (ENGL 1110G or ENGL 1110H or ENGL 1110M).  
Learning Outcomes  
1. Provide a variety of activities that facilitate development of the whole child in the following areas: Physical/motor, social/emotional, language/cognitive and adaptive/living skills. A.5  
2. Develop, implement and evaluate an integrated curriculum that focuses on children's development and interests, using their language, home experiences, and cultural values. D.5  
3. Provides and uses anti-bias materials and literature, and experiences in all content areas of the curriculum. D.7  
4. Create and manage inclusive learning environments that provide individual and cooperative opportunities  
5. for children to construct their own knowledge through various strategies that include decision-making, problem solving, and inquiry experiences. E.4  
6. Demonstrate understanding that each child's creative expression is unique and can be encouraged  
7. through diverse ways, including creative play. E.5  
8. Plan blocks of uninterrupted time for children to persist at self-chosen activities, both indoors and outdoors. E.6  
9. Demonstrate understanding of the influence of the physical setting, schedule, routines, and transitions on children and use these experiences to promote children's development and learning. E.7  
10. Use and explain the rationale for developmentally appropriate methods that include play, small group projects, open-ended questioning, group discussion, problem solving, cooperative learning and inquiry experiences to help young children develop intellectual curiosity, solve problems, and make decisions. E.8
ECED 2140. Effective Program Development for Diverse Learners and their Families
3 Credits (3)
This course addresses the role of a director/administrator in the implementation of family-centered programming that includes individually appropriate and culturally responsive curriculum in a healthy and safe learning environment for all children and their families.

Learning Outcomes
1. Describe important aspects of leadership that an administrator in an early childhood setting must demonstrate.
2. Identify and describe ways in which classrooms can have a multicultural environment.
3. Observe a classroom and identify, using photographs good practice with classroom environment.
4. Describe important aspects of a good early childhood curriculum
5. Describe how culture and socioeconomic factors influence classroom environment.

ECED 2141. Effective Program Development for Diverse Learners and their Families Practicum
2 Credits (2)
Provides opportunities for students to apply knowledge gained from Curriculum for Diverse Learners and their Families in a practicum setting. Consent of instructor required. Restricted to ECED majors.

Corequisite(s): ECED 2140.

Learning Outcomes
1. Describe the requirements to maintain and enhance the physical and mental health, safety, and nutrition components of a program: Demonstrate knowledge of facility management to include evaluation, maintenance, security, and meeting applicable codes; Demonstrate knowledge of planning for appropriate indoor and outdoor environments; Identify ways to support early childhood educators in the selection of appropriate materials and equipment for the environment; Demonstrate knowledge of the impact of the environment on children's learning and development.
2. Demonstrate knowledge of early care and education curriculum that is individually, culturally, linguistically, and developmentally responsive: Describe a variety of curriculum goals and teaching strategies; Describe the importance of ongoing curriculum assessment and planning, and collaboration with teachers, families and community entities; Identify ways to support early childhood educators in curriculum assessment and planning.
3. Demonstrate knowledge of family/community involvement in effective program development: Describe the importance of supporting families as partners in early care and education program development; Describe both informal and formal communication systems with families that encourage information sharing and joint decision making; Identify strategies for resolving conflicts and supporting families with diverse backgrounds and parenting expectations; Identify the range of family needs including transitional periods; Identify within the community the network to support families with their special needs; Describe a “family friendly” inclusive philosophy
4. Demonstrate knowledge of a director’s role as an educational leader in an inclusive setting: Describe what a director does in supporting the instructional component of the program for children, staff, and families; Identify resources that a director might use to keep current with information relating to the instructional component of the program; Describe ways to involve teachers in instructional decision making.

ECED 2215. Program Management
3 Credits (3)
This course emphasizes the technical knowledge necessary to develop and maintain an effective early care and education program. It focuses on sound financial management and vision, the laws and legal issues that affect programs, and state and national standards such as accreditation. Consent of instructor required.

ECED 2280. Professional Relationships
3 Credits (3)
This course addresses staff relations that will foster diverse professional relationships with families, communities and boards. Topics of staff recruitment, retention, support and supervision will lay the foundation for positive personnel, family and community relationships. Consent of instructor required.

Corequisite(s): ECED 2281.

Learning Outcomes
1. Interview an administrator and write a paper describing personnel management, staff support,
2. supervision, and professional development.
3. Identify and describe ethical and legal requirements in maintaining a professional relationship with subordinates, the community, clients, and fellow administrators.
4. Identify and describe technologies which may be used in an early childhood setting.
5. Identify and describe legal and ethical considerations in the employment of others.
ECED 2281. Professional Relationships Practicum
2 Credits (2)
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. Restricted to ECED majors.
Corequisite(s): ECED 2280.

Learning Outcomes
1. Demonstrate knowledge of personnel management, staff support, supervision, and professional development within a diverse and inclusive organization: Describe methods for recruiting and retaining a diverse staff; Describe job descriptions for each position; Review a sampling of personnel policies and procedures; Review a variety of staff handbooks; Explain why on-going system of supervision should include regular meetings for professional goal setting, self-assessment, and feedback; Review program needs to effectively manage the work of the program including scheduling, covering ratios, initial orientation, in-service, staff meeting, etc.
2. Demonstrate an awareness of appropriate communication and collaboration skills: Improve written and oral communication skills; Describe strategies for resolving conflicts; Explain how to promote consensus building as a decision making process.
3. Demonstrate knowledge that promotes effective professional relationships with families, communities, and board members: Describe methods for demonstrating respect, understanding, and appreciation for all people; Identify the aspects of culture that facilitate relationship building among people; Describe how to build a common vision and develop long range program plans with parents, staff, board, and the community; Communicate program goals to visitors, prospective parents, volunteers, and board members; Describe how public relations and marketing strategies can impact programs; Review assessment tools that identify needs for early care, education and family support; Develop a personal professional development plan; Describe methods to work effectively with a board and advisory group.
4. Demonstrate knowledge of technology uses and skill acquisition: Describe how to use technology resources to engage in ongoing professional development and lifelong learning; Describe how you will use technology to communicate and collaborate in your leadership role.

Program Manager: Kathleen O’Connor
Phone: (505) 287-6693
Email: katioco@nmsu.edu
Office: Lucy Belle Ma Hall

Early Childhood Education - Associate Degree
68 credits

The Early Childhood Education associate degree program is designed to prepare students to become highly qualified teachers, assistant teachers, or family day care providers in professional child-care for children ages birth through eight years. Students will gain a broad understanding of the specific needs of young children and develop strategies for meeting those needs. Students may choose to continue their education at any four-year institution in New Mexico. The NMSU Grants program includes the lower division courses required for entry into the Teacher Education Program (TEP), a baccalaureate program at New Mexico State University. Completion of this program does NOT guarantee admission into a Teacher Education Program at a four-year institution. Early in their second year of study at NMSU Grants, students should contact the four-year institution they have chosen to obtain application information.

Requirements and Limitations
1. Students in the Early Childhood Education Program are required to complete and pass a security background check in order to take practicum courses and field experiences. Past criminal violations may prevent a student from completing the degree and from being hired by school systems or other child care facilities upon graduation.
2. Students must complete all technical requirement courses as well as the following courses with a grade of C or better:

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CEPY 1120G</td>
<td>Human Growth and Behavior</td>
<td>3</td>
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<tr>
<td>ENGL 1110G</td>
<td>Composition I</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 2221G</td>
<td>Writing in the Humanities and Social Science</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1215</td>
<td>Intermediate Algebra</td>
<td>3</td>
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<tr>
<td>MATH 1134</td>
<td>Fundamentals of Elementary Mathematics I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 2134G</td>
<td>Fundamentals of Elementary Math II</td>
<td>3</td>
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</tbody>
</table>

3. Students must have a 2.0 GPA to graduate from this program. However, because a 2.75 GPA is required for acceptance into the Teacher Education Program at NMSU, it is highly recommended that Grants students complete the Early Childhood Education program with a 2.5 cumulative GPA.

4. Any education course more than seven years old taken at NMSU, NMSU community colleges or other institutions will not be counted toward the student’s baccalaureate program. It is highly recommended that students request a review of their cumulative coursework by the appropriate department at NMSU. The student must repeat any course not approved.

5. Completion of all requirements does not guarantee acceptance in the NMSU Teacher Education Program. Please see the NMSU College of Education Advising Center for more information.

Students must complete all University degree requirements, which include: General Education requirements and elective credits to total at least 68 credits. Developmental coursework will not count towards the degree requirements and/or elective credits, but may be needed in order to take the necessary English and Mathematics coursework.

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<tr>
<th>Prefix</th>
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<tr>
<td>Oral Communication</td>
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<td>COMM 1130G</td>
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<tr>
<td>or COMM 1115G</td>
<td>Introduction to Communication</td>
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<tr>
<td>Area II: Mathematics</td>
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<td>MATH 2134G</td>
<td>Fundamentals of Elementary Math II</td>
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<tr>
<td>Area III/IV: Laboratory Sciences and Social/Behavioral Sciences</td>
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<tr>
<td>CEPY 1120G</td>
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<td>The Planets Lecture &amp; Laboratory</td>
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<td>BIOL 1120G &amp; BIOL 1120L</td>
<td>Human Biology and Human Biology Laboratory</td>
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<td>BIOL 1190G</td>
<td>Contemporary Problems in Biology</td>
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<tr>
<td>BIOL 2110G &amp; BIOL 2110L</td>
<td>Principles of Biology: Cellular and Molecular Biology and Principles of Biology: Cellular and Molecular Biology Laboratory</td>
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<td>Introduction to Chemistry Lecture and Laboratory (non majors)</td>
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<td>General Chemistry I Lecture and Laboratory for STEM Majors</td>
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<td>CHEM 1225G</td>
<td>General Chemistry II Lecture and Laboratory for STEM Majors</td>
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<td>GEOL 1110G</td>
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<td>GEOG 1110G</td>
<td>Physical Geography</td>
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<td>PHYS 1115G</td>
<td>Survey of Physics with Lab</td>
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<td>Algebra-Based Physics II and Algebra-Based Physics II Lab</td>
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<td>World History I</td>
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<tr>
<td>or HIST 1140G</td>
<td>World History II</td>
<td>3</td>
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<tr>
<td>ARTH 1115G</td>
<td>Orientation in Art</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 1130G</td>
<td>Music Appreciation: Western Music</td>
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</tr>
<tr>
<td>or MUSC 1110G</td>
<td>Music Appreciation: Jazz</td>
<td>3</td>
</tr>
<tr>
<td>THEA 1110G</td>
<td>Introduction to Theatre</td>
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</tr>
<tr>
<td>HIST 1110G</td>
<td>United States History I</td>
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<td>or HIST 1120G</td>
<td>United States History II</td>
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<td>ANTH 1115G</td>
<td>Introduction to Anthropology</td>
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<td>ECON 1110G</td>
<td>Survey of Economics</td>
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<td>ECON 2110G</td>
<td>Macroeconomic Principles</td>
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<td>ECON 2120G</td>
<td>Principles of Microeconomics</td>
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<td>World Regional Geography</td>
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<td>POLS 1120G</td>
<td>American National Government</td>
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<td>SOCI 1110G</td>
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<td>Child Growth, Development, and Learning</td>
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<td>Introduction to Language, Literacy, and Reading</td>
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<td>Curriculum Development and Implementation Age 3 (PreK) through Grade 3 Practicum</td>
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</table>

**Total Credits**: 68

1. MATH 2134G Fundamentals of Elementary Math II requires a prerequisite of a grade of C or better in MATH 1134 Fundamentals of Elementary Mathematics I. MATH 1134 requires a placement into this course, or a C or better in MATH 1215.

Additional courses may be needed based on placement test results and/or course prerequisites. Visit with your Program Manager or advisor for help in creating a customized plan.

### A Suggested Plan of Study for Students

This roadmap assumes student placement in MATH 1134 Fundamentals of Elementary Mathematics I and ENGL 1110G Composition I. The contents and order of this roadmap may vary depending on initial student placement in mathematics and English. It is only a suggested plan of study for students and is not intended as a contract. Course availability may vary from fall to spring semester and may be subject to modification or change. Students planning to apply to a Teacher Education Program at NMSU must have a 2.75 GPA.

<table>
<thead>
<tr>
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<td>Fundamentals of Elementary Mathematics I</td>
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<td>CEPY 1120G</td>
<td>Human Growth and Behavior</td>
<td>3</td>
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<tr>
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<tr>
<td>ARTH 1115G</td>
<td>Orientation in Art</td>
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</tr>
<tr>
<td>MUSC 1130G</td>
<td>Music Appreciation: Western Music</td>
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</tr>
<tr>
<td>or MUSC 1110G</td>
<td>Music Appreciation: Jazz</td>
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<tr>
<td>THEA 1110G</td>
<td>Introduction to Theatre</td>
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<td>ENGL 2221G</td>
<td>Writing in the Humanities and Social Science</td>
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<td>MATH 2134G</td>
<td>Fundamentals of Elementary Math II</td>
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<tr>
<td>HIST 1130G &amp; HIST 1140G</td>
<td>World History I and World History II</td>
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<td>ECED 1115</td>
<td>Health, Safety, and Nutrition</td>
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<td>Summer</td>
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<td>ECED 2115</td>
<td>Introduction to Language, Literacy, and Reading</td>
<td>3</td>
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<td>ECED 1120</td>
<td>Guiding Young Children</td>
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<td></td>
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<td>Second Year</td>
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<tr>
<td>Fall</td>
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<tr>
<td>COMM 1130G or COMM 1115G</td>
<td>Public Speaking or Introduction to Communication</td>
<td>3</td>
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<tr>
<td>Area III: Laboratory Science Course</td>
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</table>
Early Childhood Education - Certificate of Completion

33 credits

The requirements for the Certificate in Early Childhood Education at NMSU Grants also meet the requirements of the one-year vocational certificate awarded by the State of New Mexico, Office of Child Development.

This Certificate is 100% embedded in, and leads to the Associate of Early Childhood Education at NMSU Grants.

Requirements and Limitations

- Students in the Early Childhood Program are required to complete and pass a security background check in order to take practicum courses and field experiences. Past criminal violations may prevent a student from completing the degree and from being hired by school systems or other childcare facilities upon graduation.
- Students must complete ENGL 1110G Composition I with a C or better.
- Students must have a 2.0 GPA to apply for this certificate. However, 2.75 GPA is required for acceptance into the Teacher Education Program at NMSU.
- Any education course more than seven years old taken at NMSU, NMSU community colleges or other institutions will not be counted toward the student’s baccalaureate program. It is highly recommended that students request a review of their cumulative coursework by the appropriate department at NMSU. The student must repeat any course not approved.

Completion of all requirements does not guarantee acceptance in the NMSU Teacher Education Program. Please see the NMSU College of Education Advising Center for more information.

<table>
<thead>
<tr>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENGL 1110G Composition I</td>
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</table>

A Suggested Plan of Study

This roadmap is only a suggested plan of study in order to complete this Certificate in 2 or 3 semesters. A 3 semester completion plan may work best due to the required ENGL 1110G, Composition I as a prerequisite for the Curriculum and Practicum I and II courses. It is not intended as a contract. Course availability may vary from fall to spring semester and may be subject to modification or change. Students are advised to earn a C or better to avoid repeating courses. A 2.75 GPA is required to apply to a Teacher Education Program at NMSU. This plan presumes the student is ready for ENGL 1110G, as determined by the English Placement test, an ACT score, or passing the prerequisite course.

<table>
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<th>Course</th>
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<td>ECED 1120 Guiding Young Children</td>
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<tr>
<td>ECED 1130 Family and Community Collaboration</td>
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<td>ECED 2110 Professionalism</td>
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<td>ECED 11125 Assessment of Children and Evaluation of Programs</td>
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<td>ECED 2110 Professionalism</td>
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<td>ECED 2115 Introduction to Language, Literacy, and Reading</td>
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<td>ECED 2120 Curriculum Development through Play Birth through Age 4 (PreK) Practicum</td>
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<td>ECED 2130 Curriculum Development through Play Birth through Age 4 (PreK) Practicum</td>
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<td>ECED 2131 Curriculum Development and Implementation Age 3 (PreK) through Grade 3 Practicum</td>
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<table>
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<th>Course</th>
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<tbody>
<tr>
<td>ECED 1110 Child Growth, Development, and Learning</td>
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<tr>
<td>ECED 1120 Guiding Young Children</td>
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</table>
ECED 2110 Professionalism 2

Credits 12

Spring

ECED 2120 Curriculum Development through Play Birth through Age 4 (PreK) 3
ECED 2121 Curriculum Development through Play Birth through Age 4 (PreK) Practicum 2
ECED 1115 Health, Safety, and Nutrition 2
ECED 1125 Assessment of Children and Evaluation of Programs 3
ECED 1130 Family and Community Collaboration 3

Credits 13

Second Year

Fall

ECED 2115 Introduction to Language, Literacy, and Reading 3
ECED 2130 Curriculum Development and Implementation Age 3 (PreK) through Grade 3 3
ECED 2131 Curriculum Development and Implementation Age 3 (PreK) through Grade 3 Practicum 2

Credits 8

Total Credits 33

Program Manager: Kathleen O'Connor
Phone: (505) 287-6693
Email: katioco@nmsu.edu
Office: Lucy Belle Ma Hall

Education

Education - Associate Degree (p. 119)

EDUC 1110. Freshman Orientation
1 Credit (1)
Introduction to the university and to the College of Education. Discussion of planning for individualized education program and field experience. Restricted to Las Cruces campus only.

Learning Outcomes
1. Demonstrates knowledge of and uses theories, approaches, methods, and techniques for teaching, reading, writing, and other academic skills in English and the native language.
2. Demonstrates knowledge of and applies management techniques appropriate to classrooms containing students who have varying levels of proficiency and academic experience in both languages.
3. Community/Family Involvement
4. The bilingual teacher:
5. Recognizes the importance of parental and community involvement for facilitating the learner's successful integration to his/her school environment.
6. Demonstrates knowledge of the teaching and learning patterns of the students' home environment and incorporates these into the instructional areas of program.
7. Assessment
8. The bilingual teacher:
9. Assesses oral and written language proficiency in academic areas in both languages utilizing the results for instructional placement, prescription, and evaluation.
10. Evaluates the growth of the learner's native and second language in the context of the curriculum.
11. Continuously assesses and adjusts her or his own language use in the classroom in order to maximize learner comprehension and verbal participation

EDUC 1120. Introduction to Education
2 Credits (2)
Introduction to the historical, philosophical, sociological foundations of education, current trends, and issues in education; especially as it relates to a multicultural environment. Students will use these foundations to develop effective strategies related to problems, issues and responsibilities in the field of education. Restricted to Las Cruces campus only.

Learning Outcomes
1. Describe the teaching and learning of various American education settings including early childhood, elementary, middle school, high school, and special education.
2. Describe how teachers use educational theory and the results of research of students' learning.
3. Explain the techniques for establishing a positive and supportive environment in the classroom
4. Identify and describe instructional strategies supported by current research to promote thinking skills of all learners.
5. Recognize the teachers' role and responsibilities in an increasingly diverse, multicultural society.
EDUC 1140. Math for Paraprofessionals
3 Credits (3)
Applied math skills for paraprofessionals working with children.
Prerequisite: CCDM 103 N.
Learning Outcomes
1. Students will plan developmentally appropriate math activities for young children.
2. Students will plan adaptations to math activities for children with diverse abilities.
3. Students will demonstrate understanding of recent research in methods of teaching mathematics.
4. Students will demonstrate understanding of early childhood theories as they relate to the teaching of mathematics.
5. Students will demonstrate understanding of unique needs of children from diverse economic or cultural backgrounds.

EDUC 1150. Math for Paraprofessionals II
3 Credits (3)
Applied math skills for paraprofessionals working under the direction of a teacher.
Prerequisites: EDUC 1140.
Learning Outcomes
1. Students will plan developmentally appropriate math activities for young children.
2. Students will plan adaptations to math activities for children with diverse abilities.
3. Students will demonstrate understanding of recent research in methods of teaching mathematics.
4. Students will demonstrate understanding of early childhood theories as they relate to the teaching of mathematics.
5. Students will demonstrate understanding of unique needs of children from diverse economic or cultural backgrounds.

EDUC 1185. Introduction to Secondary Education and Youth
3 Credits (3)
Introductory course for students considering a career in secondary education. Includes historical, philosophical, and sociological foundations, program organization, critical dispositions, and understanding the context of schools and youth. Practicum required. Restricted to: Secondary Ed majors. Traditional Grading with RR.
Learning Outcomes
1. Articulate the attributes of an education professional entering the field.
2. Differentiate and summarize the major educational philosophies and historical events that have influenced the progression of educational practice.
3. Describe the role of law in education with emphasis on the rights and responsibilities of teachers and learners.
4. Develop a preliminary personal philosophy of teaching and learning.
5. Discuss the characteristics and roles of the teacher, the student, and the school in today's education.
6. Identify effective teaching methods, instructional strategies and learning styles.
7. Evaluate the Lesson Planning Process using various lesson planning templates, formats, and rubrics.
8. Explain classroom management techniques.
9. Identify different types of diversity in the classroom environment.
10. Describe how learning differences are manifested in schools.
11. Describe how teachers use multiple methods of assessment to engage learners in their own growth, to monitor learner progress.
12. Describe how teachers use multiple methods of assessment to modify instruction and inform decision making.
13. Identify the role of Standards and High Stakes Testing in the life of an educational professional.
14. Complete 24 hours internship in a classroom, preferably a bilingual classroom.
15. Document and reflect on your observations throughout your internship.
16. Construct an individualized map to teacher licensure in the State of New Mexico.

EDUC 1995. Field Experience I
1 Credit (1)
Introduction to public school teaching, school visits, classroom observations and discussion seminar.
Learning Outcomes
1. Demonstrate an understanding of personal attitudes and motivations for entering the field of education.
2. Identify effective teaching strategies that enhance student learning outcomes.
3. Identify classroom management techniques and learning styles.
4. Develop observational skills and reflective thinking skills.
5. Evaluate instructional methods that enhance upper level thinking skills in children.
EDUC 1996. Special Topics in Education
1 Credit (1)
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.

Learning Outcomes
1. Varies

EDUC 1998. Internship I
3 Credits (3)
Supervised experience in elementary education settings.

Learning Outcomes
1. Varies

EDUC 2710. Pre-Teacher Preparation
3 Credits (3)
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.

Learning Outcomes
1. Investigate the process and requirements of the Teacher Education Program
2. Read critically about teacher's experiences and write brief reactions
3. Discuss philosophies of education and draft a written personal philosophy of education
4. Discuss the nature of education for students with diverse languages, cultures and abilities
5. Draft personal position statements concerning education for students with disabilities and diverse cultures

EDUC 2998. Internship II
3 Credits (3)
Supervised experience in junior high settings.

Prerequisite: must be a co-op student.

Learning Outcomes
1. Varies

Program Manager: Kathleen O'Connor
Phone: (505) 287-6693
Email: katioco@nmsu.edu
Office: Lucy Belle Ma Hall

Education - Associate in Education

60 credits

The Education associate degree program at NMSU Grants is designed to prepare students for transfer into the Teacher Education Program (TEP), a baccalaureate program at New Mexico State University. Alternatively, students may opt to transfer to a similar program at another four-year institution. The NMSU Grants program includes the lower division courses required for entry into the TEP. Completion of this program does NOT guarantee admission into a Teacher Education Program at a four-year institution. The student will need a 2.75 GPA to be eligible to apply to the TEP. Early in their second year of study at NMSU Grants students should contact the four-year institution they have chosen to obtain application information.

NOTE: It is recommended that students check the requirements for their planned bachelor's degree. Requirements may differ for some bachelor's degrees. See education advisor for course selection information. NMSU Las Cruces College of Education requirements.

Requirements and Limitations

1. Students in the Education Program are required to complete and pass a security background check in order to take field-experience courses. Past criminal violations may prevent a student from completing the degree and from being hired by school systems or other childcare facilities upon graduation.

2. Students must complete all Technical Requirement courses as well as the following courses with a C- or better:

<table>
<thead>
<tr>
<th>Prefix</th>
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<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 1110G</td>
<td>Composition I</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 2221G</td>
<td>Writing in the Humanities and Social Science</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1134</td>
<td>Fundamentals of Elementary Mathematics I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 2134G</td>
<td>Fundamentals of Elementary Mathematics II</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1215</td>
<td>Intermediate Algebra</td>
<td>3</td>
</tr>
</tbody>
</table>

3. Students must have a 2.0 GPA to graduate from this program. However, a 2.5 GPA is required for acceptance into the Teacher Education Program at NMSU. For this reason, it is highly recommended that NMSU Grants students complete the Education Program with a 2.5 cumulative GPA.

4. Any education course more than seven years old taken at NMSU, NMSU community colleges, or other institutions will not be counted toward the student’s baccalaureate program. It is highly recommended that students request a review of their cumulative coursework by the appropriate department at NMSU. The student must repeat any course not approved.

Students must complete all University degree requirements, which include: General Education requirements and elective credits to total at least 60 credits. Developmental coursework will not count towards the degree requirements and/or elective credits, but may be needed in order to take the necessary English and Mathematics coursework. New Mexico General Education courses.

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</tr>
</tbody>
</table>

Area I: Communications

<table>
<thead>
<tr>
<th>Area I: Communications</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Composition - Level 1</td>
<td>Composition I</td>
<td>4</td>
</tr>
<tr>
<td>English Composition - Level 2</td>
<td>Writing in the Humanities and Social Science</td>
<td>3</td>
</tr>
</tbody>
</table>

Oral Communication

<table>
<thead>
<tr>
<th>Area II: Mathematics</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 2134G</td>
<td>Fundamentals of Elementary Mathematics II</td>
<td>3</td>
</tr>
</tbody>
</table>

Area III/IV: Laboratory Sciences and Social/Behavioral Sciences

<table>
<thead>
<tr>
<th>Area III/IV: Laboratory Sciences and Social/Behavioral Sciences</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEPY 1120G</td>
<td>Human Growth and Behavior</td>
<td>3</td>
</tr>
</tbody>
</table>

Select two 4 credit courses, including lab, from two areas.

<table>
<thead>
<tr>
<th>Area III/IV: Laboratory Sciences and Social/Behavioral Sciences</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTR 1115G or ASTR 1120G</td>
<td>Introduction Astro (lec+lab)</td>
<td>8</td>
</tr>
<tr>
<td>BIOL 1120G</td>
<td>Human Biology</td>
<td>3</td>
</tr>
<tr>
<td>&amp; BIOL 1120L</td>
<td>Human Biology Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 1190G</td>
<td>Contemporary Problems in Biology</td>
<td>3</td>
</tr>
</tbody>
</table>
### Major Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 2110G &amp; BIOL 2110L</td>
<td>Principles of Biology: Cellular and Molecular Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 2610G &amp; BIOL 2610L</td>
<td>Principles of Biology: Biodiversity, Ecology, and Evolution</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 1120G</td>
<td>Introduction to Chemistry Lecture and Laboratory (non majors)</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 1215G</td>
<td>General Chemistry I Lecture and Laboratory for STEM Majors</td>
<td>3</td>
</tr>
<tr>
<td>or CHEM 1225G</td>
<td>General Chemistry II Lecture and Laboratory for STEM Majors</td>
<td>3</td>
</tr>
<tr>
<td>ENVS 1110G</td>
<td>Environmental Science I</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 1110G</td>
<td>Physical Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 1110G</td>
<td>Physical Geography</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 1115G</td>
<td>Survey of Physics with Lab</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 1230G &amp; PHYS 1230L</td>
<td>Algebra-Based Physics I and Algebra-Based Physics I Lab</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 1240G &amp; PHYS 1240L</td>
<td>Algebra-Based Physics II and Algebra-Based Physics II Lab</td>
<td>3</td>
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</tbody>
</table>

### Area V: Humanities

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 1130G</td>
<td>World History I</td>
<td>3</td>
</tr>
<tr>
<td>or HIST 1140G</td>
<td>World History II</td>
<td>3</td>
</tr>
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</table>

### Area VI: Creative and Fine Arts

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH 1115G</td>
<td>Orientation in Art</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 1130G</td>
<td>Music Appreciation: Western Music</td>
<td>3</td>
</tr>
<tr>
<td>THEA 1110G</td>
<td>Introduction to Theatre</td>
<td>3</td>
</tr>
</tbody>
</table>

### General Education Elective

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LING 2110G</td>
<td>Introduction to the Study of Language and Linguistics</td>
<td>3</td>
</tr>
</tbody>
</table>

### Core Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 1110G</td>
<td>United States History I</td>
<td>3</td>
</tr>
<tr>
<td>or HIST 1120G</td>
<td>United States History II</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1215</td>
<td>Intermediate Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1134</td>
<td>Fundamentals of Elementary Mathematics I</td>
<td>3</td>
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</tbody>
</table>

### Second Year

#### Fall

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>HIST 1130G &amp; HIST 1140G</td>
<td>World History I or World History II</td>
<td>3</td>
</tr>
<tr>
<td>MATH 2134G</td>
<td>Fundamentals of Elementary Math II</td>
<td>3</td>
</tr>
<tr>
<td>BLED 1110</td>
<td>Introduction n Bilingual Education/ESL</td>
<td>3</td>
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</table>

### Electives

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDLT 1996</td>
<td>Special Topics in Education (NES Teacher Prep)</td>
<td>3</td>
</tr>
</tbody>
</table>

### Any Teaching Field course

1. Prerequisite: MATH 1134 Fundamentals of Elementary Mathematics I is a prerequisite to MATH 2134G. Additional prerequisites may be needed based on placement test results and/or course prerequisites. Visit with an advisor for help with creating your MATH sequence.

### Credits

Total Credits: 60

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2. Consult with the Education Program Manager to select an elective for your teaching field.

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### A Suggested Plan of Study for Students

This roadmap assumes student placement in MATH 1215 Intermediate Algebra and ENGL 1110G Composition I. The contents and order of this roadmap may vary depending on initial student placement in mathematics and English. It is only a suggested plan of study for students and is not intended as a contract. Course availability may vary from fall to spring semester and may be subject to modification or change. Students will need a 2.75 GPA to be eligible to apply to a Teacher Education Program at NMSU.

#### Credits

<table>
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<td>3</td>
</tr>
<tr>
<td>CEPY 1120G</td>
<td>Human Growth and Behavior</td>
<td>3</td>
</tr>
<tr>
<td>Choose one from the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ARTH 1115G</td>
<td>Orientation in Art</td>
<td>3</td>
</tr>
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<tr>
<td>THEA 1110G</td>
<td>Introduction to Theatre</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 2212G</td>
<td>Writing in the Humanities and Social Science</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1134</td>
<td>Fundamentals of Elementary Mathematics I</td>
<td>3</td>
</tr>
<tr>
<td>CEPY 2110</td>
<td>Learning in the Classroom</td>
<td>3</td>
</tr>
<tr>
<td>COMM 1115G</td>
<td>Introduction to Communication</td>
<td>3</td>
</tr>
<tr>
<td>or COMM 1130G</td>
<td>or Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>LING 2110G</td>
<td>Introduction to the Study of Language and Linguistics</td>
<td>3</td>
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</tbody>
</table>

#### Credits

Second Year: 15

#### Spring

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<thead>
<tr>
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</thead>
<tbody>
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<td>World History I or World History II</td>
<td>3</td>
</tr>
<tr>
<td>MATH 2134G</td>
<td>Fundamentals of Elementary Math II</td>
<td>3</td>
</tr>
<tr>
<td>BLED 1110</td>
<td>Introduction n Bilingual Education/ESL</td>
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### Electives

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<td>3</td>
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</table>

### Credits

Second Year: 16

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### Credits

Third Year: 16

#### Spring

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 1110G &amp; HIST 1120G</td>
<td>United States History I or United States History II</td>
<td>3</td>
</tr>
<tr>
<td>Area III: Laboratory Science Course</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>BLED 2110</td>
<td>Bilingual Methods</td>
<td>3</td>
</tr>
<tr>
<td>EDLT 2110</td>
<td>Integrating Technology with Teaching</td>
<td>3</td>
</tr>
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</table>

### Electives

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### Credits

Third Year: 16

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### Credits

Total Credits: 60
Electronic Publishing

Electronic Publishing - Associate of Applied Science (p. 131)

FDMA 1110. Film History
3 Credits (3)
This course surveys the history of cinema -investigating the process by which the original “cinema of attractions” evolved into a globally dominant form of visual storytelling. We will explore the development of cinema both as an art form and as an industry, and consider the technological, economic, cultural factors, and key international movements that shape it.

Learning Outcomes
1. Develop appreciation for the history of cinema.
2. Develop knowledge of the key eras in the history of US cinema.
3. Learn the characteristics of major movements in international cinema.
4. Explain technological innovations that were necessary for, and integral to, the advancement of cinema.
5. Recognize the various elements that go into telling a story in cinema.

FDMA 1120. Desktop Publishing
3 Credits (2+2P)
This course is designed to teach introductory skills for designing and creating publications and presentations with layout software. The course will focus on graphics and typographic design, fonts, and other skills for print and web publishing.

Learning Outcomes
1. Demonstrate knowledge of fundamental features and navigation of desktop publishing software.
2. Combine text and images for effective communication.
3. Develop a balanced composition through use of color, contrast, and alignment.
4. Place images within a composition and wrap around text.
5. Produce documents with professional layout and typography skills.
6. Create attractive and effective designs.
7. Combine knowledge of typography, images, and design principles to produce professional print and web media.
8. Create or add to a professional design portfolio for future use.

FDMA 1121. Digital Video Production I
3 Credits (2+4P)
An introduction to digital video production. Students learn camera operation, lights and audio equipment. Hands-on production is completed in the studio and on location.

Learning Outcomes
1. Plan and produce a digital video project
2. Apply post-production workflow
3. Work in team and as individual to complete digital video projects.

FDMA 120. Introduction to Digital Video Editing
3 Credits (3)
In this course, students learn the basics of the post-production process for non-linear video editing. Students work with multiple video formats and create short movies for multiple distribution platforms. Skills include media management and professional terminology. Sections on the Main Campus will be restricted to CMI students.

Learning Outcomes
1. Define concepts related to digital video editing.
2. Use non-linear video editing software for editing a short film
3. Enhance storytelling through the use of continuity, timing, cutaways, intercutting, compositing, transitioning, jump cutting, montaging and animating.
4. Use text, titles, transitions, video effects, sound effects, dialogue, and visual assets for digital video editing.

FDMA 1210. Introduction to Digital Video Editing
3 Credits (3)
This course provides an introduction to web development techniques, theory, and design. Students will learn HTML, CSS application, and strategies for effective site navigation and design, along with industry standard web editing software to develop various websites. May be repeated up to 12 credits. Restricted to Community Colleges campuses only.

Learning Outcomes
1. Describe and identify the principal components and terminology of digital media.
2. Analyze and examine the use of digital media as a communication tool
3. Plan and implement a digital media project
5. Create projects using a variety of digital media tools
6. Demonstrate a working knowledge of copyright and usage rights
7. Present completed projects in a professional manner for critique.

FDMA 1340. Web Design I
3 Credits (2+2P)
This course provides an introduction to website development techniques, theory, and design. Students will learn HTML, CSS application, and strategies for effective site navigation and design, along with industry standard web editing software to develop various websites. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.

Prerequisite(s): ARTS 1520 OR FDMA 1515.

Learning Outcomes
1. Acquire and utilize web design terminology.
2. Create basic web pages using HTML.
3. Demonstrate how to use industry-standard, web editing software.
4. Design professional pages that are easy to navigate and quick to load.
5. Develop a basic comprehension of CSS
6. Prepare and export a variety of graphics to be used online.
7. Compare and contrast designing for web media vs. print media.
8. Analyze the importance of web presence in today’s business/social climate
FDMA 1410. Audio Production I  
3 Credits (2+2P)  
Students will learn about and apply essential tools and techniques in analog and digital audio production. Topics include acoustic science, microphones, recording and mixing techniques, analog and digital audio hardware and software, including, multi-track, computer-based recording and editing systems. Restricted to: Community Colleges only.  
Prerequisite(s): FDMA 1210 and FDMA 2410.  
Learning Outcomes  
1. Apply tools and techniques in analog and digital audio production  
2. Illustrate the fundamentals of acoustic science.  
3. Model professional behavior used in audio recording.

FDMA 1415. Principles of Sound  
3 Credits (2+2P)  
The creation of a professional quality original media soundtrack is possible for relatively low production/post production cost. This class is designed to give the student an overview of creating sound for a variety of digital media. Topics include acoustic principles, sound design, audio hardware, recording techniques; and editing, processing, and multi-track mixing, using software applications. Restricted to: Community Colleges only.  
Prerequisite(s)/Corequisite(s): FDMA 1220.  
Learning Outcomes  
1. Record and edit wild sound effects and synced dialogue  
2. Discover, upload, and edit on-line music, ambience and sound effect loops  
3. Implement audio design theories  
4. Create an aesthetic soundtrack which incorporates multiple elements and dimensions  
5. Design, edit, process, mix and master a synced multi-track soundtrack  
6. Demonstrate capable use of digital audio production and post-production workflow  
7. Produce short audio projects which meet media industry technical standards

FDMA 1510. Introduction to 3D Animation  
3 Credits (3)  
This course provides an overview of 3D animation production processes. 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. Students will review and critique other’s animation, as well as plan and produce original animation for review by classmates and as part of a CGI demo reel.  
Prerequisite(s): FDMA 2382 or FDMA 2381 or consent of instructor.  
Learning Outcomes  
1. Demonstrate a fundamental understanding of 3D animation history and principles.  
2. Analyze animation work of other artists.  
3. Appropriately utilize the various media technologies for digital 3D animation.  
4. Demonstrate and apply basic techniques of digital 3D animation.  
5. Demonstrate and apply basic processes of creating CGI for a narrative.  
6. Apply some basic strategies for developing and creating a story visually, and create original animations.  
7. Present original animations to instructor and classmates for critique.  
8. Create a CGI demo reel of work completed during the course.

FDMA 1515. Introduction to Digital Image Editing - Photoshop  
3 Credits (2+2P)  
In this course, students will learn how to use the tools in Adobe Photoshop to create new images and edit existing images. Tools used will include selections, layers, and adjustments, among other pixel editing tools. Basic composition and output will be emphasized in all projects. May be repeated for a maximum of 6 credits.  
Learning Outcomes  
1. Make and refine selections  
2. Adjust color and tone in an image  
3. Eliminate unwanted objects in an image  
4. Apply layers to organize and create effects  
5. Create brushes, styles and vector shapes  
6. Prepare image for print and screen output  
7. Apply masking and layers to non-destructively edit an image  
8. Effectively utilize blending modes and layer styles  
9. 1 Apply adjustment layers  
10. 1 Apply design principles including typography

FDMA 1531. Evolution of Electronic Games  
3 Credits (2+2P)  
Focus on the evolution of video games and how they have shaped mainstream entertainment. May be repeated up to 6 credits.
FDMA 1535. Introduction to Illustrator  
3 Credits (2+2P)  
Students receive instruction on vector graphics creation using vector illustration software. The students will create professional-quality artwork for print publishing and multimedia graphics. Instruction includes creating and manipulating basic shapes, drawing with the pen tool, using various brushes, working with type and preparing graphics for web, print, and digital publication. May be repeated for a maximum of 6 credits.  
**Learning Outcomes**  
1. Apply a variety of shape blending options  
2. Create and apply new gradients  
3. Apply Gradient Meshes and Envelopes  
4. Create symbols, brushes and vector shapes  
5. Apply Pathfinder and other effects  
6. Effectively utilize the pen tool to draw and edit shapes  
7. Effectively utilize Vector tools  
8. Prepare image for print and screen output  
9. Apply clipping masks  
10. Prepare image for use in another program  
11. Apply design principles including typography  

FDMA 1536. Advanced Computer Illustration  
3 Credits (2+2P)  
Advanced techniques in 2D vector drawing and fundamentals of 3D illustration for use in print, web, and multimedia applications. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.  
**Prerequisite(s):** FDMA 1535.  
**Learning Outcomes**  
1. Demonstrate proficiency in using advanced features of Illustrator.  
2. Identify and create different illustrator/art styles using advanced techniques for shading, perspective, light, reflection.  
3. Produce high quality digital imagery incorporating basic principles of composition.  
4. Create a series of illustrations demonstrating a design competency in layout foundation and illustrative moods or client/project based solutions.  
5. Create high quality portfolio pieces that demonstrate an advanced knowledge of design, composition and Illustrator techniques.  
6. The students will produce finished printed portfolio pieces demonstrating a comprehensive knowledge of typographical, design, illustrative and layout skills  

FDMA 1545. Introduction to Photography & Digital Imaging  
3 Credits (2+2P)  
This course is a study of the principles and techniques of photography using digital equipment, and discusses how digital cameras, imaging editing, and technology have changed the world of photography. Students will learn about studies in resolution, lighting, software, editing, printing, and web applications. They will gain fundamental knowledge in the rapidly expanding technology of photography and imaging, and be able to incorporate the knowledge into all areas of digital graphics.  
**Learning Outcomes**  
1. Exhibit proper usage of the principles and techniques of photography using digital equipment.  
2. Utilize features and techniques of a digital camera with proper use of lenses, settings, and flashes.  
3. Create photo collections that represent proper use of technical skills.  
4. Demonstrate proficiency in planning, lighting, capturing, and distributing photographic projects which show ability to create photographs artistically and to tell a story or express an idea.  
5. Utilize appropriate software to create original projects.  
6. Demonstrate knowledge in post-production of photos as to sizing, sampling, resolution, and exporting.  
7. Produce original projects which respect intellectual property of others.  
8. Create a digital portfolio of work completed during the course.  

FDMA 1555. Introduction to the Creative Media Industry  
3 Credits (3)  
This class is an introductory course for students who are beginning their understanding of Media and how it affects them and our society. It offers a broad-stroked view of the entire industry including Marketing, Production, History, Jobs, Design, Architecture, New Media Literacy, and industry standards. Students will listen to experts in the field, get involved in open discussions about the industry and use new information to complete hands-on individual & group assignments.  
**Learning Outcomes**  
1. The basic philosophies and methods that guide people working in the Creative Media industry.  
2. Knowledge of a wide variety of different jobs, qualifications and paradigms used in the industry.  
3. Marketing, Production, Budgets, History, New Media, Inspiration and other aspects of the industry.  
4. An accurate view of the Creative Media field.
FDMA 1630. Principles of Design  
3 Credits (2+2P)  
This course will explore how we see and use visuals to communicate information. Students will develop critical thinking skills in applying concepts of basic design principles. Students will apply the concepts with hands-on and analysis assignments. These concepts will then be applied to design for advertising, print, digital media, and web design. The business of design will also be covered with emphasis on client relations and networking. Restricted to: Community Colleges only. Prerequisite(s): FDMA 1535  
**Learning Outcomes**  
1. Practice Creativity  
2. Plan a Design project  
3. Demonstrate the effective use of Emphasis Contrast  
4. Demonstrate the effective use of Balance and Alignment  
5. Demonstrate the effective use of Harmony and Repetition  
6. Demonstrate the effective use of Flow, Movement, and Rhythm  
7. Demonstrate the effective use of Simplicity and Economy  
8. Effectively apply basic color theory  
9. Demonstrate the effective use of Typography principles  
10. Apply design principles to Screen Print Projects  
11. Develop client relations  

FDMA 1710. 2D Animation  
3 Credits (2+2P)  
Concepts and techniques in storyboard and creating interactive 2D animations for web, multimedia and video. Prerequisite(s): FDMA 1535.  
**Learning Outcomes**  
1. Be able to correctly storyboard an animation scene  
2. Define and demonstrate basic animation terminology and principles  
3. Produce a complete hand drawn animation using industry standard software and processes.  

FDMA 1715. 2-D COMPOSING & FX  
3 Credits (3)  
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. Restricted to Las Cruces campus only.  
**Learning Outcomes**  
1. The goal of this class is for students to learn how to use advanced compositing and effects tools in order to achieve a more dynamic and professional visual look for their animations or motion graphics.  
2. By the end of the class, you should be proficient animation compositors that can assemble and  
3. Synthesize a basic animation into a rendered, visually sophisticated piece.  
4. Students who pass this class will have a basic to intermediate knowledge of Adobe After Effects  

FDMA 1720. 3-D Character Design  
3 Credits (2+4P)  
Focus on designing a character and then taking that design and building it in 3D using intermediate modeling techniques. May be repeated for a maximum of 6 credits. Prerequisite(s): FDMA 1510 or FDMA 2530.  
**Learning Outcomes**  
1. Translate concept art into a low and high resolution 3D model using proper modeling techniques  
2. Use Polygon modeling techniques to create a 3D character  
3. Layout UVs and utilize Adobe Photoshop to texture a model.  

FDMA 1996. Selected Topics  
1-4 Credits (1-4)  
Specific titles to be announced in the Schedule of Classes. May be repeated for a maximum of 18 credits. Restricted to Community Colleges campuses only.  
**Learning Outcomes**  
1. Varies  

FDMA 2111. Environmental Scene Design  
3 Credits (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(s): FDMA 1510 or FDMA 2530.  

FDMA 2120. Film Crew I/Introduction to Film and Media Workflow  
9 Credits (9)  
An introduction to the film industry. This class teaches film production processes, film crew hierarchy, film production set-safety and etiquette and provides hands-on training in industry standard film production equipment. Students complete the semester by participating as a below-the-line crew member on a short film. Restricted to: Community Colleges only.  
**Learning Outcomes**  
1. Explain film production processes; Interpret call sheets and deal memos, model basic on-set protocols and professional behavior  
2. Assist producers and directors in completing a professional film project  
3. Work effectively in production crew positions in a group environment.  
4. Recognize and articulate specific film production structure, from original concept to final release  

FDMA 2125. Film Crew II  
9 Credits (9)  
The second course designed to train students to become working members of film crews. It will be taught by working film professionals. Content will be lecture and hands-on. Students complete the semester by working as part of an actual film crew as below-the-line and above-the-line crew members. Restricted to: Community Colleges only. Prerequisite(s): FDMA 2120.  
**Learning Outcomes**  
1. Understand film production processes used to produce a film  
2. Manage craft area job functions  
3. Model on-set protocols and professional behaviors  
4. Assist producers and directors in completing a professional film project
FDMA 2150. Desktop Publishing II
3 Credits (2+2P)
This class will enhance and build upon student layout/design skills developed in the Introduction to Desktop Publishing course, incorporating intermediate to advanced concepts in typography and layout design. Upon completion of this course, students will be able to use page layout software to prepare a variety of documents for presentation and critique, including newsletters, instructional flyers, and other complex design/typographic pieces. May be repeated for a maximum of 6 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): FDMA 1120.
Learning Outcomes
1. Build upon knowledge of design and design terminology.
2. Exhibit intermediate to advanced design principles using type, layout, and color.
3. Demonstrate skill in intermediate to advanced concepts and features of page layout software.
4. Exhibit knowledge of styles, tables, images and clipping paths and interactive documents as well as printing preparations and procedures.
5. Create layouts for print, web, and other media that demonstrate an intermediate to advanced knowledge in typography and layout design.
6. Format and produce newsletters and instructional flyers, as well as larger, complex projects such as packaging mechanicals, multiple master page documents, and books.
7. Assess works of graphic design for quality and effectiveness.
8. Utilize produced material to create or add to a design portfolio for future use.

FDMA 2210. Digital Video Production II
3 Credits (2+2P)
Advanced techniques of the tools and application of professional film making. May be repeated for a maximum of 6 credits.
Prerequisite: FDMA 1210.
Learning Outcomes
1. Demonstrate the ability to produce and manage a video project: Produce a script, storyboard, and production schedule for a video project designed for a specific audience.
2. Demonstrate proficiency in producing quality digital video footage and audio tracks: Shoot to the script and storyboard using a variety of camera and lighting techniques; Produce a finished complex sound track including narration, music, and sound effect.
3. Demonstrate ability to produce and edit a professional quality video project: Integrate all production aspects of the project including video, audio, graphics, titles, transitions, and effects. Guide the project through the final production stages.
4. Develop competency in digital video distribution using various formats and techniques: Distribute project in various formats which could include DVD and web posting.

FDMA 2241. Advanced Camera Techniques
3 Credits (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(s): FDMA 1210.
Learning Outcomes
1. Students knowledge of high-end video camera operation and features.
2. Students must know all the working features of the video production equipment being used during the course in order to achieve the desired footage as required by the instructor.
3. Demonstrate proficiency in producing quality digital video footage.
4. Individuals must acquire the knowledge of different shooting styles in different productions situations and use those acquired skills to produce the appropriate video footage.
5. Using the proper lighting in different location shooting styles.
6. Skill of each individual utilizing the usage of high-end camera equipment such as dollies, cranes and Steadicam.
7. Each individual must work as a team player to create professional style video footage.

FDMA 2285. Digital Video Production and Editing II
3 Credits (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. Restricted to Community Colleges campuses only. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): FDMA 1220.
Learning Outcomes
1. Intermediate to advanced video editing create short films and training videos, create TV quality commercials, direct a news broadcast, and work as a mentor to students on digital media equipment

FDMA 2287. Digital Design Studio
1-3 Credits
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. May be repeated for a maximum of 6 credits.
Prerequisite(s): FDMA 1630 or ARTS 1712.
Learning Outcomes
1. Demonstrate competency in the use of InDesign software.
2. Create appropriate visual solutions based on target marketing information.
3. Demonstrate competency in the design and production of advertising and promotional materials.
4. Present ideas and concepts effectively and competently.
5. Visually demonstrate design solutions to be used in a portfolio.
FDMA 2310. History of Cinema I
3 Credits (3)
This course surveys the history of cinema - investigating the process by which the original "cinema of attractions" evolved into a globally dominant form of visual storytelling. We will explore the development of cinema both as an art form and as an industry, and consider the technological, economic, cultural factors, as well as many key international movements that helped shape it. Restricted to: G-CMI, DFM, ANVE majors.
Learning Outcomes
1. Gain a greater appreciation for the history of cinema
2. Develop knowledge of the key eras in the history of U.S. cinema
3. Learn the characteristics of major movements in international cinema
4. Understand the various elements that go into telling a story in cinema: screenplay, narrative devices, director, producer, talent, production design, cinematography, editing, sound design
5. Learn how major genres in U.S. cinema have evolved in the past 100+ years
6. Gain a basic understanding of the operations and organization of the Hollywood film industry, from the studio system until today
7. Gain an awareness of the shifts in the film industry that present new opportunities for independent filmmakers
8. Understand the importance of learning about the history of cinema to the process of becoming a filmmaker
9. Strengthen public speaking skills

FDMA 2311. History of Animation
3 Credits (3)
Explores the history of Animation as an art form and industry through readings, screenings, lecture and periodic guest speakers. Restricted to: G-CMI, ANVE, DFM majors. Restricted to Las Cruces campus only.
Learning Outcomes
1. To expand your knowledge of the history of animation and its evolution to the modern day.
2. To expand your ability to view animation critically and to understand its early connections to cartooning as well as its ongoing cultural presence and relevance.
3. To expand your comfort with accessing information and completing assignments both online and independently. Canvas will be utilized for many of our readings and for some response assignments.

FDMA 2312. History of Media Design
3 Credits (3)
An introduction to the principles of design history and theory within a chronological framework of historical and emerging media.
Learning Outcomes
1. Introduction to visual communication: Defines design media; Discuss universal design principles and strengthen student basic design skills.
2. Historical technological development and design: Prehistoric communication; Beginnings of alphabet and written language; Movable type and the printing press; Industrial revolution; Digital Age; Designers and Trends; Personalities and their influence and contributions
3. Identify design styles and discuss the relevance of how design influences: Idea generation; Trend sources; Influences or appropriation; Propaganda and advertising.

FDMA 2325. Advanced Photoshop
3 Credits (2+2P)
This course expands on the Photoshop skill set to develop proficiency with selections, masking, channels, filters, color correction, painting tools, vector integration, video, special effects, and compositing techniques. The focus is on the core image-editing tools of Photoshop that can be universally applied to photography, print, film or the web. The material is covered in production-oriented projects and students develop work suitable for portfolios. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): FDMA 1515.
Learning Outcomes
1. Create effects using advanced blending techniques
2. Effectively utilize advanced masking techniques
3. Refine Selections with advanced techniques
4. Assess Adjust color in an image
5. Utilize advanced photo enhancement techniques
6. Alter images using Photoshop painting techniques
7. Create brush presets
8. Create vector elements with paths
9. 1Add manipulate type on a path
10. 1Create advanced special effects
11. 1Apply vanishing point warping
12. 1Create a video clip
13. 1Apply color adjustments to video

FDMA 2326. Digital Photography and Imaging II
3 Credits (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. Restricted to: Alamogordo campus, Carlsbad campus, Dona Ana campus.
Prerequisite(s): FDMA 1545.
Learning Outcomes
1. Apply proper exposure techniques.
2. Practice effective composition techniques.
3. Demonstrate knowledge of working with Camera RAW files.
4. Demonstrate proper image adjustment and correction techniques.
5. Successfully apply the basics of HDR digital photography.
6. Apply techniques for modifying light.
FDMA 2360. Web Design II
3 Credits (2+2P)
In this course, students will refine their skills in coding and web graphic design as well as be introduced to methods in constructing sites that adhere to the standards of responsive web design. Students will expand their knowledge of HTML and CSS using a code editor, and they will both analyze existing websites and also construct an interactive website. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): FDMA 1360.
Learning Outcomes
1. Plan and produce web design mockups.
2. Demonstrate a proficiency in HTML/CSS coding.
3. Integrate animation into web design.
4. Create fully functional websites using one or more web editors.
5. Make a website "live."
6. Evaluate web designs for aesthetics and functionality.
7. Demonstrate the utilization of responsive design.
8. Validate webpage code.

FDMA 2365. Web Design for Small Business
3 Credits (2+2P)
Technology and techniques for designing and building a web presence for small business. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): FDMA 1360.
Learning Outcomes
1. Learning advanced tools and techniques for creating and maintaining complex Business web sites. We will be using CSS, PHP, HTML, Photoshop, and Wordpress.
2. design a complete and fully functional online web business.
3. understand and develop a plan to better manage a web store/business.
4. review basic design guidelines in preparing a variety of web applications for business.
5. develop technical skills in using various web based solutions.
6. reinforce your knowledge of web design software.
7. introduce alternate sources of data, communication and financial solutions.

FDMA 2370. Advanced Web Techniques
3 Credits (2+2P)
Creating and managing complex web sites using advanced techniques and tools. May be repeated for a maximum of 6 credits. Restricted to Community Colleges only.
Prerequisite(s): FDMA 1515 and FDMA 2360.
Learning Outcomes
1. Create webpages using Hypertext Markup Language (HTML) elements and tags
2. Format webpages using Cascading Style Sheets (CSS)
3. Validate webpage code
4. Apply industry-standard webpage design and organization principles
5. Publish a website

FDMA 2381. Storyboarding
3 Credits (3)
Examines effective writing principles to create storyboards that communicate the overall picture of a project, timing, scene complexity, emotion and resource requirements. Further, the purpose of this course is to introduce students to the principles of visual storytelling—in film—through the use of the storyboard. In other words, to show how storyboards are critical “architectural component” of the filmmaking process, used as a blueprint (or guide) to communicate the complex elements of a film story. Crosslisted with: ENGL 2381. Restricted to DFM, ANVE, G-CMI majors. Restricted to Las Cruces campus only.
Learning Outcomes
1. Learn to conceive and draw original images.
2. Learn to use images to tell a story.
3. Design, develop, and order images (shots) into storyboarded scenes.
4. Understand how storyboarded sequences are a tool in the process of filmmaking.
5. Understand how the storyboard image is translated from the written page.
6. Build scenes from the scripted sequences into a storyboard.

FDMA 2382. Principles of Story Across the Media
3 Credits (3)
The purpose of this course is to help students understand the basic elements of narrative structure (e.g. character, dramatic conflict, theme, etc.) and how these elements may be used effectively in media expression. Crosslisted with: ENGL 2382. Restricted to: DFM, G-CMI, ANVE majors. Restricted to Las Cruces campus only.
Learning Outcomes
1. Identify the elements of storytelling in scripted text or improvised performance
2. Understand how these elements work together across different media
3. Apply these elements of storytelling in original work
4. Appreciate and master these elements for independent or collaborative work

FDMA 2410. Audio Production II
3 Credits (2+2P)
Students will use skills developed in the Audio Production I course to produce audio projects utilizing a variety of analog and digital audio hardware and software, including continued use of multi-track, computer-based recording and editing systems, as well as exploring more advanced audio techniques and concepts. Restricted to: Community Colleges only.
Learning Outcomes
1. Apply analog and digital audio hardware and software in audio recording.
2. Apply common professional set-up practices of audio production facilities.
3. Produce audio projects, sync sound recordings, and audio dialogue replacement (ADR) demonstrating technical expertise.
4. Perform an audio mix and master for a final professional product.
5. Analyze and compare existing audio productions for quality.
FDMA 2510. Introduction to Sound Design for Film  
3 Credits (3)  
This course is an introduction to the principles, techniques and applications of sound design and film scoring. Students learn how sound affects storytelling in a film, examine the role of sound from the script to screen, and the professional process of creating a soundtrack. Students learn how to use sound equipment in a production environment and execute basic techniques used to develop a soundtrack. Crosslisted with: FDMA 1415.  
Prerequisite(s)/Corequisite(s): FDMA 2382. Restricted to: DFM,ANVE majors. Restricted to Las Cruces campus only.  
Learning Outcomes  
1. Compare the properties and propagation of sound and importance of sound to the storytelling aspect of filmmaking  
2. Learn the process of designing a soundtrack for film and recording live audio dialogue for use in post-production editing.  
3. Learn methods of capturing sound including live audio recording, dialogue recording, foley, orchestration and audio dialogue replacement  
4. Design a soundtrack for motion media project.

FDMA 2520. Introduction to Cinematography  
3 Credits (3)  
The Director of Photography (or Cinematographer), in close collaboration with the Director and Production Designer, determines the look of a film. This course is designed to introduce students to the technical and aesthetic fundamentals of creating, developing, and collaborating on the visual elements of storytelling, using camera framing, lensing, and lighting fundamentals such as shadows, light and color. May be repeated up to 6 credits. only. Prerequisite(s)/Corequisite(s): FDMA 2382 (Las Cruces Campus) or FDMA 1210 (Community College Campus(es)  
Learning Outcomes  
1. Define and explain the fundamental concepts of cinematography, such as exposure, lighting solutions, and color temperature.  
2. Understand how cinematography brings the Director’s vision to reality.  
3. Demonstrate proficiency in plotting and executing interior and exterior lighting solutions.

FDMA 2530. Introduction to 3D Modeling  
3 Credits (3)  
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. May be repeated for a maximum of 6 credits.  
Learning Outcomes  
1. Identify the role of a 3D modeler in a production pipeline within various fields of digital animation.  
2. Apply techniques in modeling mechanical and organic objects.  
3. Utilize tools available in professional 3D modeling software.  
4. Create simple animations and renders.  
5. Present original animations to instructor and classmates for critique.  
6. Create a demo reel of work completed during the course.

FDMA 2535. Digital Illustration  
3 Credits (3)  
Introductory course examining traditional artistic expressions and translating visual art experiences into a digital art medium to enhance visual storytelling. Students acquire basic principles of drawing and painting through hands-on experience manipulating tonal value, composition, form development, light and shadow, color theory, rendering realism, and graphic design. Restricted to: DFM,ANVE majors. Restricted to Las Cruces campus only.  
Learning Outcomes  
1. Be familiar with the CMI computer system, facilities, equipment and policies.  
2. Appropriately utilize the various media technologies available at CMI for digital illustration.  
3. Understand the different roles and areas of digital illustration.  
4. Understand and apply some basic techniques of digital illustration.  
5. Understand and apply some basic processes of creating pleasing images based on knowledge of traditional art principles.  
6. Begin to apply some basic strategies for developing and creating aesthetically pleasing images.

FDMA 2570. Creative Media Studio  
3 Credits (2+2P)  
A studio environment where students specialize in creating film-festival quality and portfolio-ready projects under the supervision of faculty. May be repeated for a maximum of 6 credits.  
Prerequisite(s): FDMA 1210 and FDMA 1220 or FDMA 2530.  
Learning Outcomes  
1. Students will work together to create portfolio-quality work in a studio environment.  
2. Through classroom discussion and reporting the students will collaborate to produce a professional quality "vertical slice" game concept within a defined timeline and financial budget.

FDMA 2575. Digital Illustration  
3 Credits (3)  
Introductory course examining traditional artistic expressions and translating visual art experiences into a digital art medium to enhance visual storytelling. Students acquire basic principles of drawing and painting through hands-on experience manipulating tonal value, composition, form development, light and shadow, color theory, rendering realism, and graphic design. Restricted to: DFM,ANVE majors. Restricted to Las Cruces campus only.  
Learning Outcomes  
1. Be familiar with the CMI computer system, facilities, equipment and policies.  
2. Appropriately utilize the various media technologies available at CMI for digital illustration.  
3. Understand the different roles and areas of digital illustration.  
4. Understand and apply some basic techniques of digital illustration.  
5. Understand and apply some basic processes of creating pleasing images based on knowledge of traditional art principles.  
6. Begin to apply some basic strategies for developing and creating aesthetically pleasing images.

FDMA 2710. Beginning 2-D Animation  
3 Credits (3)  
Students will learn the basics of digital 2D animation by working through a variety of exercises, creating an original storyboard, and animating five or more shots utilizing industry standard software. Restricted to: DFM,ANVE majors. Restricted to Las Cruces campus only.  
Learning Outcomes  
1. The student will demonstrate an overall knowledge of computers as a tool of the animation artist and be able to produce simple animations using the techniques learned in class.  
2. Use major software tools with ease.  
3. Manage time lines through key frames.  
4. Build storyboards.  
5. Demonstrate knowledge of 2-D and animation terminology.  
6. Produce actions, set environments and constraints for 2-D animation.  
7. Render full animation.

FDMA 2715. Special Effects  
3 Credits (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(s): FDMA 2530 or FDMA 2765.
FDMA 2720. 3-D Animation
3 Credits (3)
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): FDMA 1510, FDMA 2710 or consent of instructor.
Learning Outcomes
1. Clearly describe the role of an animator in cinema, gaming and related fields.
2. Recognize leading animators and their methods.
3. Demonstrate knowledge of advances in contemporary animation.
4. Utilize current industry standard animation tools.
5. Apply fundamental animation processes and techniques

FDMA 2725. Rigging for 3D Animation
3 Credits (3)
This course will introduce principles and practices of current 3D animation rigging. 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, body and facial rigging. Restricted to: DFM, ANVE majors.
Prerequisite(s): FDMA 1510.
Learning Outcomes
1. Understand what Rigging is and the role it plays in the world of cinema and video games.
2. Be familiar with industry professionals and their techniques and approaches to rigging.
3. Understand and be able to apply the fundamentals of rigging to industry standard applications.
4. Demonstrate ability to rig basic to intermediate machines, bipeds and quadrupeds

FDMA 2730. Advanced Character Animation
3 Credits (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. Restricted to: Community Colleges only.
Prerequisite(s): FDMA 2530.
Learning Outcomes
1. Create skeletal riggings for use with a 3D model
2. Attach riggings to a 3D model using Smooth and rigid binding and refine the bindings so that they are properly weighted
3. Animate a 3D model using skeletal and vertex animation techniques

FDMA 2735. Advanced 3D Animation Workshop A
3 Credits (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. May be repeated for a maximum of 9 credits. Consent of instructor required.
Corequisite(s): FDMA 2740.
Learning Outcomes
1. Define the duties and skills sets required for a career in 3D Modeling.
2. Understand the Maya interface, the uses for all of the major modes and menus of the interface and be able to describe how to access the tools, actions and the options of those tools and actions.
3. Complete and compile a multi shot animated short.

FDMA 2740. Advanced 3D Animation Workshop B
3 Credits (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. May be repeated for a maximum of 9 credits. Consent of instructor is required.
Corequisite(s): FDMA 2735.
Learning Outcomes
1. Define the duties and skills sets required for a career in 3D Modeling.
2. Understand the Maya interface, the uses for all of the major modes and menus of the interface and be able to describe how to access the tools, actions and the options of those tools and actions.
3. Complete and compile a multi shot animated short.

FDMA 2745. Light, Shade, Render
3 Credits (3)
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. Restricted to: DFM, ANVE majors. Restricted to Las Cruces campus only.
Prerequisite(s): FDMA 1510, FDMA 2530, or Consent of Instructor.
Learning Outcomes
1. Understand the role of lighting and surfacing to tell a story.
2. Be familiar with leading lighting artist and their approaches.
3. Utilize the software implemented in the entertainment industry.
4. Understand and apply fundamental lighting and rendering techniques.
5. Demonstrate ability to create successfully rendered scenes from concept through production.
FDMA 2750. Digital Sculpting
3 Credits (3)
Introduce students to the 3D Sculpting programs which are the industry standard sculpting programs. Students will learn how to create complex high polygon sculpts and normal maps and transfer the models into 3D studio Max and Autodesk Maya. May be repeated up to 6 credits. Restricted to: Community Colleges only.
Prerequisite(s): FDMA 2530.
Learning Outcomes
1. Demonstrate communication skills through written critiques and explanations
2. Students will demonstrate visual communication skills through critiques, written explanations, and storyboarding
3. Demonstrate a working knowledge of Zbrush's interface
4. Demonstrate a working knowledge of Zpheres and how they are best used to create sculpts
5. Demonstrate a working knowledge of painting a mesh using Spotlight
6. Demonstrate a working knowledge of retopologizing and exporting the mesh
7. Demonstrate a working knowledge of integrating the full Zbrush pipeline into Unity and Unreal

FDMA 2755. Drawing for Animation
3 Credits (3)
Introductory study of the human and animal form in relation to animation. Students learn fundamentals and exaggeration of the figure, as related to proportion, rhythm, mechanics, and motion. Areas of focus are: basic form, proportion, shape, contour, gesture, anatomy, portraiture, perspective, clothing effects and drawing from observation. Restricted to: CMT, DFM, ANVE majors.
Learning Outcomes
1. Students will have an opportunity to gain hands on experience using industry standard state of the art animation software.
2. Understand what the basics of drawing the human form.
3. Have a general understanding of human anatomy as needed for the artist.
4. Be able to design the human form from imagination.

FDMA 2770. Critical Game Studies
3 Credits (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. Restricted to: Community Colleges only.

FDMA 2775. Game Tools and Techniques
3 Credits (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(s): FDMA 2770.
Learning Outcomes
1. Students will develop rapid prototyping techniques.
2. Through classroom exercises the students will gain competency in industry-standard game creation engines and tools, and learn to work together in groups to create rapid prototypes.
3. This includes creating art, sound and music, and creating basic scripts within an engine.

FDMA 2785. Level Design Concepts
3 Credits (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(s): FDMA 2770
Learning Outcomes
1. Students will develop level design skills.
2. Through classroom exercises the students will gain a comfortable competency with designing levels both on paper and digitally.
3. This includes creating first person shooter levels, third person levels, multiplayer level design, and more.

FDMA 2993. Workshops (Advanced Photography)
1 Credit (1)
This is a series of 1-credit workshops offering specialized and intense advanced skill training and upgrading applications of photography for commercial purposes and training in photographic skills and styles presented by a variety of professional lecturers. May be repeated up to 7 credits. Restricted to Community Colleges only.
Prerequisite(s): FDMA 1545.
Learning Outcomes
1. Varies

FDMA 2994. Portfolio Design & Development
1-3 Credits
Personalized design and creation of the student's professional portfolio including hard-copy, demo reel, and online. May be repeated up to 6 credits. Consent of Instructor required. Restricted to Community Colleges campuses only.
Learning Outcomes
1. Varies

FDMA 2995. Film Crew Cooperative Experience
3-6 Credits (3-6)
Industry production experience in specific craft areas for film crew technicians who have successfully completed two semesters of FTTP. Restricted to: Dona Ana campus, Carlsbad campus.
Prerequisite(s): FDMA 2125.
Learning Outcomes
1. Varies

FDMA 2996. Special Topics
1-4 Credits
Specific topics to be announced in the Schedule of Classes. May be repeated for a maximum of 18 credits.
Learning Outcomes
1. Varies

FDMA 2997. Independent Study
1-3 Credits
Individual studies directed by consenting faculty with prior approval of department head. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): Minimum GPA of 3.0 and sophomore standing.
Learning Outcomes
1. Varies
Electronic Publishing - Associate of Applied Science

60 credits

The Associate of Applied Science in Electronic Publishing will prepare students for positions in advertising and marketing areas. Students will have a working knowledge of design principles for print media, illustrations and images used in marketing products.

Students must complete all University degree requirements, which include: General Education requirements and elective credits to total at least 60 credits. Developmental coursework will not count towards the degree requirements and/or elective credits, but may be needed in order to take the necessary English and Mathematics coursework. New Mexico General Education Requirements

Prefix Title Credits

General Education
Select one course from four of the following six content areas for a total of 12-14 credits 1,2

Area I: Communications
ENGL 1110G Composition I

Area III: Laboratory Sciences
Select one from the following:
ASTR 1115G Introduction Astro (lec+Lab)
ASTR 1120G The Planets
BIOL 1120G Human Biology
& BIOL 1120L and Human Biology Laboratory
BIOL 1190G Contemporary Problems in Biology
BIOL 2610G Principles of Biology: Biodiversity, Ecology, and Evolution
& BIOL 2610L and Principles of Biology: Biodiversity, Ecology, and Evolution Laboratory
C S 171G Introduction to Computer Science
CHEM 1120G Introduction to Chemistry Lecture and Laboratory (non majors)
ENVS 1110G Environmental Science I
GEOG 1110G Physical Geography
GEOL 1110G Physical Geology
PHYS 1115G Survey of Physics with Lab

FDMA 2998. Internship
1-3 Credits
Work experience that directly relates to a student’s major field of study that provides the student an opportunity to explore career paths and apply knowledge and theory learned in the classroom. Internships may be paid or unpaid. Students are supervised/evaluated by both the employer and the instructor. May be repeated up to 9 credits. Consent of Instructor required. Graded: S/U Grading (S/U, Audit). Restricted to Community Colleges campuses only. Consent of instructor required.

Learning Outcomes
1. Varies

Program Manager: Sarah Johnson
Office: McClure Hall, Room 301
Email: sjohns10@nmsu.edu
Phone: (505) 287-6656

Area I: Communications
ENGL 1110G Composition I

Area III: Laboratory Sciences
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ASTR 1115G Introduction Astro (lec+Lab)
ASTR 1120G The Planets
BIOL 1120G Human Biology
& BIOL 1120L and Human Biology Laboratory
BIOL 1190G Contemporary Problems in Biology
BIOL 2610G Principles of Biology: Biodiversity, Ecology, and Evolution
& BIOL 2610L and Principles of Biology: Biodiversity, Ecology, and Evolution Laboratory
C S 171G Introduction to Computer Science
CHEM 1120G Introduction to Chemistry Lecture and Laboratory (non majors)
ENVS 1110G Environmental Science I
GEOG 1110G Physical Geography
GEOL 1110G Physical Geology
PHYS 1115G Survey of Physics with Lab

FDMA 2998. Internship
1-3 Credits

FDMA 1515 Introduction to Digital Image Editing - Photoshop
3

FDMA 1535 Introduction to Illustrator
3

FDMA 1630 Principles of Design
3

FDMA 2998 Internship
3

FDMA 2994 Portfolio Design & Development
3

OECS 280 Desktop Publishing I
3

Select a minimum of 13 credits from the following:

ARTS, C S, FDMA, ENGL, MATH, OECS

A Suggested Plan of Study

This roadmap assumes student placement in MATH 1215 Intermediate Algebra and ENGL 1110G Composition I. The contents and order of this roadmap may vary depending on initial student placement in mathematics and English. It is only a suggested plan of study for students and is not intended as a contract. Course availability may vary from fall to spring semester and may be subject to modification or change.

Course Title Credits
First Year

Fall
OECS 105 Introduction to Information Technology 3
FDMA 1260 Introduction to Digital Media 3
FDMA 1535 Introduction to Illustrator 3
FDMA 1515 Introduction to Digital Image Editing - Photoshop 3
OECS 105 Intermediate Algebra 3
OECS 118 Mathematics for Technicians 3

Select a minimum of 13 credits from the following:

ARTS, C S, FDMA, ENGL, MATH, OECS

Total Credits 60

1 Each course selected must be from a different area and students cannot take multiple courses in the same area.

2 See the General Education section of the catalog for a full list of courses.

A Suggested Plan of Study

This roadmap assumes student placement in MATH 1215 Intermediate Algebra and ENGL 1110G Composition I. The contents and order of this roadmap may vary depending on initial student placement in mathematics and English. It is only a suggested plan of study for students and is not intended as a contract. Course availability may vary from fall to spring semester and may be subject to modification or change.

Course Title Credits
First Year

Fall
OECS 105 Introduction to Information Technology 3
FDMA 1260 Introduction to Digital Media 3
FDMA 1535 Introduction to Illustrator 3
FDMA 1515 Introduction to Digital Image Editing - Photoshop 3
OECS 105 Intermediate Algebra 3
OECS 118 Mathematics for Technicians 3

Select a minimum of 13 credits from the following:

ARTS, C S, FDMA, ENGL, MATH, OECS

Total Credits 60

1 Each course selected must be from a different area and students cannot take multiple courses in the same area.

2 See the General Education section of the catalog for a full list of courses.
Energy Technology - Certificate

This Certificate was developed in response to a local employer’s workforce needs. Outcomes include: learning the basic components, function, and role of the electric energy industry in the United States; learning the essentials of electromagnetic theory; understanding the basic units of electrical measurement and correctly calculate formulas; safely apply problem-solving strategies in a practical laboratory setting; and work cooperatively in a classroom and laboratory setting.

16-17 Credits

The Energy Technology Certificate provides basic knowledge and skills to help prepare individuals for entry level employment in the electrical generating, transmission, and distribution industry.
FDMA 1110. Film History
3 Credits (3)
This course surveys the history of cinema -investigating the process by which the original “cinema of attractions” evolved into a globally dominant form of visual storytelling. We will explore the development of cinema both as an art form and as an industry, and consider the technological, economic, cultural factors, and key international movements that shape it.

**Learning Outcomes**
1. Develop appreciation for the history of cinema.
2. Develop knowledge of the key eras in the history of US cinema.
3. Learn the characteristics of major movements in international cinema.
4. Explain technological innovations that were necessary for, and integral to, the advancement of cinema.
5. Recognize the various elements that go into telling a story in cinema.

FDMA 1120. Desktop Publishing
3 Credits (2+2P)
This course is designed to teach introductory skills for designing and creating publications and presentations with layout software. The course will focus on graphics and typographic design, fonts, and other skills for print and web publishing.

**Learning Outcomes**
1. Demonstrate knowledge of fundamental features and navigation of desktop publishing software.
2. Combine text and images for effective communication.
3. Develop a balanced composition through use of color, contrast, and alignment.
4. Place images within a composition and wrap around text.
5. Produce documents with professional layout and typography skills.
6. Create attractive and effective designs.
7. Combine knowledge of typography, images, and design principles to produce professional print and web media.
8. Create or add to a professional design portfolio for future use.

FDMA 1210. Digital Video Production I
3 Credits (2+4P)
An introduction to digital video production. Students learn camera operation, lights and audio equipment. Hands-on production is completed in the studio and on location.

**Learning Outcomes**
1. Plan and produce a digital video project
2. Apply post-production workflow
3. Work in team and as individual to complete digital video projects.

FDMA 1220. Introduction to Digital Video Editing
3 Credits (3)
In this course, students learn the basics of the post-production process for non-linear video editing. Students work with multiple video formats and create short movies for multiple distribution platforms. Skills include media management and professional terminology. Sections on the Main Campus will be restricted to CMI students.

**Learning Outcomes**
1. Define concepts related to digital video editing.
2. Use non-linear video editing software for editing a short film.
3. Enhance storytelling through the use of continuity, timing, cutaways, intercutting, compositing, transitioning, jump cutting, montaging and animating.
4. Use text, titles, transitions, video effects, sound effects, dialogue, and visual assets for digital video editing.

FDMA 1260. Introduction to Digital Media
1-3 Credits (1-3)
Explores concepts of how text, graphics, sound, images and video come together in a digital media program and researching new trends and current issues related to media applications and design. Students will be involved in teamwork, communication and workplace interaction simulation. May be repeated up to 12 credits. Restricted to Community Colleges campuses only.

**Learning Outcomes**
1. Describe and identify the principal components and terminology of digital media.
2. Analyze and examine the use of digital media as a communication tool.
3. Plan and implement a digital media project.
5. Create projects using a variety of digital media tools.
6. Demonstrate a working knowledge of copyright and usage rights.
7. Present completed projects in a professional manner for critique.

FDMA 1360. Web Design I
3 Credits (2+2P)
This course provides an introduction to web development techniques, theory, and design. Students will learn HTML, CSS application, and strategies for effective site navigation and design, along with industry standard web editing software to develop various websites. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.

**Prerequisite(s):** ARTS 1520 OR FDMA 1515.

**Learning Outcomes**
1. Acquire and utilize web design terminology.
2. Create basic web pages using HTML.
3. Demonstrate how to use industry-standard, web editing software.
4. Design professional pages that are easy to navigate and quick to load.
5. Develop a basic comprehension of CSS.
6. Prepare and export a variety of graphics to be used online.
7. Compare and contrast designing for web media vs. print media.
8. Analyze the importance of web presence in today’s business/social climate.
FDMA 1410. Audio Production I  
3 Credits (2+2P)  
Students will learn about and apply essential tools and techniques in analog and digital audio production. Topics include acoustic science, microphones, recording and mixing techniques, analog and digital audio hardware and software, including, multi-track, computer-based recording and editing systems. Restricted to: Community Colleges only.  
**Prerequisite(s):** FDMA 1210 and FDMA 2410.  
**Learning Outcomes**  
1. Apply tools and techniques in analog and digital audio production  
2. Illustrate the fundamentals of acoustic science.  
3. Model professional behavior used in audio recording.

FDMA 1415. Principles of Sound  
3 Credits (2+2P)  
The creation of a professional quality original media soundtrack is possible for relatively low production/post production cost. This class is designed to give the student and overview of creating sound for a variety of digital media. Topics include acoustic principles, sound design, audio hardware, recording techniques; and editing, processing, and multi-track mixing, using software applications. Restricted to: Community Colleges only.  
**Prerequisite(s)/Corequisite(s):** FDMA 1220.  
**Learning Outcomes**  
1. Record and edit wild sound effects and synced dialogue  
2. Discover, upload, and edit on-line music, ambience and sound effect loops  
3. Implement audio design theories  
4. Create an aesthetic soundtrack which incorporates multiple elements and dimensions  
5. Design, edit, process, mix and master a synced multi-track soundtrack  
6. Demonstrate capable use of digital audio production and post-production workflow  
7. Produce short audio projects which meet media industry technical standards

FDMA 1510. Introduction to 3D Animation  
3 Credits (3)  
This course provides an overview of 3D animation production processes. 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. Students will review and critique other's animation, as well as plan and produce original animation for review by classmates and as part of a CGI demo reel.  
**Prerequisite(s):** FDMA 2382 or FDMA 2381 or consent of instructor.  
**Learning Outcomes**  
1. Demonstrate a fundamental understanding of 3D animation history and principles.  
2. Analyze animation work of other artists.  
3. Appropriately utilize the various media technologies for digital 3D animation.  
4. Demonstrate and apply basic techniques of digital 3D animation.  
5. Demonstrate and apply basic processes of creating CGI for a narrative.  
6. Apply some basic strategies for developing and creating a story visually, and create original animations.  
7. Present original animations to instructor and classmates for critique.  
8. Create a CGI demo reel of work completed during the course.

FDMA 1515. Introduction to Digital Image Editing - Photoshop  
3 Credits (2+2P)  
In this course, students will learn how to use the tools in Adobe Photoshop to create new images and edit existing images. Tools used will include selections, layers, and adjustments, among other pixel editing tools. Basic composition and output will be emphasized in all projects. May be repeated for a maximum of 6 credits.  
**Learning Outcomes**  
1. Make and refine selections  
2. Adjust color and tone in an image  
3. Eliminate unwanted objects in an image  
4. Apply layers to organize and create effects  
5. Create brushes, styles and vector shapes  
6. Prepare image for print and screen output  
7. Apply masking and layers to non-destructively edit an image  
8. Effectively utilize blending modes and layer styles  
9. Apply adjustment layers  
10. Apply design principles including typography

FDMA 1531. Evolution of Electronic Games  
3 Credits (2+2P)  
Focus on the evolution of video games and how they have shaped mainstream entertainment. May be repeated up to 6 credits.
FDMA 1535. Introduction to Illustrator
3 Credits (2+2P)
Students receive instruction on vector graphics creation using vector illustration software. The students will create professional-quality artwork for print publishing and multimedia graphics. Instruction includes creating and manipulating basic shapes, drawing with the pen tool, using various brushes, working with type and preparing graphics for web, print, and digital publication. May be repeated for a maximum of 6 credits.

Learning Outcomes
1. Apply a variety of shape blending options
2. Create and apply new gradients
3. Apply Gradient Meshes and Envelopes
4. Create symbols, brushes and vector shapes
5. Apply Pathfinder and other effects
6. Effectively utilize the pen tool to draw and edit shapes
7. Effectively utilize Vector tools
8. Prepare image for print and screen output
9. Apply clipping masks
10. Prepare image for use in another program
11. Apply design principles including typography

FDMA 1536. Advanced Computer Illustration
3 Credits (2+2P)
Advanced techniques in 2D vector drawing and fundamentals of 3D illustration for use in print, web, and multimedia applications. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.

Prerequisite(s): FDMA 1535.

Learning Outcomes
1. Demonstrate proficiency in using advanced features of Illustrator.
2. Identify and create different illustrator/art styles using advanced techniques for shading, perspective, light, reflection.
3. Produce high quality digital imagery incorporating basic principles of composition.
4. Create a series of illustrations demonstrating a design competency in layout foundation and illustrative moods or client/project based solutions.
5. Create high quality portfolio pieces that demonstrate an advanced knowledge of design, composition and Illustrator techniques.
6. The students will produce finished printed portfolio pieces demonstrating a comprehensive knowledge of typographical, design, illustrative and layout skills

FDMA 1545. Introduction to Photography & Digital Imaging
3 Credits (2+2P)
This course is a study of the principles and techniques of photography using digital equipment, and discusses how digital cameras, imaging editing, and technology have changed the world of photography. Students will learn about studies in resolution, lighting, software, editing, printing, and web applications. They will gain fundamental knowledge in the rapidly expanding technology of photography and imaging, and be able to incorporate the knowledge into all areas of digital graphics.

Learning Outcomes
1. Exhibit proper usage of the principles and techniques of photography using digital equipment.
2. Utilize features and techniques of a digital camera with proper use of lenses, settings, and flashes.
3. Create photo collections that represent proper use of technical skills.
4. Demonstrate proficiency in planning, lighting, capturing, and distributing photographic projects which show ability to create photographs artistically and to tell a story or express an idea.
5. Utilize appropriate software to create original projects.
6. Demonstrate knowledge in post-production of photos as to sizing, sampling, resolution, and exporting.
7. Produce original projects which respect intellectual property of others.
8. Create a digital portfolio of work completed during the course.

FDMA 1555. Introduction to the Creative Media Industry
3 Credits (3)
This class is an introductory course for students who are beginning their understanding of Media and how it affects them and our society. It offers a broad-stroked view of the entire industry including Marketing, Production, History, Jobs, Design, Architecture, New Media Literacy, and industry standards. Students will listen to experts in the field, get involved in open discussions about the industry and use new information to complete hands-on individual & group assignments.

Learning Outcomes
1. The basic philosophies and methods that guide people working in the Creative Media industry.
2. Knowledge of a wide variety of different jobs, qualifications and paradigms used in the industry.
3. Marketing, Production, Budgets, History, New Media, Inspiration and other aspects of the industry.
4. An accurate view of the Creative Media field.
FDMA 1630. Principles of Design
3 Credits (2+2P)
This course will explore how we see and use visuals to communicate information. Students will develop critical thinking skills in applying concepts of basic design principles. Students will apply the concepts with hands-on and analysis assignments. These concepts will then be applied to design for advertising, print, digital media, and web design. The business of design will also be covered with emphasis on client relations and networking Restricted to: Community Colleges only. Prerequisite(s): FDMA 1535

Learning Outcomes
1. Practice Creativity
2. Plan a Design project
3. Demonstrate the effective use of Emphasis Contrast
4. Demonstrate the effective use of Balance and Alignment
5. Demonstrate the effective use of Harmony and Repetition
6. Demonstrate the effective use of Flow, Movement, and Rhythm
7. Demonstrate the effective use of Simplicity and Economy
8. Effectively apply basic color theory
9. Demonstrate the effective use of Typography principles
10. Apply design principles to Screen Print Projects
11. Develop client relations

FDMA 1710. 2D Animation
3 Credits (2+2P)
Concepts and techniques in storyboarding and creating interactive 2D animations for web, multimedia and video.
Prerequisite(s): FDMA 1535.

Learning Outcomes
1. Be able to correctly storyboard an animation scene
2. Define and demonstrate basic animation terminology and principles.
3. Produce a complete hand drawn animation using industry standard software and processes.

FDMA 1715. 2-D COMPOSING & FX
3 Credits (3)
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 unrendered animation into a final piece with advanced 3D lighting, spacing, and digital effects so that it can achieve a dynamic, professionally rendered look. Restricted to Las Cruces campus only.

Learning Outcomes
1. The goal of this class is for students to learn how to use advanced compositing and effects tools in order to achieve a more dynamic and professional visual look for their animations or motion graphics.
2. By the end of the class, you should be proficient animation compositors that can assemble and
3. Synthesize a basic animation into a rendered, visually sophisticated piece.
4. Students who pass this class will have a basic to intermediate knowledge of Adobe After Effects

FDMA 1720. 3-D Character Design
3 Credits (2+4P)
Focus on designing a character and then taking that design and building it in 3D using intermediate modeling techniques. May be repeated for a maximum of 6 credits.
Prerequisite(s): FDMA 1510 or FDMA 2530.

Learning Outcomes
1. Translate concept art into a low and high resolution 3D model using proper modeling techniques
2. Use Polygon modeling techniques to create a 3D character
3. Layout UVs and utilize Adobe Photoshop to texture a model.

FDMA 1996. Selected Topics
1-4 Credits (1-4)
Specific titles to be announced in the Schedule of Classes. May be repeated for a maximum of 18 credits. Restricted to Community Colleges campuses only.

Learning Outcomes
1. Varies

FDMA 2111. Environmental Scene Design
3 Credits (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(s): FDMA 1510 or FDMA 2530.

FDMA 2120. Film Crew I/ Introduction to Film and Media Workflow
9 Credits (9)
An introduction to the film industry. This class teaches film production processes, film crew hierarchy, film production set-safety and etiquette and provides hands-on training in industry standard film production equipment. Students complete the semester by participating as a below-the-line crew member on a short film. Restricted to: Community Colleges only.

Learning Outcomes
1. Explain film production processes; Interpret call sheets and deal memos, model basic on-set protocols and professional behavior
2. Assist producers and directors in completing a professional film project
3. Work effectively in production crew positions in a group environment.
4. Recognize and articulate specific film production structure, from original concept to final release

FDMA 2125. Film Crew II
9 Credits (9)
The second course designed to train students to become working members of film crews. It will be taught by working film professionals. Content will be lecture and hands-on. Students complete the semester by working as part of an actual film crew as below-the-line and above-the-line crew members. Restricted to: Community Colleges only.
Prerequisite(s): FDMA 2120.

Learning Outcomes
1. Understand film production processes used to produce a film
2. Manage craft area job functions
3. Model on-set protocols and professional behaviors
4. Assist producers and directors in completing a professional film project
FDMA 2150. Desktop Publishing II  
3 Credits (2+2P)  
This class will enhance and build upon student layout/design skills developed in the Introduction to Desktop Publishing course, incorporating intermediate to advanced concepts in typography and layout design. Upon completion of this course, students will be able to use page layout software to prepare a variety of documents for presentation and critique, including newsletters, instructional flyers, and other complex design/typographic pieces. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.  
Prerequisite(s): FDMA 1120.  
Learning Outcomes  
1. Build upon knowledge of design and design terminology.  
2. Exhibit intermediate to advanced design principles using type, layout, and color.  
3. Demonstrate skill in intermediate to advanced concepts and features of page layout software.  
4. Exhibit knowledge of styles, tables, images and clipping paths and interactive documents as well as printing preparations and procedures.  
5. Create layouts for print, web, and other media that demonstrate an intermediate to advanced knowledge in typography and layout design.  
6. Format and produce newsletters and instructional flyers, as well as larger, complex projects such as packaging mechanicals, multiple master page documents, and books.  
7. Assess works of graphic design for quality and effectiveness.  
8. Utilize produced material to create or add to a design portfolio for future use.  

FDMA 2210. Digital Video Production II  
3 Credits (2+2P)  
Advanced techniques of the tools and application of professional film making. May be repeated for a maximum of 6 credits.  
Prerequisite: FDMA 1210.  
Learning Outcomes  
1. Demonstrate the ability to produce and manage a video project: Produce a script, storyboard, and production schedule for a video project designed for a specific audience.  
2. Demonstrate proficiency in producing quality digital video footage and audio tracks: Shoot to the script and storyboard using a variety of camera and lighting techniques; Produce a finished complex sound track including narration, music, and sound effect.  
3. Demonstrate ability to produce and edit a professional quality video project: Integrate all production aspects of the project including video, audio, graphics, titles, transitions, and effects. Guide the project through the final production stages.  
4. Develop competency in digital video distribution using various formats and techniques: Distribute project in various formats which could include DVD and web posting.  

FDMA 2241. Advanced Camera Techniques  
3 Credits (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(s): FDMA 1210.  
Learning Outcomes  
1. Students knowledge of high-end video camera operation and features.  
2. Students must know all the working features of the video production equipment being used during the course in order to achieve the desired footage as required by the instructor.  
3. Demonstrate proficiency in producing quality digital video footage.  
4. Individuals must acquire the knowledge of different shooting styles in different productions situations and use those acquired skills to produce the appropriate video footage.  
5. Using the proper lighting in different on location shooting styles.  
6. Skill of each individual utilizing the usage of high-end camera equipment such as dollies, cranes and Steadicam.  
7. Each individual must work as a team player to create professional style video footage.  

FDMA 2285. Digital Video Production and Editing II  
3 Credits (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. Restricted to Community Colleges campuses only. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.  
Prerequisite(s): FDMA 1220.  
Learning Outcomes  
1. Intermediate to advanced video editing create short films and training videos, create TV quality commercials, direct a news broadcast, and work as a mentor to students on digital media equipment  

FDMA 2287. Digital Design Studio  
1-3 Credits  
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. May be repeated for a maximum of 6 credits.  
Prerequisite(s): FDMA 1630 or ARTS 1712.  
Learning Outcomes  
1. Demonstrate competency in the use of InDesign software.  
2. Create appropriate visual solutions based on target marketing information.  
3. Demonstrate competency in the design and production of advertising and promotional materials.  
4. Present ideas and concepts effectively and competently.  
5. Visually demonstrate design solutions to be used in a portfolio.
FDMA 2310. History of Cinema I
3 Credits (3)
This course surveys the history of cinema - investigating the process by which the original "cinema of attractions" evolved into a globally dominant form of visual storytelling. We will explore the development of cinema both as an art form and as an industry, and consider the technological, economic, cultural factors, as well as many key international movements that helped shape it. Restricted to: G-CMI, DFM, ANVE majors.

Learning Outcomes
1. Gain a greater appreciation for the history of cinema
2. Develop knowledge of the key eras in the history of U.S. cinema
3. Learn the characteristics of major movements in international cinema
4. Understand the various elements that go into telling a story in cinema: screenplay, narrative devices, director, producer, talent, production design, cinematography, editing, sound design
5. Learn how major genres in U.S. cinema have evolved in the past 100+ years
6. Gain a basic understanding of the operations and organization of the Hollywood film industry, from the studio system until today
7. Gain an awareness of the shifts in the film industry that present new opportunities for independent filmmakers
8. Understand the importance of learning about the history of cinema to the process of becoming a filmmaker
9. Strengthen public speaking skills

FDMA 2311. History of Animation
3 Credits (3)
Explores the history of Animation as an art form and industry through readings, screenings, lecture and periodic guest speakers. Restricted to: G-CMI, ANVE, DFM majors. Restricted to Las Cruces campus only.

Learning Outcomes
1. To expand your knowledge of the history of animation and its evolution to the modern day.
2. To expand your ability to view animation critically and to understand its early connections to cartooning as well as its ongoing cultural presence and relevance.
3. To expand your comfort with accessing information and completing assignments both online and independently. Canvas will be utilized for many of our readings and for some response assignments.

FDMA 2312. History of Media Design
3 Credits (3)
An introduction to the principles of design history and theory within a chronological framework of historical and emerging media.

Learning Outcomes
1. Introduction to visual communication: Defines design media; Discuss universal design principles and strengthen student basic design skills.
2. Historical technological development and design: Prehistoric communication; Beginnings of alphabet and written language; Movable type and the printing press; Industrial revolution; Digital Age; Designers and Trends; Personalities and their influence and contributions
3. Identify design styles and discuss the relevance of how design influences: Idea generation; Trend sources; Influences or appropriation; Propaganda and advertising.

FDMA 2325. Advanced Photoshop
3 Credits (2+2P)
This course expands on the Photoshop skill set to develop proficiency with selections, masking, channels, filters, color correction, painting tools, vector integration, video, special effects, and compositing techniques. The focus is on the core image-editing tools of Photoshop that can be universally applied to photography, print, film or the web. The material is covered in production-oriented projects and students develop work suitable for portfolios. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.

Prerequisite(s): FDMA 1515.

Learning Outcomes
1. Create effects using advanced blending techniques
2. Effectively utilize advanced masking techniques
3. Refine Selections with advanced techniques
4. Assess Adjust color in an image
5. Utilize advanced photo enhancement techniques
6. Alter images using Photoshop painting techniques
7. Create brush presets
8. Create vector elements with paths
9. 1Add manipulate type on a path
10. 1Create advanced special effects
11. 1Apply vanishing point warping
12. 1Create a video clip
13. 1Apply color adjustments to video

FDMA 2326. Digital Photography and Imaging II
3 Credits (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. Restricted to: Alamogordo campus, Carlsbad campus, Dona Ana campus.

Prerequisite(s): FDMA 1545.

Learning Outcomes
1. Apply proper exposure techniques.
2. Practice effective composition techniques.
3. Demonstrate knowledge of working with Camera RAW files.
4. Demonstrate proper image adjustment and correction techniques.
5. Successfully apply the basics of HDR digital photography.
6. Apply techniques for modifying light.
FDMA 2360. Web Design II
3 Credits (2+2P)
In this course, students will refine their skills in coding and web graphic design as well as be introduced to methods in constructing sites that adhere to the standards of responsive web design. Students will expand their knowledge of HTML and CSS using a code editor, and they will both analyze existing websites and also construct an interactive website. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): FDMA 1360.
Learning Outcomes
1. Plan and produce web design mockups.
2. Demonstrate a proficiency in HTML/CSS coding.
3. Utilize basic web scripts.
4. Integrate animation into web design.
5. Create fully functional websites using one or more web editors.
6. Make a website “live.”
7. Evaluate web designs for aesthetics and functionality.
8. Demonstrate the utilization of responsive design.

FDMA 2365. Web Design for Small Business
3 Credits (2+2P)
Technology and techniques for designing and building a web presence for small business. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): FDMA 1360.
Learning Outcomes
1. Learning advanced tools and techniques for creating and maintaining complex Business web sites. We will be using CSS, PHP, HTML, Photoshop, and Wordpress.
2. design a complete and fully functional online web business.
3. understand and develop a plan to better manage a web store/business.
4. review basic design guidelines in preparing a variety of web applications for business.
5. develop technical skills in using various web based solutions.
6. reinforce your knowledge of web design software.
7. introduce alternate sources of data, communication and financial solutions.

FDMA 2370. Advanced Web Techniques
3 Credits (2+2P)
Creating and managing complex web sites using advanced techniques and tools. May be repeated for a maximum of 6 credits. Restricted to: Community Colleges only.
Prerequisite(s): FDMA 1515 and FDMA 2360.
Learning Outcomes
1. Create webpages using Hypertext Markup Language (HTML) elements and tags
2. Format webpages using Cascading Style Sheets (CSS)
3. Validate webpage code
4. Apply industry-standard webpage design and organization principles
5. Publish a website

FDMA 2381. Storyboarding
3 Credits (3)
Examines effective writing principles to create storyboards that communicate the overall picture of a project, timing, scene complexity, emotion and resource requirements. Further, the purpose of this course is to introduce students to the principles of visual storytelling—in film—through the use of the storyboard. In other words, to show how storyboards are critical “architectural component” of the filmmaking process, used as a blueprint (or guide) to communicate the complex elements of a film story. Crosslisted with: ENGL 2381. Restricted to: DFM,ANVE, G-CMI majors. Restricted to Las Cruces campus only.
Learning Outcomes
1. Learn to conceive and draw original images.
2. Learn to use images to tell a story.
3. Design, develop, and order images (shots) into storyboarded scenes.
4. Understand how storyboarded sequences are a tool in the process of filmmaking.
5. Understand how the storyboard image is translated from the written page.
6. Build scenes from the scripted sequences into a storyboard.

FDMA 2382. Principles of Story Across the Media
3 Credits (3)
The purpose of this course is to help students understand the basic elements of narrative structure (e.g. character, dramatic conflict, theme, etc.) and how these elements may be used effectively in media expression. Crosslisted with: ENGL 2382. Restricted to: G-CMI, DFM, ANVE majors. Restricted to Las Cruces campus only.
Learning Outcomes
1. Identify the elements of storytelling in scripted text or improvised performance
2. Understand how these elements work together across different media
3. Apply these elements of storytelling in original work
4. Appreciate and master these elements for independent or collaborative work

FDMA 2410. Audio Production II
3 Credits (2+2P)
Students will use skills developed in the Audio Production I course to produce audio projects utilizing a variety of analog and digital audio hardware and software, including continued use of multi-track, computer-based recording and editing systems, as well as exploring more advanced audio techniques and concepts. Restricted to: Community Colleges only.
Learning Outcomes
1. Apply analog and digital audio hardware and software in audio recording.
2. Apply common professional set-up practices of audio production facilities.
3. Produce audio projects, sync sound recordings, and audio dialogue replacement (ADR) demonstrating technical expertise.
4. Perform an audio mix and master for a final professional product.
5. Analyze and compare existing audio productions for quality.
FDMA 2510. Introduction to Sound Design for Film  
3 Credits (3)  
This course is an introduction to the principles, techniques and applications of sound design and film scoring. Students learn how sound affects storytelling in a film, examine the role of sound from the script to screen, and the professional process of creating a soundtrack. Students learn how to use sound equipment in a production environment and execute basic techniques used to develop a soundtrack. Crosslisted with: FDMA 1415.  
Prerequisite(s)/Corequisite(s): FDMA 2382. Restricted to: DFM, ANVE majors. Restricted to Las Cruces campus only.  
Learning Outcomes  
1. Compare the properties and propagation of sound and importance of sound to the storytelling aspect of filmmaking  
2. Learn the process of designing a soundtrack for film and recording live audio dialogue for use in post-production editing  
3. Learn methods of capturing sound including live audio recording, dialogue recording, foley, orchestration and audio dialogue replacement  
4. Design a soundtrack for motion media project.

FDMA 2520. Introduction to Cinematography  
3 Credits (3)  
The Director of Photography (or Cinematographer), in close collaboration with the Director and Production Designer, helps determine the look of a film. This course is designed to introduce students to the technical and aesthetic fundamentals of creating, developing, and collaboration on the visual elements of storytelling, using camera framing, lensing, and lighting fundamentals such as shadows, light and color. May be repeated up to five credits. only. Prerequisite(s)/Corequisite(s): FDMA 2382 (Las Cruces Campus) or FDMA 1210 (Community College Campus(es))  
Learning Outcomes  
1. Define and explain the fundamental concepts of cinematography, such as exposure, lighting solutions, and color temperature.  
2. Understand how cinematography brings the Director’s vision to reality.  
3. Demonstrate proficiency in plotting and executing interior and exterior lighting solutions.

FDMA 2530. Introduction to 3D Modeling  
3 Credits (3)  
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. May be repeated for a maximum of 6 credits.  
Learning Outcomes  
1. Identify the role of a 3D modeler in a production pipeline within various fields of digital animation.  
2. Apply techniques in modeling mechanical and organic objects.  
3. Utilize tools available in professional 3D modeling software.  
4. Create simple animations and renders.  
5. Present original animations to instructor and classmates for critique.  
6. Create a demo reel of work completed during the course.

FDMA 2535. Digital Illustration  
3 Credits (3)  
Introductory course examining traditional artistic expressions and translating visual art experiences into a digital art medium to enhance visual storytelling. Students acquire basic principles of drawing and painting through hands-on experience manipulating tonal value, composition, form development, light and shadow, color theory, rendering realism, and graphic design. Restricted to: DFM, ANVE majors. Restricted to Las Cruces campus only.  
Learning Outcomes  
1. Be familiar with the CMI computer system, facilities, equipment and policies.  
2. Appropriately utilize the various media technologies available at CMI for digital illustration.  
3. Understand the different roles and areas of digital illustration.  
4. Understand and apply some basic techniques of digital illustration.  
5. Understand and apply some basic processes of creating pleasing images based on knowledge of traditional art principles.  
6. Begin to apply some basic strategies for developing and creating aesthetically pleasing images.

FDMA 2570. Creative Media Studio  
3 Credits (2+2P)  
A studio environment where students specialize in creating film-festival quality and portfolio-ready projects under the supervision of faculty. May be repeated for a maximum of 6 credits.  
Prerequisite(s): FDMA 1210 and FDMA 1220 or FDMA 2530.  
Learning Outcomes  
1. Students will work together to create portfolio-quality work in a studio environment.  
2. Through classroom discussion and reporting the students will collaborate to produce a professional quality "vertical slice" game concept within a defined timeline and financial budget.

FDMA 2710. Beginning 2-D Animation  
3 Credits (3)  
Students will learn the basics of digital 2D animation by working through a variety of exercises, creating an original storyboard, and animating five or more shots utilizing industry standard software. Restricted to: DFM, ANVE majors. Restricted to Las Cruces campus only.  
Learning Outcomes  
1. The student will demonstrate an overall knowledge of computers as a tool of the animation artist and be able to produce simple animations using the techniques learned in class.  
2. Use major software tools with ease  
3. Manage time lines through key frames  
4. Build storyboards  
5. Demonstrate knowledge of 2-D and animation terminology  
6. Produce actions, set environments and constraints for 2-D animation  
7. Render full animation.

FDMA 2715. Special Effects  
3 Credits (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(s): FDMA 2530 or FDMA 2765.
FDMA 2720. 3-D Animation
3 Credits (3)
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): FDMA 1510, FDMA 2710 or consent of instructor.
Learning Outcomes
1. Clearly describe the role of an animator in cinema, gaming and related fields.
2. Recognize leading animators and their methods.
3. Demonstrate knowledge of advances in contemporary animation.
4. Utilize current industry standard animation tools.
5. Apply fundamental animation processes and techniques.

FDMA 2725. Rigging for 3D Animation
3 Credits (3)
This course will introduce principles and practices of current 3D animation rigging. 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, body and facial rigging. Restricted to: DFM, ANVE majors.
Prerequisite(s): FDMA 1510.
Learning Outcomes
1. Understand what Rigging is and the role it plays in the world of cinema and video games.
2. Be familiar with industry professionals and their techniques and approaches to rigging.
3. Understand and be able to apply the fundamentals of rigging to industry standard applications.
4. Demonstrate ability to rig basic to intermediate machines, bipeds and quadrupeds.

FDMA 2730. Advanced Character Animation
3 Credits (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. Restricted to: Community Colleges only.
Prerequisite(s): FDMA 2530.
Learning Outcomes
1. Create skeletal riggings for use with a 3D model.
2. Attach riggings to a 3D model using Smooth and rigid binding and refine the bindings so that they are properly weighted.
3. Animate a 3D model using skeletal and vertex animation techniques.

FDMA 2735. Advanced 3D Animation Workshop A
3 Credits (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. May be repeated for a maximum of 9 credits. Consent of instructor required.
Corequisite(s): FDMA 2740.
Learning Outcomes
1. Define the duties and skills sets required for a career in 3D Modeling.
2. Understand the Maya interface, the uses for all of the major modes and menus of the interface and be able to describe how to access the tools, actions and the options of those tools and actions.
3. Complete and compile a multi shot animated short.

FDMA 2740. Advanced 3D Animation Workshop B
3 Credits (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. May be repeated for a maximum of 9 credits. Consent of instructor is required.
Corequisite(s): FDMA 2735.
Learning Outcomes
1. Define the duties and skills sets required for a career in 3D Modeling.
2. Understand the Maya interface, the uses for all of the major modes and menus of the interface and be able to describe how to access the tools, actions and the options of those tools and actions.
3. Complete and compile a multi shot animated short.

FDMA 2745. Light, Shade, Render
3 Credits (3)
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. Restricted to: DFM,ANVE majors. Restricted to Las Cruces campus only.
Prerequisite(s): FDMA 1510, FDMA 2530, or Consent of Instructor.
Learning Outcomes
1. Understand the role of lighting and surfacing to tell a story.
2. Be familiar with leading lighting artist and their approaches.
3. Utilize the software implemented in the entertainment industry.
4. Understand and apply fundamental lighting and rendering techniques.
5. Demonstrate ability to create successfully rendered scenes from concept through production.
FDMA 2750. Digital Sculpting  
3 Credits (3)  
Introduce students to the 3D Sculpting programs which are the industry standard sculpting programs. Students will learn how to create complex high polygon sculpts and normal maps and transfer the models into 3D studio Max and Autodesk Maya. May be repeated up to 6 credits. Restricted to: Community Colleges only.  
Prerequisite(s): FDMA 2530.  
Learning Outcomes  
1. Demonstrate communication skills through written critiques and explanations  
2. Students will demonstrate visual communication skills through critiques, written explanations, and storyboarding  
3. Demonstrate a working knowledge of Zbrush's interface  
4. Demonstrate a working knowledge of Zpheres and how they are best used to create sculpts  
5. Demonstrate a working knowledge of painting a mesh using Spotlight  
6. Demonstrate a working knowledge of retopologizing and exporting the mesh  
7. Demonstrate a working knowledge of integrating the full Zbrush pipeline into Unity and Unreal  

FDMA 2755. Drawing for Animation  
3 Credits (3)  
Introductory study of the human and animal form in relation to animation. Students learn fundamentals and exaggeration of the figure, as related to proportion, rhythm, mechanics, and motion. Areas of focus are: basic form, proportion, shape, contour, gesture, anatomy, portraiture, perspective, clothing effects and drawing from observation. Restricted to: CMT, DFM, ANVE majors.  
Learning Outcomes  
1. Students will have an opportunity to gain hands on experience using industry standard state of the art animation software.  
2. Understand what the basics of drawing the human form.  
3. Have a general understanding of human anatomy as needed for the artist.  
4. Be able to design the human form from imagination.  

FDMA 2770. Critical Game Studies  
3 Credits (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. Restricted to: Community Colleges only.  

FDMA 2775. Game Tools and Techniques  
3 Credits (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(s): FDMA 2770.  
Learning Outcomes  
1. Students will develop rapid prototyping techniques.  
2. Through classroom exercises the students will gain competency in industry-standard game creation engines and tools, and learn to work together in groups to create rapid prototypes.  
3. This includes creating art, sound and music, and creating basic scripts within an engine.  

FDMA 2785. Level Design Concepts  
3 Credits (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(s): FDMA 2770  
Learning Outcomes  
1. Students will develop level design skills.  
2. Through classroom exercises the students will gain a comfortable competency with designing levels both on paper and digitally.  
3. This includes creating first person shooter levels, third person levels, multiplayer level design, and more.  

FDMA 2993. Workshops (Advanced Photography)  
1 Credit (1)  
This is a series of 1-credit workshops offering specialized and intense advanced skill training and upgrading applications of photography for commercial purposes and training in photographic skills and styles presented by a variety of professional lecturers. May be repeated up to 7 credits. Restricted to Community Colleges only.  
Prerequisite(s): FDMA 1545.  
Learning Outcomes  
1. Varies  

FDMA 2994. Portfolio Design & Development  
1-3 Credits  
Personalized design and creation of the student’s professional portfolio including hard-copy, demo reel, and online. May be repeated up to 6 credits. Consent of Instructor required. Restricted to Community Colleges campuses only.  
Learning Outcomes  
1. Varies  

FDMA 2995. Film Crew Cooperative Experience  
3-6 Credits (3-6)  
Industry production experience in specific craft areas for film crew technicians who have successfully completed two semesters of FTTP. Restricted to: Dona Ana campus, Carlsbad campus.  
Prerequisite(s): FDMA 2125.  
Learning Outcomes  
1. Varies  

FDMA 2996. Special Topics  
1-4 Credits  
Specific topics to be announced in the Schedule of Classes. May be repeated for a maximum of 18 credits.  
Learning Outcomes  
1. Varies  

FDMA 2997. Independent Study  
1-3 Credits  
Individual studies directed by consenting faculty with prior approval of department head. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.  
Prerequisite(s): Minimum GPA of 3.0 and sophomore standing.  
Learning Outcomes  
1. Varies
FDMA 2998. Internship  
1-3 Credits  
Work experience that directly relates to a student's major field of study that provides the student an opportunity to explore career paths and apply knowledge and theory learned in the classroom. Internships may be paid or unpaid. Students are supervised/evaluated by both the employer and the instructor. May be repeated up to 9 credits. Consent of Instructor required. Graded: S/U Grading (S/U, Audit). Restricted to Community Colleges campuses only. Consent of instructor required.

Learning Outcomes
1. Varies

Program Manager: Sarah Johnson  
Phone: (505) 287-6656  
Email: sjohns10@nmsu.edu  
Office: McClure Hall, Room 301

Game Design - Certificate of Completion  
30 credits

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>FDMA 1515</td>
<td>Introduction to Digital Image Editing - Photoshop</td>
<td>3</td>
</tr>
<tr>
<td>FDMA 1531</td>
<td>Evolution of Electronic Games</td>
<td>3</td>
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<tr>
<td>FDMA 1535</td>
<td>Introduction to Illustrator</td>
<td>3</td>
</tr>
<tr>
<td>FDMA 1720</td>
<td>3-D Character Design</td>
<td>3</td>
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<tr>
<td>FDMA 2530</td>
<td>Introduction to 3D Modeling</td>
<td>3</td>
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<tr>
<td>FDMA 2715</td>
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<td>3</td>
</tr>
<tr>
<td>FDMA 2785</td>
<td>Level Design Concepts</td>
<td>3</td>
</tr>
</tbody>
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Select 3 credits from the following:
- FDMA 1120 Desktop Publishing  
- FDMA 2730 Advanced Character Animation  
- FDMA 2996 Special Topics  
- OECS 140  
- OECS 245 Game Programming I  
- OECS 246 Game Programming II  
- OR Approved media-related elective

Total Credits 30

Spring
- FDMA 1515 Introduction to Digital Image Editing - Photoshop 3
- FDMA 1720 3-D Character Design 3
- FDMA 2770 Critical Game Studies 3
- FDMA 2775 Game Tools and Techniques 3
- FDMA 2715 Special Effects 3

Total Credits 15

Program Manager: Sarah Johnson  
Phone: (505) 287-6656  
Email: sjohns10@nmsu.edu  
Office: McClure Hall, Room 301

General Studies

General Studies - Associate Degree (p. 143)

Program Manager: Dr. Marlene Chavez-Toivanen  
Phone: (505) 287-6641  
Email: marchave@nmsu.edu  
Office: Martinez Hall

Associate in General Studies  
60 credits

The Associate of General Studies degree program is intended for those wishing to tailor an Associate Degree to their own specific needs. It allows students to include courses from a variety of program areas. Any General Studies degree plan must be approved by the Vice President for Student Services.

The Associate of General Studies is not intended to be a substitute for the Associate of Arts or Associate of Science degree programs, which prepare students for transfer to Bachelor degree programs.

NOTE: The Associate of General Studies degree will not be awarded concurrently with any other Associate degree offered by NMSU.

Total Credits Required for Degree: 60

Requirements for this degree are:
- Complete a total of 60 credits (excludes noncredit courses such as any “N” suffix course);  
- Complete ENGL 1110G Composition I with a C or better;  
- Achieve a 2.0 cumulative GPA;  
- Complete the last 15 hours from NMSU.

Students must complete all University degree requirements, which include: General Education requirements and elective credits to total at least 60 credits. Developmental coursework will not count towards the degree requirements and/or elective credits, but may be needed in order to take the necessary English and Mathematics coursework.

Total Credits Required for Degree: 60

Requirements for this degree are:
- Complete a total of 60 credits (excludes noncredit courses such as any “N” suffix course);  
- Complete ENGL 1110G Composition I with a C or better;  
- Achieve a 2.0 cumulative GPA;  
- Complete the last 15 hours from NMSU.

A Suggested Plan of Study

This roadmap is only a suggested plan of study in order to complete a Certificate in two semesters. It is not intended as a contract. Course availability may vary from fall to spring semester and may be subject to modification or change. Students are advised to earn a C or better in courses to avoid repeating courses.

First Year

<table>
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<tr>
<th>Fall</th>
<th>Credits</th>
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<tbody>
<tr>
<td>FDMA 1535</td>
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<tr>
<td>FDMA 1531</td>
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<tr>
<td>FDMA 2530</td>
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<tr>
<td>FDMA 2785</td>
<td>3</td>
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<tr>
<td>Approved Media-related elective</td>
<td>3</td>
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</tbody>
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Credits 15

A Suggested Plan of Study

This roadmap is only a suggested plan of study in order to complete an Associate degree within two years. It is not intended as a contract. The degree requires a C or better in ENGL 1110G and a total of any college level credits to reach 60 credits.
Health Careers

Health Careers - Certificate (p. 147)

Nursing Assistant - Certificate (p. 147)

NA 101. Nursing Assistant Theory and Lab
6 Credits (5+2P)
Nurse aide skills with emphasis on a bio-psychosocial-cultural approach to client 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. Requires a C or better to pass. Restricted to Community Colleges campuses only.

Learning Outcomes
1. Apply theoretical knowledge associated with nursing assisting in providing basic healthcare services. Perform essential clinical skills within the nursing assistant scope of practice in long-term, acute care, and ambulatory care settings. Recognize factors that affect procedures and results, and take appropriate actions within predetermined limits when indicated, including resident/patient compromise or complications. Demonstrate professional conduct and interpersonal communication skills with patients, other health care professionals, and with the public. Recognize the responsibilities of other health care personnel and interact with them with respect for their healthcare roles and resident/patient care. Apply basic scientific principles and evidenced-based practice in learning new techniques and procedures. Relate vital signs, point-of-care testing, and physical psychological findings to common disease processes. Evaluate occupational exposures, environmental safety hazards, high risk situations, and emergency responses related to health care professions. Demonstrate soft skills related to assisting with patient assessment, mobility, safety, nutrition, and care of the environment. 1 Demonstrate professionalism when interacting with patient populations across the lifespan; including patient education and emergent situations. 1 Explain legal and ethical considerations, including HIPAA and scope of practice related to healthcare settings.

NA 102. Sterile Processing Technician
4 Credits (3+3P)
This course will prepare the student to work as a Sterile Processing Technician, performing critical functions that support both the hospital and Operating Room. The student will learn about infection control, instrument reprocessing, decontamination, disinfection, and sterilization. All critical aspects of sterile processing will be covered to include applicable standards and regulations. This field is constantly evolving and those desiring to work in this profession must ensure that they stay abreast of the science behind the discipline. Restricted to Community Colleges campuses

Prerequisite(s): CCDE 110 N General Composition Placement exam scores, or specific course work.

Learning Outcomes
1. Summarized the legal responsibilities, ethical standards, and safety practices related to Sterile Processing Control and eliminate the spread of microorganisms Articulate standards and regulations as well as recommendations by professional organizations Properly clean, decontaminate, disinfect, and sterilize basic surgical instrumentation Prepare and assemble surgical trays and kits to include packaging and quality assurance indicators Utilize various sterilization modalities

NA 104. Nursing Assistant Fundamentals
3 Credits (3)
This course prepares students for employment as a Nursing Assistant in a Long Term Care Facility. Theory and basic nursing care skills will be taught with an emphasis being placed on the psychosocial-cultural approach to client care. Students will learn communication skills, basic anatomy and physiology, growth and development, infection control, body mechanics, basic nutrition, client/resident elimination needs, the client/resident unit, vital signs, range of motion exercises, bed making, rehabilitation and restorative care, client admission and discharge, common health problems, dealing with death and dying, and basic medical terminology. NA 104 and NA 104L (laboratory) must be successfully completed with a C- or better in order to continue to NA 105 Nursing Assistant Clinical. NA 105 must also be successfully completed with a C- or better to be eligible to take the state certification competency examination. Attendance is required to meet the federal requirements for training hours and content prior to direct contact with a patient/resident and the state competency examination. Students must test out of all CCDE and CCDR courses and eligible to take ENGL 1110G to enroll in this course. Restricted to Community Colleges campuses only.

Corequisite(s): NA 104 L.

NA 104 L. Nursing Assistant Fundamentals Lab
1 Credit (3P)
This course prepares students for employment as a Nursing Assistant in a Long Term Care Facility. Students will learn and demonstrate personal care skills including bathing, grooming, dressing, toileting, assisting with eating and hydration, skin care, transfers and positioning. Students will also learn and demonstrate the use of assistive devices, and how to maintain resident safety, dignity and privacy. NA 104 & NA 104L must be successfully completed with a C- or greater in order to continue to NA 105 Clinical. NA 105 must be successfully completed with a C- or greater to be eligible to take the state certification competency examination.

Prerequisite(s)/Corequisite(s): NA 104. Prerequisite(s): English COMPASS score of 35 or greater or CCDDE 110N, and reading COMPASS score of 55 or greater or CCDR 105N. Restricted to Community Colleges campuses only.
NA 105. Nursing Assistant Clinicals
4 Credits (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. Restricted to: Community Colleges only.
Prerequisite(s): C or better in NA 104 or consent of instructor.

NA 109. Phlebotomist Basic
4 Credits (2+4P)
This course provides the latest information, techniques, skills, and equipment for blood and specimen collection based on the standards of the Clinical and Laboratory Standards Institute, Needlestick Prevention Act, Joint Commission 2008 National Patient Safety Goals, OSHA and CDC. An advanced skills lab is included in the course to provide a "hands-on" practice experience and a 30 hour practicum in a supervised work environment collecting blood and specimens on actual patients for laboratory tests. Attendance is mandatory. Prepares students for employment as a phlebotomist in health care settings. Requires a "C" or better to pass. Upon successful completion of course, student has the opportunity to test for National Healthcareer Certification. Consent of Instructor required.
Prerequisite(s)/Corequisite(s): BIOL 1130 or BIOL 2225. Restricted to Community Colleges campuses only.

NA 110. Electrocardiogram Technician Basic
4 Credits (3+2P)
Prepares students for employment as an Electrocardiogram Technician. Includes basic theory of the cardiovascular system, cardiac rhythm interpretation, 12 lead ECG lead placement, and ECG equipment troubleshooting. The course includes an advanced skills laboratory for "hands-on" practice and 16 hours of supervised clinical in the work environment assisting with ECG testing. Attendance is mandatory. Course requires a grade of "C" or better to pass. Upon successful completion of course, student has the opportunity to test for National Healthcareer Certification. Restricted to Community Colleges campuses only.
Learning Outcomes
1. Perform ECG's, including patient preparation, electrode placement, recording ECG's, mounting upload of ECG to patient's chart. Calculate a patient's heart rate and identify the heart rhythm from an ECG tracing. Identify artifacts; waveform elements of the cardiac cycle, including variances related to ischemia, injury or infarction; as well as, major classifications of arrhythmias. Prepare and monitor patient's for Holter monitoring and telemetry. Prepare, conduct and monitor patients during stress testing. Recognize factors that affect procedures and results, and take appropriate actions within predetermined limits when indicated, including patient compromise or complications. Demonstrate professional conduct and interpersonal communication skills with patients, other health care personnel and interact with them with respect for their jobs and patient care. Apply basic scientific principles in learning new techniques and procedures. 1 Relate electrocardiogram findings to common disease processes.

NA 111. Alzheimer/Dementia Care Focus
3 Credits (3)
Students will learn respectful care of Alzheimer/Dementia persons while ensuring their dignity, maximizing safe independence focusing on strengths and abilities.
Prerequisite(s)/Corequisite(s): NA 104 or NA 101. Restricted to: Community Colleges only.

NA 113. Sterile Processing Practicum
5 Credits (1+4P)
This course will allow students to get hands on training in the Sterile Processing Department. They will perform critical functions learned in the Sterile Processing Technician course. They will apply principles of medical asepsis and infection control and by the end of the practicum be able to independently function in all work areas of the Sterile Processing Department. This field is constantly evolving and those desiring to work in this procession must ensure that they stay abreast of the science behind the discipline. Restricted to Community Colleges campuses
Prerequisite(s)/Corequisite(s): NA 102. Prerequisite(s): CCDE 110 N.
Learning Outcomes
1. Utilize equipment safely in the Sterile Processing Department
Apply concepts of infection control and medical asepsis Effectively demonstrate professional ethical concepts Demonstrate properly cleaning, decontamination, disinfection, and sterilization practices Properly prepare and assemble surgical trays and kits to include packaging and quality assurance indicators Validate sterilization loads to ensure patient safety

NA 115. Phlebotomist Technician
6 Credits (3+6P)
Basic theory and skills of phlebotomy following OSHA and Center for Disease Control guidelines. Prepares students for the requirements of testing for the ASCP certification exam and employment in a healthcare organization as a phlebotomist in licensed settings. Laboratory hours include infection control skills & practice, patient assessment & teaching, and practice in venipuncture. Clinical time includes clinical laboratory processes and operations, patient assessment, venipuncture, and exposure to clinical policies and procedures. Upon successful completion students are workforce ready. Requires C or better to pass. Restricted to Community Colleges campuses only.
Learning Outcomes
1. Collect and process biological specimens for analysis. Recognize factors that affect procedures and results, and take appropriate actions within predetermined limits when corrections are indicated. Monitor quality control within predetermined limits. Perform preventative and corrective maintenance of equipment and instruments or refer to appropriate source for repairs. Demonstrate professional conduct and interpersonal communication skills with patients, laboratory personnel, other health care professionals, and with the public. Recognize the responsibilities of other laboratory and health care personnel and interact with them with respect for their jobs and patient care. Apply basic scientific principles in learning new techniques and procedures.

NA 204. Patient Care Technician
4 Credits (3+3P)
This course will prepare Certified Nursing Assistants (CNAs) to work in the acute care setting through an expansion of their existing basic skill set. Students will acquire expanded acute care skills, critical thinking skills, and knowledge in caring for patients of all ages. Currently CNA certified. Restricted to Community Colleges campuses only.
Prerequisite(s): (NA 104, NA 105, NA 109, NA 110, AHS 120, and (BIOL 1130 or (BIOL 2210 & BIOL 2225)).
Corequisite(s): NA 205.
NA 205. Patient Care Technicians Practicum
4 Credits (1+9P)
This course will prepare Certified Nursing Assistants (CNAs) to work in the acute care setting through an expansion of their existing basic skill set. Students will acquire expanded acute care skills, critical thinking skills, and knowledge in caring for patients of all ages. Students will go to acute care settings to practice newly acquired skills. Must have a “C” or better to pass. Restricted to Community Colleges campuses only.
Prerequisite(s): (NA 104, NA 105, NA 109, NA 110, AHS 120, & (BIOL 1130 or (BIOL 2210 & BIOL 2225))) Currently CNA Certified.
Corequisite(s): NA 204.

NA 209. Phlebotomy Laboratory Technician
4 Credits (2+4P)
A continuation of NA 109, Phlebotomy Basic. This course furthers the experience, knowledge and skills of the phlebotomist by providing advanced specimen collection techniques, skills to assist with lab management, patient data processing, quality control measures, and customer service. Completion of thirty clinical hours and fifty successful venipunctures are required. Attendance in mandatory. Requires a final grade of "C" or better to pass. Consent of Instructor required. Restricted to Community Colleges campuses
Prerequisite(s)/Corequisite(s): ENGL 1110G or ENGL 1110H or ENGL 1110M. Prerequisite(s): (BIOL 1130 or BIOL 2310 & BIOL 2225), and AHS 120, and NA 109.

Learning Outcomes
1. Students will learn and demonstrate advanced specimen collection techniques. Students will learn and demonstrate advanced laboratory processing skills. Students will effectively employ skills required for patient information processing. Students will employ concepts of medical asepsis and infection control. Students will apply knowledge and skills required for quality control measures in the laboratory setting. Students will demonstrate professional and appropriate communication, in addition to soft skills. Students will learn and practice blood collection techniques in preparation for the PBTASCP national certification exam.

NA 210. Administrative Procedures for Medical Assistants
4 Credits (4)
This course will provide students with the administrative procedures needed for a medical assistant. Skills will include creating a welcoming environment, cultural considerations, office safety, opening and closing procedures, computer operation and management, written and telephonic communications, financial procedures, patient scheduling, medical record management, and medical insurance, billing, and coding. Restricted to Community Colleges campuses
Prerequisite(s)/Corequisite(s): NA 212. Prerequisite(s): MATH 1215, and ENGL 1110G, and AHS 120, and BIOL 1130 or BIOL 2225.

Learning Outcomes
1. Create and maintain a medical facility environment
2. Demonstrate professional business communications in writing, via telephone, and email.
3. Demonstrate patient scheduling, screening calls, and check-in.
4. Create a patient chart and demonstrate medical record management.
5. Demonstrate the use and management of an electronic health record.
6. Identify insurance and billing terminology.
7. Identify the different characteristics of third party medical payer sources.
8. Collect information for billing, and precertification for services.
9. Identify common procedure codes for diseases and procedures
10. Complete billing and coding forms.
11. Demonstrate office financial practices, managing patient accounts, and tracking, collecting payments, documentation, and performing banking procedures.
12. Performing inventory, and purchasing of supplies.
13. Identify billing and collection procedures.
15. Apply laboratory regulations for safety and quality in the medical laboratory.
16. Identify legal considerations in the management of a medical office.

NA 212. Medical Assistant Capstone Course
6 Credits (6)
This course provides the student with entry-level theory and limited "hands-on" training in basic and routine clinical office tasks. The course will equip the Medical Assistant (MA) student with the competencies required to perform in a medical office under the direct supervision of a physician. The graduate will be able to assist the physician with physical exams, ECGs, phlebotomy, and minor surgical procedures. CNA Certification within the last 5 years.
Prerequisite(s): NA 105, NA 110, NA 109, AHS 120, BIOL 1130, BOT 208, HIT 228, HIT 248.
NA 214. Medical Assistant Practicum
6 Credits (1+6P)
This course is the practicum for NA 212 Medical Assistant Fundamentals Capstone Course. Students will prepare for a career as a medical assistant in medical offices and clinics. During practicum students will observe and participate in 180 hours in a supervised work environment using knowledge and skills learned in NA 212. This course includes weekly post-practicum conferences with the instructor. The student will be evaluated by both the employer and the instructor. Requires a "C" or better to pass. Upon successful completion the student may be eligible to test for National Certification. Students who have been CNA Certified within the last 5 years can use this to enroll into this course. Consent of Instructor required.

Prerequisite(s)/Corequisite(s): NA 212. Prerequisite(s): NA 105, NA 110, NA 109, AHS 120, BIOL 1130, BOT 208, HIT 228, HIT 248. Restricted to Las Cruces campus only.

Program Manager: Neal Gallagher
Phone: (505) 287-6654
Email: ngallagh@nmsu.edu
Office: Lucy Belle Ma Hall

Health Careers - Certificate of Completion
30 credits

The Health Careers 30 credit hour certificate is designed to prepare an individual for entry level employment in healthcare services as well as help build a strong foundation that supports additional education and training in more specialized healthcare related fields. Students are strongly encouraged to meet with the Program Manager and/or the advisor representing the college to which the student will be transferring, for help planning their studies.

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHLS 1111</td>
<td>CPR for the Health Care Professional</td>
<td>1</td>
</tr>
<tr>
<td>OEEM 101</td>
<td>First-year Seminar</td>
<td>1</td>
</tr>
<tr>
<td>FYEX 1110</td>
<td>Introduction to Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>BCIS 1110 &amp; OCEIS 105</td>
<td>Introduction to Information Technology</td>
<td>3</td>
</tr>
<tr>
<td>COMM 1115G</td>
<td>Introduction to Communication</td>
<td>3</td>
</tr>
<tr>
<td>AHS 116</td>
<td>Medical Terminology</td>
<td>3</td>
</tr>
<tr>
<td>AHS 120</td>
<td>Human Biology</td>
<td>3</td>
</tr>
<tr>
<td>AHS 153</td>
<td>Introduction to Anatomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 1120G &amp; BIOL 1120L</td>
<td>Human Biology Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 2210</td>
<td>Human Anatomy and Physiology I for the Health Sciences</td>
<td>3</td>
</tr>
<tr>
<td>PHLS 1110G</td>
<td>Personal Health &amp; Wellness</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>Select a minimum of 6 credits from the following:</td>
<td>6</td>
</tr>
<tr>
<td>NUTR 2110</td>
<td>Human Nutrition</td>
<td></td>
</tr>
<tr>
<td>NA 101</td>
<td>Nursing Assistant Theory and Lab</td>
<td></td>
</tr>
<tr>
<td>NA 104</td>
<td>Nursing Assistant Fundamentals</td>
<td></td>
</tr>
<tr>
<td>NA 104 L</td>
<td>Nursing Assistant Fundamentals Lab</td>
<td></td>
</tr>
<tr>
<td>NA 105</td>
<td>Nursing Assistant Clinicals</td>
<td></td>
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<tr>
<td>OEEM 115</td>
<td>First Responder Prehospital Professional</td>
<td></td>
</tr>
</tbody>
</table>

OEEM 120 | Emergency Medical Technician Basic                  |       |
OEEM 120 L | Emergency Medical Technician Basic Lab               |       |

Total Credits 30

A Suggested Plan of Study
This roadmap is only a suggested plan of study in order to complete a Certificate in two semesters. It is not intended as a contract. Course availability may vary from fall to spring semester and may be subject to modification or change. Students are advised to earn a C or better in courses to avoid repeating courses.

First Year
Fall | Credits
---|---
PHLS 1111 | 1
OEEM 101 | CPR for the Health Care Professional | 1
FYEX 1110 | First-year Seminar | 3
OCEIS 105 | Introduction to Information Systems | 3
AHS 116 | 3
Electives from approved list | 3

Credits 14

Spring
COMM 1115G | Introduction to Communication | 3
AHS 120 | Medical Terminology | 3
PHLS 1110G | Personal Health & Wellness | 3
BIOL 1120G & BIOL 1120L | Introduction to Anatomy and Physiology I or AHS 153 | 4
Elective from approved list | 3

Credits 16

Total Credits 30

Program Manager: Neal Gallagher
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Email: ngallagh@nmsu.edu
Office: Lucy Belle Ma Hall

Nursing Assistant - Certificate of Completion
16 credits

Nursing assistants perform basic nursing functions and procedures involving patient care. They work under the supervision of a registered nurse, licensed practical nurse, or physician. Nursing assistants tend to matters relating to personal hygiene, safety, nutrition, exercise, and elimination where maintaining patient comfort is a priority. Nursing assistants may be called upon to lift, move, or observe patients, as well as measure temperatures, pulses, respirations, and blood pressures. They may assist with patient admissions and discharges as well. The scope of their responsibilities, however, varies considerably depending upon the type of organization in which they are employed.

NOTE: Admission to the Nursing Assistant program requires Placement scores. Speak with an adviser regarding English and Math requirements and refer to course descriptions (p. 172).

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>AHS 120</td>
<td>Medical Terminology</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 30
Pre-Business

AHS 153 Introduction to Anatomy and Physiology I 4
NA 104 Nursing Assistant Fundamentals 3
NA 104 L Nursing Assistant Fundamentals Lab 1
NA 105 Nursing Assistant Clinicals 4
OEEM 101 CPR for the Health Care Professional 1

Total Credits 16

A Suggested Plan of Study: One Semester

First Year

Fall | Credits |
--- | --- |
NA 104 | Nursing Assistant Fundamentals | 3 |
NA 104 L | Nursing Assistant Fundamentals Lab | 1 |
NA 105 | Nursing Assistant Clinicals | 4 |
AHS 120 | Medical Terminology | 3 |
AHS 153 | Introduction to Anatomy and Physiology I | 4 |
OEEM 101 | CPR for the Health Care Professional | 1 |

Credits 16

Total Credits 16

A Suggested Plan of Study: Two Semesters

The C.N.A program may be completed with dual/concurrent enrollment by high school students completing it over multiple semesters. There is no mandatory sequence when completing the required courses, but a strong recommendation that the NA 105 Clinical and OEEM 101 C.P.R be completed in the students LAST semester.

Freshman

Fall | Credits |
--- | --- |
AHS 120 | Medical Terminology | 3 |
AHS 153 | Introduction to Anatomy and Physiology I | 4 |
NA 104 | Nursing Assistant Fundamentals | 3 |
NA 104 L | Nursing Assistant Fundamentals Lab | 1 |

Credits 11

Spring | Credits |
--- | --- |
NA 105 | Nursing Assistant Clinicals | 4 |
OEEM 101 | CPR for the Health Care Professional | 1 |

Credits 5

Total Credits 16

Program Manager: Neal Gallagher
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Office: Lucy Belle Ma Hall

Pre-Business - Associate in Prebusiness

60 credits

The Associate degree in Pre-Business provides basics in accounting and economics. Students who earn this degree will have completed the first two years of any four-year business degree offered at NMSU Las Cruces. Students are advised to complete the NM General Education Common Core to meet NMSU College of Business requirements.

Students must complete all University degree requirements, which include: General Education requirements and elective credits to total at least 60 credits. Developmental coursework will not count towards the degree requirements and/or elective credits, but may be needed in order to take the necessary English and Mathematics coursework.

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Title</th>
<th>Credits</th>
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</table>

General Education

Area I: Communications

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENGL 1110G</td>
<td>Composition I</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 2210G</td>
<td>Professional &amp; Technical Communication</td>
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</table>

Area II: Mathematics

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 1220G</td>
<td>College Algebra</td>
<td>3</td>
</tr>
</tbody>
</table>

Area III/IV: Laboratory Sciences and Social/Behavioral Sciences

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 2110G</td>
<td>Macroeconomic Principles (Grade of C- or better required)</td>
<td>3</td>
</tr>
<tr>
<td>ECON 2120G</td>
<td>Microeconomics Principles (Grade of C- or better required)</td>
<td>3</td>
</tr>
</tbody>
</table>

Area III: Laboratory Science Course (4 credits)

Select one from the following:

- ASTR 1115G or ASTR 1120G: Introduction Astro (lec+lab)
- BIOL 1120G: Human Biology
- BIOL 1120L: Human Biology Laboratory
- BIOL 1190G: Contemporary Problems in Biology
- BIOL 2610G & BIOL 2610L: Principles of Biology: Biodiversity, Ecology, and Evolution
- BIOL 2610G & BIOL 2610L: Principles of Biology: Biodiversity, Ecology, and Evolution Laboratory
- C S 171G: Introduction to Computer Science
- CHEM 1120G: Introduction to Chemistry Lecture and Laboratory (non majors)
- ENVS 1110G: Environmental Science I
- GEOL 1110G: Physical Geology
- PHYS 1115G: Survey of Physics with Lab

Area V: Humanities

Select one from the following:

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 1410G</td>
<td>Introduction to Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 2310G</td>
<td>Introduction to Creative Writing</td>
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</tr>
<tr>
<td>ENGL 2650G</td>
<td>World Literature I</td>
<td></td>
</tr>
<tr>
<td>HIST 1110G or HIST 1120G</td>
<td>United States History I</td>
<td></td>
</tr>
<tr>
<td>HIST 1150G</td>
<td>Western Civilization I</td>
<td></td>
</tr>
</tbody>
</table>
A Suggested Plan of Study for Students

This roadmap assumes student placement in MATH 1215 Intermediate Algebra and ENGL 110G Composition I. The contents and order of this roadmap may vary depending on initial student placement in mathematics and English. It is only a suggested plan of study for students and is not intended as a contract. Course availability may vary from fall to spring semester and may be subject to modification or change.

### Pre-Business Core Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ACCT 2110</td>
<td>Principles of Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 2120</td>
<td>Principles of Accounting II</td>
<td>3</td>
</tr>
<tr>
<td>BUSA 1110</td>
<td>Intro to Business</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 2110</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
</tbody>
</table>

### Major Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECS 105</td>
<td>Introduction to Information Technology</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1350G</td>
<td>Introduction to Statistics</td>
<td>3</td>
</tr>
</tbody>
</table>

### Electives

Select from the following Subject, minimum 10 credits to reach minimum 60 credits: ACCT, BLAW, BMGT, OATS, BUSA, C S, ECON, BFIN, MATH, MGMT, OECS

### Core Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 2110</td>
<td>Principles of Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 2120</td>
<td>Principles of Accounting II</td>
<td>3</td>
</tr>
<tr>
<td>BUSA 1110</td>
<td>Intro to Business</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 2110</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
</tbody>
</table>

### General Education Elective

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 1430G</td>
<td>Applications of Calculus I (Major Requirement)</td>
<td>3</td>
</tr>
</tbody>
</table>

### Major Requirements

Students may be required to take MATH 1215 Intermediate Algebra, depending on their math placement. MATH 1220G College Algebra, MATH 1430G Applications of Calculus I, or MATH 1350G Introduction to Statistics fulfills the general education requirement in math.

1. Select from the following Subject, minimum 10 credits to reach minimum 60 credits: ACCT, BLAW, BMGT, OATS, BUSA, C S, ECON, BFIN, MATH, MGMT, OECS

2. Students may be required to take MATH 1215 Intermediate Algebra, depending on their math placement. MATH 1220G, MATH 1430G, or MATH 1350G fulfills the general education requirement in math.

3. See the General Education section of the catalog for a full list of courses.

### Credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGMT 2110</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
</tbody>
</table>

### Total Credits

60

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1. Select from the following Subject, minimum 10 credits to reach minimum 60 credits: ACCT, BLAW, BMGT, OATS, BUSA, C S, ECON, BFIN, MATH, MGMT, OECS

2. Students may be required to take MATH 1215 Intermediate Algebra, depending on their math placement. MATH 1220G, MATH 1430G, or MATH 1350G fulfills the general education requirement in math.

3. See the General Education section of the catalog for a full list of courses.

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### Region 1 Emergency Medical Services (EMS) Basic

Emergency Medical Services (EMS) - Basic Certificate

OEEM 101. CPR for the Health Care Professional

1 Credit (1)

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 103. Heartsaver First Aid/CPR

1 Credit (1)

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 115. First Responder Prehospital Professional

3 Credits (2+3P)

Provides training in prehospital medical and traumatic emergencies. Consent of instructor required. Requires a C or better to pass. Restricted to majors. Corequisite(s): OEEM 101.

---

Program Manager: Dr. Marlene Chavez-Toivanen
Phone: (505) 287-6641
Email: marchave@nmsu.edu
Office: Martinez Hall

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New Mexico State University - Grants 149
OEEM 120. Emergency Medical Technician Basic
6 Credits (6)
EMT-Basic skills to include care of soft tissue and muscular/skeletal injuries, circulatory, nervous, general medical and respiratory emergencies. Requires a "C" or better to pass. May be repeated up to 6 credits. Consent of Instructor required.
Corequisite(s): OEEM 101,OEEM 120L,OEEM 121.
Prerequisite(s)/Corequisite(s): OEEM 153. Restricted to: OEEM majors. Restricted to Community Colleges campuses only.

OEEM 120 L. Emergency Medical Technician Basic Lab
2 Credits (6P)
EMT-Basic skills development with emphasis on assessment, skills competency and team work in patient care in the prehospital setting. May be repeated up to 2 credits.
Corequisite(s): OEEM 101, OEEM 120, OEEM 121.
Prerequisite(s)/Corequisite(s): OEEM 153. Restricted to: OEEM majors. Restricted to Community Colleges campuses only.

OEEM 121. Emergency Medical Technician Basic Field/Clinical
1 Credit (3P)
Covers the patient care experience provided through assigned shifts in the hospital and/or ambulance setting. Requires a "C" or better to pass. May be repeated up to 1 credits. Consent of Instructor required.
Prerequisite(s)/Corequisite(s): OEEM 101, OEEM 120, OEEM 120L OEEM 153. Restricted to: OEEM majors. Restricted to Community Colleges campuses only.

OEEM 122. Emergency Medical Technician Basic Advanced Field/Internship
2 Credits (6P)
Expanded patient care experience provided through assigned shifts in the hospital and/or ambulance setting. May be repeated up to 2 credits. Consent of Instructor required. Restricted to: OEEM majors. Restricted to Community Colleges campuses only.
Prerequisite(s): Current EMT-basic license and consent of instructor.

OEEM 150. Emergency Medical Technician Intermediate
5 Credits (5)
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. May be repeated up to 5 credits. Consent of Instructor required. Restricted to: OEEM majors. Restricted to Community Colleges campuses only.
Prerequisite(s): Current EMT-basic license, pretest and consent of instructor.

OEEM 150 L. Emergency Medical Technician Intermediate Lab
2 Credits (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.
Prerequisite(s)/Corequisite(s): OEEM 150,OEEM 151. Restricted to: OEEM majors. Restricted to Community Colleges campuses only.

OEEM 151. Emergency Medical Technician Intermediate Field/Clinical
2 Credits (6P)
Patient care experience provided through assigned shifts in the hospital and/or ambulance setting.
Prerequisite(s)/Corequisite(s): OEEM 150, OEEM 150 L. Restricted to: OEEM majors. Restricted to Community Colleges campuses only.

OEEM 153. Introduction to Anatomy and Physiology for the EMS Provider
3 Credits (3)
To properly assess and manage a patient, a prehospital provider must have a solid foundation in human anatomy and physiology. This course provides a systematic approach to building this foundation. Grade of "C" or better is required to pass the course. Consent of Instructor required. Restricted to Community Colleges campuses only.

OEEM 155. Special Topics
1-6 Credits
Specific topics to be listed in Schedule of Classes. May be repeated for a maximum of 10 credits.

OEEM 177. Emergency Medical Services Instructor
4 Credits (4)
Theory of student learning, methodology, instructional components, evaluation, and course coordination for the EMS profession. May be repeated up to 4 credits. Consent of Instructor required. Restricted to Community Colleges campuses only.

Prerequisite(s): Minimum of an EMT-Basic License required.

OEEM 201. Human Pathophysiology
3 Credits (2+3P)
Overview of anatomy and physiology. Emphasis on human body pathophysiology including a medical illness component. Requires a "C" or better to pass. May be repeated up to 3 credits. Consent of Instructor required. Restricted to: EMS, OEEM majors. Restricted to Community Colleges campuses only.

Prerequisite(s): OEEM 120, OEEM 120 L.

OEEM 202. EMT-Paramedic Respiratory Emergencies
3 Credits (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. Requires a "C" or better to pass. May be repeated up to 3 credits. Consent of Instructor required. Restricted to: EMS, OEEM majors. Restricted to Community Colleges campuses only.

Prerequisite(s): OEEM 212.

OEEM 203. EMT-Paramedic Trauma Emergencies
3 Credits (2+3P)
Study of the effects of trauma on the human body. Assessment and management of trauma patients and scenes, including vehicular extrication. May be repeated up to 3 credits. Consent of Instructor required. Restricted to: OEEM majors. Restricted to Community Colleges campuses only.

Prerequisite(s): OEEM 212.

OEEM 206. Introduction to Advanced Prehospital Care
3 Credits (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. Restricted to: Community Colleges only. Restricted to OEEM majors.

Prerequisite(s): OEEM 120.
OEEM 207. Introduction to Pharmacology
3 Credits (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. Restricted to: Community Colleges only. Restricted to OEEM majors.
Prerequisite(s): OEEM 120.

OEEM 210. Cardiac Rhythm Interpretation
3 Credits (2+3P)
Cardiac conduction system: electrophysiology, electrocardiogram, monitor, atrial, sinus, ventricular and junctional dysrhythmias, multiple lead EKG and 12 lead EKG interpretation. Requires a "C" or better to pass. May be repeated up to 3 credits. Consent of instructor required. Restricted to: OEEM, OEMS majors. Restricted to Community Colleges campuses only.
Prerequisite(s): OEEM 201, OEEM 206, OEEM 207.

OEEM 212. EMT-Paramedic Cardiovascular Emergencies
3 Credits (2+3P)
Review anatomy, physiology, and pathophysiology of cardiovascular system. Assessment and management of cardiovascular emergencies in the prehospital setting. Requires a "C" or better to pass. May be repeated up to 3 credits. Consent of instructor required. Restricted to: OEMS, OEEM majors. Restricted to Community Colleges campuses only.
Prerequisite(s): OEEM 210.

OEEM 213. EMT-Paramedic: Medical Emergencies I
3 Credits (2+3P)
Study of the disease process; assessment and management of neurological, endocrine, gastrointestinal, renal emergencies and infectious disease. Requires a "C" or better to pass. May be repeated up to 3 credits. Consent of instructor required. Restricted to: OEMS, OEEM majors. Restricted to Community Colleges campuses only.
Prerequisite(s): OEEM 212.

OEEM 214. EMT-Paramedic: Medical Environmental Emergencies II
3 Credits (2+3P)
Study of disease process, assessment, and management of poisoning, drug and alcohol abuse, environmental, behavioral, and geriatric emergencies. Requires a "C" or better to pass. May be repeated up to 3 credits. Consent of instructor required. Restricted to: OEMS, OEEM majors. Restricted to Community Colleges campuses only.
Prerequisite(s): OEEM 213.

OEEM 216. EMT-Paramedic: Reproductive and Childhood Emergencies
3 Credits (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. Restricted to: Community Colleges only.
Prerequisite(s): OEEM 214 and consent of instructor.

OEEM 218. Pediatric Advance Life Support for the Healthcare Professional
1 Credit (1)
Identify and respond to life threatening pediatric emergencies. Taught using the American Heart Association guidelines for course completion. Graded S/U.
Prerequisite: OEEM 101.

OEEM 219. Advance Cardiac Life Support for the Healthcare Provider
1 Credit (1)
Identify and respond to life threatening cardiac emergencies. Taught using the American Heart Association guidelines for course completion. Graded S/U.
Prerequisite: OEEM 101.

OEEM 230. EMT-Paramedic Clinical Experience I
3 Credits (9P)
Assigned clinical experiences in patient assessment and specific management techniques. Successful completion includes minimum required hours and completion of course objectives. Restricted to majors. Requires a C or better to pass.
Prerequisite: consent of instructor.

OEEM 231. EMT-Paramedic Clinical Experience II
3 Credits (9P)
Assigned clinical experiences in patient assessment and specific management techniques. Successful completion includes minimum required hours and completion of course objectives. Requires a "C" or better to pass. May be repeated up to 3 credits. Consent of instructor required.
Prerequisite(s)/Corequisite(s): OEEM 230. Restricted to: OEMS, OEEM majors. Restricted to Community Colleges campuses only.

OEEM 240. EMT-Paramedic Field Experience I
3 Credits (9P)
Advanced prehospital skills and knowledge. Successful completion of at least the minimum required hours and course objectives. Restricted to majors. Requires a C or better to pass.
Prerequisite: consent of instructor.

OEEM 241. EMT-Paramedic Field Experience II
3 Credits (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.
Prerequisite(s)/Corequisite(s): OEEM 240. Requires a C- or better to pass.

OEEM 242. EMT-Paramedic Field Internship
3 Credits (9P)
Emphasis on total patient care responsibility and team leadership skills. Successful completion includes meeting the minimum hours required and course objectives. Pre/ Consent of Instructor required. Restricted to: OEEM majors. Restricted to Community Colleges campuses only.
Prerequisite(s): OEEM 231, OEEM 241.

OEEM 243. EMT-Paramedic Preparation for Practice
2 Credits (2)
Comprehensive final program testing to prepare for licensing examination. Requires a "C" or better to pass. May be repeated up to 2 credits. Consent of instructor required. Restricted to: OEMS, OEEM majors. Restricted to Community Colleges campuses only.
Prerequisite(s): OEEM 242.

OEEM 253. Critical Care Emergency Medical Transport Program
6 Credits (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. Restricted to: Community Colleges only.
Prerequisite(s): OEEM 242.

Program Manager: Neal Gallagher
Phone: (505) 287-6654
Emergency Medical Services (EMS) - Basic - Certificate of Completion

This Certificate leads to the Associate of Applied Science in Region 1 EMS Intermediate.

30 Credits

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<tr>
<td>ENGL 1110G</td>
<td>Composition I</td>
<td>4</td>
</tr>
<tr>
<td>COMM 1130G</td>
<td>Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1215</td>
<td>Intermediate Algebra</td>
<td>3</td>
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EMS Core Requirements

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<tr>
<td>OEEM 101</td>
<td>CPR for the Health Care Professional</td>
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</tr>
<tr>
<td>OEEM 115</td>
<td>First Responder Prehospital Professional</td>
<td>3</td>
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<tr>
<td>OEEM 120</td>
<td>Emergency Medical Technician Basic</td>
<td>6</td>
</tr>
<tr>
<td>OEEM 120 L</td>
<td>Emergency Medical Technician Basic Lab</td>
<td>2</td>
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<td>OEEM 121</td>
<td>Emergency Medical Technician Basic Field/ Clinical</td>
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Required Courses

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<td>FYEX 1110</td>
<td>First-year Seminar</td>
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<tr>
<td>BIOL 2210</td>
<td>Human Anatomy and Physiology I for the Health Sciences</td>
<td>4</td>
</tr>
<tr>
<td>or AHS 153</td>
<td>Introduction to Anatomy and Physiology I</td>
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</table>

Total Credits 30

Note: It is highly recommended that students who plan to transfer to a Bachelor's degree program complete the BIOL 2210 Human Anatomy and Physiology I for the Health Sciences/BIOL 2225 Human Anatomy and Physiology II course sequence to maximize the credit transfer.

A Suggested Plan of Study

This roadmap is only a suggested plan of study in order to complete a Certificate in two semesters. It is not intended as a contract. Course availability may vary from fall to spring semester and may be subject to modification or change. Students are advised to earn a C or better to avoid repeating courses. This Plan presumes a student is ready for ENGL 1110G, Composition I and MATH 1215, Intermediate Algebra. Placement is determined by an English and Math Placement Test, ACT scores, or completing the course prerequisites.

First Year

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<tr>
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<td>CPR for the Health Care Professional</td>
<td>1</td>
</tr>
<tr>
<td>OEEM 120</td>
<td>Emergency Medical Technician Basic</td>
<td>6</td>
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<tr>
<td>OEEM 120 L</td>
<td>Emergency Medical Technician Basic Lab</td>
<td>2</td>
</tr>
<tr>
<td>OEEM 121</td>
<td>Emergency Medical Technician Basic Field/ Clinical</td>
<td>1</td>
</tr>
<tr>
<td>FYEX 1110</td>
<td>First-year Seminar</td>
<td>3</td>
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Credits 13

Spring

<table>
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<tr>
<th>Prefix</th>
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<tbody>
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<td>ENGL 1110G</td>
<td>Composition I</td>
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<td>Intermediate Algebra</td>
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</tr>
<tr>
<td>OEEM 115</td>
<td>First Responder Prehospital Professional</td>
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</tr>
</tbody>
</table>
OEEM 121. Emergency Medical Technician Basic Field/Clinical
1 Credit (3P)
Covers the patient care experience provided through assigned shifts in
the hospital and/or ambulance setting. Requires a "C" or better to pass.
May be repeated up to 1 credits. Consent of Instructor required.
Prerequisite(s)/Corequisite(s): OEEM 101, OEEM 120, OEEM 120L
OEEM 153. Restricted to: OEEM majors. Restricted to Community
Colleges campuses only.

OEEM 122. Emergency Medical Technician Basic Advanced Field/
Internship
2 Credits (6P)
Expanded patient care experience provided through assigned shifts in
the hospital and/or ambulance setting. May be repeated up to 2 credits.
Consent of Instructor required. Restricted to: OEEM majors. Restricted to
Community Colleges campuses only.
Prerequisite(s): Current EMT-basic license and consent of instructor.

OEEM 150. Emergency Medical Technician Intermediate
5 Credits (5)
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. May be repeated up to 5 credits. Consent of Instructor
required. Restricted to: OEEM majors. Restricted to Community Colleges
campuses only.
Prerequisite(s): Current EMT-basic license, pretest and consent of
instructor.

OEEM 150 L. Emergency Medical Technician Intermediate Lab
2 Credits (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.
Prerequisite(s)/Corequisite(s): OEEM 150, OEEM 151. Restricted to: OEEM
majors. Restricted to Community Colleges campuses only.

OEEM 151. Emergency Medical Technician Intermediate Field/Clinical
2 Credits (6P)
Patient care experience provided through assigned shifts in the hospital
and/or ambulance setting.
Prerequisite(s)/Corequisite(s): OEEM 150, OEEM 150 L. Restricted to:
OEEM majors. Restricted to Community Colleges campuses only.

OEEM 153. Introduction to Anatomy and Physiology for the EMS Provider
3 Credits (3)
To properly assess and manage a patient, a prehospital provider must
have a solid foundation in human anatomy and physiology. This course
provides a systematic approach to building this foundation. Grade of "C"
or better is required to pass the course. Consent of Instructor required.
Restricted to Community Colleges campuses only.

OEEM 155. Special Topics
1-6 Credits
Specific topics to be listed in Schedule of Classes. May be repeated for
a maximum of 10 credits.

OEEM 177. Emergency Medical Services Instructor
4 Credits (4)
Theory of student learning, methodology, instructional components,
evaluation, and course coordination for the EMS profession. May be
repeated up to 4 credits. Consent of Instructor required. Restricted to
Community Colleges campuses only.
Prerequisite(s): Minimum of an EMT-Basic License required.

OEEM 201. Human Pathophysiology
3 Credits (2+3P)
Overview of anatomy and physiology. Emphasis on human body
pathophysiology including a medical illness component. Requires a "C"
or better to pass. May be repeated up to 3 credits. Consent of Instructor
required. Restricted to: OEMS, OEEM majors. Restricted to Community
Colleges campuses only.
Prerequisite(s): OEEM 120, OEEM 120 L.

OEEM 202. EMT-Paramedic Respiratory Emergencies
3 Credits (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. Requires a "C" or better
to pass. May be repeated up to 3 credits. Consent of Instructor required.
Restricted to: OEMS, OEEM majors. Restricted to Community Colleges
campuses only.
Prerequisite(s): OEEM 212.

OEEM 203. EMT-Paramedic Trauma Emergencies
3 Credits (2+3P)
Study of the effects of trauma on the human body. Assessment and
management of trauma patients and scenes, including vehicular
extrication. May be repeated up to 3 credits. Consent of Instructor
required. Restricted to: OEEM majors. Restricted to Community Colleges
campuses only.
Prerequisite(s): OEEM 212.

OEEM 204. Introduction to Advanced Prehospital Care
3 Credits (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. Restricted to:
Community Colleges only. Restricted to OEEM majors.
Prerequisite(s): OEEM 120.

OEEM 205. Introduction to Pharmacology
3 Credits (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. Restricted to: Community Colleges
only. Restricted to OEEM majors.
Prerequisite(s): OEEM 120.

OEEM 210. Cardiac Rhythm Interpretation
3 Credits (2+3P)
Cardiac conduction system: electrophysiology, electrocardiogram,
monitor, atrial, sinus, ventricular and junctional dysrhythmias, multiple
lead EKG and 12 lead EKG interpretation. Requires a "C" or better to
pass. May be repeated up to 3 credits. Consent of Instructor required.
Restricted to: OEEM, OEMS majors. Restricted to Community Colleges
campuses only.
Prerequisite(s): OEEM 201, OEEM 206, OEEM 207.

OEEM 212. EMT-Paramedic Cardiovascular Emergencies
3 Credits (2+3P)
Review anatomy, physiology, and pathophysiology of cardiovascular
system. Assessment and management of cardiovascular emergencies in
the prehospital setting. Requires a "C" or better to pass. May be repeated
up to 3 credits. Consent of Instructor required. Restricted to: OEMS, OEEM
majors. Restricted to Community Colleges campuses only.
Prerequisite(s): OEEM 210.
OEEM 213. EMT-Paramedic: Medical Emergencies I  
3 Credits (2+3P)  
Study of the disease process; assessment and management of neurological, endocrine, gastrointestinal, renal emergencies and infectious disease. Requires a "C" or better to pass. May be repeated up to 3 credits. Consent of Instructor required. Restricted to: OEMS majors. Restricted to Community Colleges campuses only.  
Prerequisite(s): OEEM 212.

OEEM 214. EMT--Paramedic: Medical Environmental Emergencies II  
3 Credits (2+3P)  
Study of disease process, assessment, and management of poisoning, drug and alcohol abuse, environmental, behavioral and geriatric emergencies. Requires a "C" or better to pass. May be repeated up to 3 credits. Consent of Instructor required. Restricted to: OEMS, OEEM majors. Restricted to Community Colleges campuses only.  
Prerequisite(s): OEEM 213.

OEEM 216. EMT-Paramedic: Reproductive and Childhood Emergencies  
3 Credits (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. Restricted to: Community Colleges only.  
Prerequisite(s): OEEM 214 and consent of instructor.

OEEM 218. Pediatric Advance Life Support for the Healthcare Professional  
1 Credit (1)  
Identify and respond to life threatening pediatric emergencies. Taught using the American Heart Association guidelines for course completion. Graded S/U.  
Prerequisite: OEEM 101.

OEEM 219. Advance Cardiac Life Support for the Healthcare Provider  
1 Credit (1)  
Identify and respond to life threatening cardiac emergencies. Taught using the American Heart Association guidelines for course completion. Graded S/U.  
Prerequisite: OEEM 101.

OEEM 230. EMT-Paramedic Clinical Experience I  
3 Credits (9P)  
Assigned clinical experiences in patient assessment and specific management techniques. Successful completion includes minimum required hours and completion of course objectives. Restricted to majors. Requires a C or better to pass.  
Prerequisite: consent of instructor.  
Prerequisite(s)/Corequisite(s): OEEM 231, OEEM 241.

OEEM 231. EMT-Paramedic Clinical Experience II  
3 Credits (9P)  
Assigned clinical experiences in patient assessment and specific management techniques. Successful completion includes minimum required hours and completion of course objectives. Requires a "C" or better to pass. May be repeated up to 3 credits. Consent of Instructor required.  
Prerequisite(s)/Corequisite(s): OEEM 230. Restricted to: OEMS, OEEM majors. Restricted to Community Colleges campuses only.

OEEM 240. EMT-Paramedic Field Experience I  
3 Credits (9P)  
Advanced prehospital skills and knowledge. Successful completion of at least the minimum required hours and course objectives. Restricted to majors. Requires a C or better to pass.  
Prerequisite: consent of instructor.

OEEM 241. EMT-Paramedic Field Experience II  
3 Credits (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.  
Prerequisite(s)/Corequisite(s): OEEM 240. Requires a C- or better to pass.

OEEM 242. EMT-Paramedic Field Internship  
3 Credits (9P)  
Emphasis on total patient care responsibility and team leadership skills. Successful completion includes meeting the minimum hours required and course objectives. Pre/ Consent of Instructor required. Restricted to: OEMS majors. Restricted to Community Colleges campuses only.  
Prerequisite(s): OEEM 231, OEEM 241.

OEEM 243. EMT-Paramedic Preparation for Practice  
2 Credits (2)  
Comprehensive final program testing to prepare for licensing examination. Requires a "C" or better to pass. May be repeated up to 2 credits. Consent of Instructor required. Restricted to: OEMS, OEEM majors. Restricted to Community Colleges campuses only.  
Prerequisite(s): OEEM 242.

OEEM 253. Critical Care Emergency Medical Transport Program  
6 Credits (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. Restricted to: Community Colleges only.  
Prerequisite(s): Licensed Paramedic, Registered Nurse or Registered Respiratory Therapist with one or more years experience.

Program Manager: Neal Gallagher  
Phone: (505) 287-6654  
Email: ngallagh@nmsu.edu  
Office: Lucy Belle Ma Hall

**Emergency Medical Services (EMS) Intermediate - Associate of Applied Science**

**60 credits**

Students must complete all University degree requirements, which include: General Education requirements and elective credits to total at least 60 credits. Developmental coursework will not count towards the degree requirements and/or elective credits, but may be needed in order to take the necessary English and Mathematics coursework. New Mexico General Education

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<td><strong>12-14</strong></td>
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<td>Area I: Communications</td>
<td>ENGL 1110G</td>
<td>Composition I</td>
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<tr>
<td>Area II: Laboratory Sciences</td>
<td>Select one 4 credit course from the following:</td>
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<tr>
<td>Area III: Laboratory Sciences</td>
<td>BIOL 1120G</td>
<td>Human Biology</td>
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<tr>
<td>&amp; BIOL 1120L</td>
<td>and Human Biology Laboratory</td>
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<td>Course Code</td>
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<tr>
<td>BIOL 2110G &amp; BIOL 2110L</td>
<td>Principles of Biology: Cellular and Molecular Biology and Principles of Biology: Cellular and Molecular Biology Laboratory</td>
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<td>CHEM 1120G</td>
<td>Introduction to Chemistry Lecture and Laboratory (non majors) (or higher CHEM)</td>
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**Area IV: Social/Behavioral Sciences**

Select one from the following:

- ANTH 1115G | Introduction to Anthropology
- CEPY 1120G | Human Growth and Behavior
- PSYC 1110G | Introduction to Psychology
- SOCI 1110G | Introduction to Sociology
- or SOCI 2310G | Contemporary Social Problems

**Area V: Humanities**

Select one from the following:

- HIST 1110G | United States History I
- or HIST 1120G | United States History II
- PHIL 1115G | Introduction to Philosophy
- or PHIL 2110G | Introduction to Ethics
- ENGL 1410G | Introduction to Literature
- ENGL 2520G | Film as Literature
- ENGL 2650G | World Literature I

**General Education Elective**

- COMM 1130G | Public Speaking
- or COMM 1115G | Introduction to Communication

**Core Requirements**

- OEEM 101 | CPR for the Health Care Professional
- OEEM 120 | Emergency Medical Technician Basic
- OEEM 120 L | Emergency Medical Technician Basic Lab
- OEEM 121 | Emergency Medical Technician Basic Field/Clinical
- OEEM 150 | Emergency Medical Technician Intermediate
- OEEM 150 L | Emergency Medical Technician Intermediate Lab
- OEEM 151 | Emergency Medical Technician Intermediate Field/Clinical
- OECS 105 | Introduction to Information Technology

**Other Required Courses**

- Electives from recommended list

**Electives, to bring the total credits to 60**

Select up to a minimum of 21 recommended elective credits to reach 60 credits.

- AHS 120 | Medical Terminology
- BIOL 2210 | Human Anatomy and Physiology I for the Health Sciences
- or AHS 153 | Introduction to Anatomy and Physiology I
- BIOL 2225 | Human Anatomy and Physiology II
- NA 104 | Nursing Assistant Fundamentals
- & 104 L | and Nursing Assistant Fundamentals Lab
- NA 105 | Nursing Assistant Clinicals
- NAV 111 | Elementary Navajo I
- OEE 115 | First Responder Prehospital Professional
- SPAN 1110 | Spanish I
- SPAN 1120 | Spanish II

**Total Credits** 60

*1* Each course selected must be from a different area and students cannot take multiple courses in the same area.

2 See the General Education section of the catalog for a full list of courses.

**Note:** It is highly recommended that students who plan to transfer to a Bachelor’s degree program complete the BIOL 2210 and BIOL 2225 course sequence. Please consult the University Catalog of your choice for program details.

**A Suggested Plan of Study**

This roadmap is only a suggested plan of study in order to complete an Associate degree in two years. It is not intended as a contract. Course availability may vary from fall to spring semester and may be subject to modification or change. Students are advised to earn a C or better to avoid repeating courses. This Plan presumes a student is ready for ENGL 1110G, Composition I and MATH 1215, Intermediate Algebra. Placement is determined by an English and Math Placement Test, ACT scores, or completing the course prerequisites.

**First Year**

**Fall**

- OEEM 101 | CPR for the Health Care Professional 1
- OEEM 120 | Emergency Medical Technician Basic 6
- OEEM 120 L | Emergency Medical Technician Basic Lab 2
- OEEM 121 | Emergency Medical Technician Basic Field/Clinical 1
- ENGL 1110G | Composition I 4
- AREA III: Select one from the following 4
  - BIOL 1120G & BIOL 1120L | Human Biology and Human Biology Laboratory
  - BIOL 2110G & BIOL 2110L | Principles of Biology: Cellular and Molecular Biology and Principles of Biology: Cellular and Molecular Biology Laboratory
  - CHEM 1120G | Introduction to Chemistry Lecture and Laboratory (non majors)
- Electives from recommended list 3

**Credits** 16

**Spring**

- OEEM 150 | Emergency Medical Technician Intermediate 5
- OEEM 150 L | Emergency Medical Technician Intermediate Lab 2
- OEEM 151 | Emergency Medical Technician Intermediate Field/Clinical 2
- Electives from recommended list 6

**Credits** 15

**Total Credits** 60

**Second Year**

**Fall**

- COMM 1130G | Public Speaking 3
- or COMM 1115G | Introduction to Communication
- Electives from recommended list 12

**Credits** 15

**Spring**

- OEEM 150 | Emergency Medical Technician Intermediate 5
- OEEM 150 L | Emergency Medical Technician Intermediate Lab 2
- OEEM 151 | Emergency Medical Technician Intermediate Field/Clinical 2
- Electives from recommended list 6

**Credits** 15

**Total Credits** 60

Program Manager: Neal Gallagher
Phone: (505) 287-6654
Email: ngallagh@nmsu.edu
Office: Lucy Belle Ma Hall

Social Services

Social Services - Associate Degree (p. 156)

Program Manager: Megan Stoneking
Phone: (505) 287-6679
Email: stmegan@nmsu.edu
Office: Room 113D, Martinez Hall, 2nd Floor

Social Work - Associate of Social Services

60 credits

The Associate degree in Social Services prepares students for entry-level positions in a social services setting. Courses taken for this degree may be used to transfer to NMSU Las Cruces for students wishing to pursue a bachelor’s degree in Social Work or Sociology.

Students must complete all University degree requirements, which include: General Education requirements and elective credits to total at least 60 credits. Developmental coursework will not count towards the degree requirements and/or elective credits, but may be needed in order to take the necessary English and Mathematics coursework.

The New Mexico General Education course list can be found here.

Select one from the following:

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH 1115G</td>
<td>Orientation in Art</td>
<td>3</td>
</tr>
<tr>
<td>or ARTS 1145G</td>
<td>Visual Concepts</td>
<td></td>
</tr>
<tr>
<td>MUSC 1130G</td>
<td>Music Appreciation: Western Music</td>
<td></td>
</tr>
<tr>
<td>or MUSC 1110G</td>
<td>Music Appreciation: Jazz</td>
<td></td>
</tr>
<tr>
<td>THEA 1110G</td>
<td>Introduction to Theatre</td>
<td></td>
</tr>
</tbody>
</table>

General Education Elective

SOWK 2110G Introduction to Human Services & Social Work (Core Requirement) 3

Core Requirements

Second Language

Select 8 credits from the following:

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPAN 1110</td>
<td>Spanish I</td>
<td></td>
</tr>
<tr>
<td>or SPAN 1120</td>
<td>Spanish II</td>
<td></td>
</tr>
</tbody>
</table>

Other Course Requirements

OECS 105 Introduction to Information Technology 3

PSYC 2311 A Study of Substance Abuse through Learning 3

or PSYC 2230 Psychology of Adjustment

SOCI 1110G Introduction to Sociology 3

Concentration Areas

Paraprofessional or NMSU School of Social Work Option - see options below 6

Select a minimum of 5 credits to bring the total credits to 60. 2 5

Total Credits 60

Paraprofessional Option

Select two from the following:

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 1115G</td>
<td>Introduction to Anthropology</td>
<td></td>
</tr>
<tr>
<td>or ANTH 1140G</td>
<td>Introduction to Cultural Anthropology</td>
<td></td>
</tr>
<tr>
<td>CJUS 2120</td>
<td>Criminal Courts and Procedure</td>
<td></td>
</tr>
<tr>
<td>GNDR 2110G</td>
<td>Introduction to Women, Gender, and Sexuality Studies</td>
<td></td>
</tr>
<tr>
<td>or GNDR 2120G</td>
<td>Representing Women Across Cultures</td>
<td></td>
</tr>
<tr>
<td>HMSV 2110</td>
<td>Case Management</td>
<td></td>
</tr>
<tr>
<td>PHLS 1110G</td>
<td>Personal Health &amp; Wellness</td>
<td></td>
</tr>
<tr>
<td>POLS 1120G</td>
<td>American National Government</td>
<td></td>
</tr>
<tr>
<td>or POLS 1110G</td>
<td>Introduction to Political Science</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 6
NMSU School of Social Work Option

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPAN 2110</td>
<td>Spanish III</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 2120</td>
<td>Spanish IV</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>6</strong></td>
</tr>
</tbody>
</table>

A Suggested Plan of Study

This roadmap assumes student placement into ENGL 1110G Composition I and a College level MATH, such as MATH 1220G, College Algebra, and demonstrates how to complete an Associate degree in two years. The contents and order of this roadmap may vary depending on initial student placement in mathematics and English. It is only a suggested plan of study for students and is not intended as a contract. Course availability may vary from fall to spring semester and may be subject to modification or change. Students are advised to earn a C or better in courses to avoid repeating courses. Students may take a Spanish Language test and begin at that point, but must be proficient through the first year. Students select either the Paraprofessional Option or the NMSU School of Social Work Option, with the Cultural Emphasis Requirement. This Plan follows the Paraprofessional Option; students wanting the Cultural Emphasis need to plan their language courses earlier in the sequence.

First Year

**Fall**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 1110G</td>
<td>Composition I</td>
</tr>
<tr>
<td>MATH 1350G (or MATH 1130G)</td>
<td>Introduction to Statistics (or Survey of Mathematics)</td>
</tr>
<tr>
<td>OECS 105</td>
<td>Introduction to Information Technology</td>
</tr>
<tr>
<td>PSYC 1110G</td>
<td>Introduction to Psychology</td>
</tr>
<tr>
<td>SOWK 2110G</td>
<td>Introduction to Human Services &amp; Social Work</td>
</tr>
<tr>
<td><strong>Credits</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

**Spring**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 2210G (or ENGL 2221G)</td>
<td>Professional &amp; Technical Communication (or Writing in the Humanities and Social Science)</td>
</tr>
<tr>
<td>COMM 1115G (or COMM 1130G)</td>
<td>Introduction to Communication (or Public Speaking)</td>
</tr>
<tr>
<td>PSYC 2230 (or PSYC 2311)</td>
<td>Psychology of Adjustment (or A Study of Substance Abuse through Learning)</td>
</tr>
<tr>
<td>SOWK 2110G</td>
<td>Introduction to Human Services &amp; Social Work</td>
</tr>
<tr>
<td><strong>Credits</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

Second Year

**Fall**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 1120G (or BIOL 1120L)</td>
<td>Human Biology (and Human Biology Laboratory)</td>
</tr>
<tr>
<td>CEPI 1120G</td>
<td>Human Growth and Behavior</td>
</tr>
<tr>
<td><strong>Second Language I</strong></td>
<td><strong>4</strong></td>
</tr>
<tr>
<td>Select course from Paraprofessional Option</td>
<td><strong>3</strong></td>
</tr>
<tr>
<td><strong>Credits</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

**Spring**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Second Language II</td>
<td><strong>4</strong></td>
</tr>
<tr>
<td>Select course from Paraprofessional Option</td>
<td><strong>3</strong></td>
</tr>
<tr>
<td><strong>Credits</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

Electives: **12**

**Total Credits: 60**

Program Manager: Megan Stoneking
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Office: Room 113D, Martinez Hall, 2nd Floor

Southwest Heritage Studies

Southwest Heritage Studies - Certificate (p. 157)

Program Manager: Alfred Gene Romero
Phone: (505) 287-6668
Email: agene@nmsu.edu
Office: Room 306, McClure Hall

Southwest Heritage Studies - Certificate on Completion

33-37 Credits

The Certificate in Southwest Heritage Studies will prepare students for service in local museums, parks, visitor centers, historical centers, and cultural facilities to work as interpreters, tour guides, docents, technicians, or in any other capacity. The certificate also will enhance employment prospects for local students applying to hotel front desks, restaurants, travel agencies, realtors, retail outlets and other businesses with a tourist clientele. The curriculum focuses on New Mexico's rich cultural and natural heritage. Students will gain first-hand knowledge of local culture and tourist attractions which will improve their ability to communicate with a diverse public. The capstone event is either an internship with a local tourist-oriented center or an independent study requiring students to visit at least 10 local tourist sites as well as web sites of other major attractions.

This Certificate is 100% embedded in, and leads to, the Associate of Arts at NMSU Grants.

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 1110G</td>
<td>Composition I</td>
<td>4</td>
</tr>
<tr>
<td>COMM 1115G</td>
<td>Introduction to Communication</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1215</td>
<td>Intermediate Algebra</td>
<td>3</td>
</tr>
<tr>
<td><strong>Select 3-4 credits from the following:</strong></td>
<td><strong>3-4</strong></td>
<td></td>
</tr>
<tr>
<td>BIOL 2610G (or BIOL 2610L)</td>
<td>Principles of Biology: Biodiversity, Ecology, and Evolution</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 2996</td>
<td>Special Topics</td>
<td>3</td>
</tr>
<tr>
<td><strong>Select one from the following:</strong></td>
<td><strong>4</strong></td>
<td></td>
</tr>
<tr>
<td>ASTR 1115G</td>
<td>Introduction to Astronomy Lecture &amp; Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 1110G</td>
<td>Physical Geology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 1140G</td>
<td>Introduction to Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 1120G (or GEOG 1130G)</td>
<td>World Regional Geography (or Human Geography)</td>
<td>3</td>
</tr>
<tr>
<td><strong>BCIS 1110</strong></td>
<td>Introduction to Information Systems</td>
<td><strong>3</strong></td>
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</table>

Grants Required Course
or OECS 105 Introduction to Information Technology

Local History Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>HIST 2110</td>
<td>Survey of New Mexico History</td>
<td>3</td>
</tr>
<tr>
<td>HIST 2996</td>
<td>Special Topics</td>
<td>1-3</td>
</tr>
</tbody>
</table>

Electives

Select at least one from the following: 3-4

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>ANTH 2150</td>
<td>Special Topics</td>
</tr>
<tr>
<td>BIOL 2996</td>
<td>Special Topics</td>
</tr>
<tr>
<td>ENGL 1410G</td>
<td>Introduction to Literature</td>
</tr>
<tr>
<td>&amp; ENGL 2650G</td>
<td>and World Literature I</td>
</tr>
<tr>
<td>GEOL 2996</td>
<td>Special Topics</td>
</tr>
<tr>
<td>NAV 101</td>
<td>Introduction to Navajo Studies</td>
</tr>
<tr>
<td>NAV 111</td>
<td>Elementary Navajo I</td>
</tr>
<tr>
<td>SPAN 1110</td>
<td>Spanish I</td>
</tr>
<tr>
<td>&amp; SPAN 1120</td>
<td>Spanish II</td>
</tr>
<tr>
<td>SPAN 2110</td>
<td>Spanish III</td>
</tr>
<tr>
<td>&amp; SPAN 2120</td>
<td>Spanish IV</td>
</tr>
</tbody>
</table>

Total Credits 33-37

A Suggested Plan of Study

This roadmap is only a suggested plan of study in order to complete this Certificate in two semesters. It is not intended as a contract. Course availability may vary from fall to spring semester and may be subject to modification or change. Students are advised to earn a C or better to avoid repeating courses. This plan presumes the student is ready for ENGL 1110 and MATH 1215 as determined by the English and Math Placement test, an ACT score, or passing the prerequisite course.

First Year

Fall Credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 1110G</td>
<td>Composition I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 1215</td>
<td>Intermediate Algebra</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 2610G</td>
<td>Principles of Biology: Biodiversity, Ecology,</td>
<td>4</td>
</tr>
<tr>
<td>&amp; BIOL 2610L</td>
<td>and Evolution</td>
<td></td>
</tr>
<tr>
<td>O ECS 105</td>
<td>Introduction to Information Technology</td>
<td>3</td>
</tr>
<tr>
<td>or BCIS 1110</td>
<td>or Introduction to Information Systems</td>
<td></td>
</tr>
<tr>
<td>HIST 2110</td>
<td>Survey of New Mexico History</td>
<td>3</td>
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</tbody>
</table>

Credits 17

Spring

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTR 1115G</td>
<td>Introduction to Astronomy Lecture &amp; Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>or GEOL 1110G</td>
<td>or Physical Geology</td>
<td></td>
</tr>
<tr>
<td>COMM 1115G</td>
<td>Introduction to Communication</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 1140G</td>
<td>Introduction to Cultural Anthropology</td>
<td>3</td>
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</table>

Credits 13

Second Year

Fall Credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 2996</td>
<td>Special Topics</td>
<td>1-3</td>
</tr>
<tr>
<td>GEOG 1120G</td>
<td>World Regional Geography</td>
<td>3</td>
</tr>
<tr>
<td>or GEOG 1130G</td>
<td>or Human Geography</td>
<td></td>
</tr>
</tbody>
</table>

Elective from Certificate list 3-4

Credits 7-10

Total Credits 34-37

Program Manager: Alfred Gene Romero
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Email: agene@nmsu.edu
Office: Room 306, McClure Hall

Web Fundamentals

FDMA 1110. Film History
3 Credits (3)

This course surveys the history of cinema -investigating the process by which the original "cinema of attractions" evolved into a globally dominant form of visual storytelling. We will explore the development of cinema both as an art form and as an industry, and consider the technological, economic, cultural factors, and key international movements that shape it.

Learning Outcomes
1. Develop appreciation for the history of cinema.
2. Develop knowledge of the key eras in the history of US cinema.
3. Learn the characteristics of major movements in international cinema.
4. Explain technological innovations that were necessary for, and integral to, the advancement of cinema.
5. Recognize the various elements that go into telling a story in cinema.
FDMA 1120. Desktop Publishing  
3 Credits (2+2P)  
This course is designed to teach introductory skills for designing and creating publications and presentations with layout software. The course will focus on graphics and typographic design, fonts, and other skills for print and web publishing.  
**Learning Outcomes**  
1. Demonstrate knowledge of fundamental features and navigation of desktop publishing software.  
2. Combine text and images for effective communication.  
3. Develop a balanced composition through use of color, contrast, and alignment.  
4. Place images within a composition and wrap around text.  
5. Produce documents with professional layout and typography skills.  
6. Create attractive and effective designs.  
7. Combine knowledge of typography, images, and design principles to produce professional print and web media.  
8. Create or add to a professional design portfolio for future use.

FDMA 1210. Digital Video Production I  
3 Credits (2+4P)  
An introduction to digital video production. Students learn camera operation, lights and audio equipment. Hands-on production is completed in the studio and on location.  
**Learning Outcomes**  
1. Plan and produce a digital video project  
2. Apply post-production workflow  
3. Work in team and as individual to complete digital video projects.

FDMA 1220. Introduction to Digital Video Editing  
3 Credits (3)  
In this course, students learn the basics of the post-production process for non-linear video editing. Students work with multiple video formats and create short movies for multiple distribution platforms. Skills include media management and professional terminology. Sections on the Main Campus will be restricted to CMI students.  
**Learning Outcomes**  
1. Define concepts related to digital video editing.  
2. Use non-linear video editing software for editing a short film  
3. Enhance storytelling through the use of continuity, timing, cutaways, intercutting, compositing, transitioning, jump cutting, montaging and animating.  
4. Use text, titles, transitions, video effects, sound effects, dialogue, and visual assets for digital video editing.

FDMA 1260. Introduction to Digital Media  
1-3 Credits (1-3)  
Explores concepts of how text, graphics, sound, images and video come together in a digital media program and researching new trends and current issues related to media applications and design. Students will be involved in teamwork, communication and workplace interaction simulation. May be repeated up to 12 credits. Restricted to Community Colleges campuses only.  
**Learning Outcomes**  
1. Describe and identify the principal components and terminology of digital media.  
2. Analyze and examine the use of digital media as a communication tool  
3. Plan and implement a digital media project  
5. Create projects using a variety of digital media tools  
6. Demonstrate a working knowledge of copyright and usage rights  
7. Present completed projects in a professional manner for critique.

FDMA 1360. Web Design I  
3 Credits (2+2P)  
This course provides an introduction to web development techniques, theory, and design. Students will learn HTML, CSS application, and strategies for effective site navigation and design, along with industry standard web editing software to develop various websites. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.  
**Prerequisite(s):** ARTS 1520 OR FDMA 1515.  
**Learning Outcomes**  
1. Acquire and utilize web design terminology.  
2. Create basic web pages using HTML.  
3. Demonstrate how to use industry-standard, web editing software.  
4. Design professional pages that are easy to navigate and quick to load.  
5. Develop a basic comprehension of CSS  
6. Prepare and export a variety of graphics to be used online.  
7. Compare and contrast designing for web media vs. print media.  
8. Analyze the importance of web presence in today's business/social climate

FDMA 1410. Audio Production I  
3 Credits (2+2P)  
Students will learn about and apply essential tools and techniques in analog and digital audio production. Topics include acoustic science, microphones, recording and mixing techniques, analog and digital audio hardware and software, including, multi-track, computer-based recording and editing systems. Restricted to: Community Colleges only.  
**Prerequisite(s):** FDMA 1210 and FDMA 2410.  
**Learning Outcomes**  
1. Apply tools and techniques in analog and digital audio production  
2. Illustrate the fundamentals of acoustic science.  
3. Model professional behavior used in audio recording.
FDMA 1415. Principles of Sound
3 Credits (2+2P)
The creation of a professional quality original media soundtrack is possible for relatively low production/post production cost. This class is designed to give the student an overview of creating sound for a variety of media. Topics include acoustic principles, sound design, audio hardware, recording techniques; and editing, processing, and multitrack mixing, using software applications. Restricted to: Community Colleges only.
Prerequisite(s)/Corequisite(s): FDMA 1220.
Learning Outcomes
1. Record and edit wild sound effects and synced dialogue
2. Discover, upload, and edit online music, ambience and sound effect loops
3. Implement audio design theories
4. Create an aesthetic soundtrack which incorporates multiple elements and dimensions
5. Design, edit, process, mix and master a synced multi-track soundtrack
6. Demonstrate capable use of digital audio production and post-production workflow
7. Produce short audio projects which meet media industry technical standards

FDMA 1510. Introduction to 3D Animation
3 Credits (3)
This course provides an overview of 3D animation production processes. 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. Students will review and critique other's animation, as well as plan and produce original animation for review by classmates and as part of a CGI demo reel.
Prerequisite(s): FDMA 2382 or FDMA 2381 or consent of instructor.
Learning Outcomes
1. Demonstrate a fundamental understanding of 3D animation history and principles.
2. Analyze animation work of other artists.
3. Appropriately utilize the various media technologies for digital 3D animation.
4. Demonstrate and apply basic techniques of digital 3D animation.
5. Demonstrate and apply basic processes of creating CGI for a narrative.
6. Apply some basic strategies for developing and creating a story visually, and create original animations.
7. Present original animations to instructor and classmates for critique.
8. Create a CGI demo reel of work completed during the course.

FDMA 1515. Introduction to Digital Image Editing - Photoshop
3 Credits (2+2P)
In this course, students will learn how to use the tools in Adobe Photoshop to create new images and edit existing images. Tools used will include selections, layers, and adjustments, among other pixel editing tools. Basic composition and output will be emphasized in all projects. May be repeated for a maximum of 6 credits.
Learning Outcomes
1. Make and refine selections
2. Adjust color and tone in an image
3. Eliminate unwanted objects in an image
4. Apply layers to organize and create effects
5. Create brushes, styles and vector shapes
6. Prepare image for print and screen output
7. Apply masking and layers to non-destructively edit an image
8. Effectively utilize blending modes and layer styles
9. Apply adjustment layers
10. Apply design principles including typography

FDMA 1531. Evolution of Electronic Games
3 Credits (2+2P)
Focus on the evolution of video games and how they have shaped mainstream entertainment. May be repeated up to 6 credits.

FDMA 1535. Introduction to Illustrator
3 Credits (2+2P)
Students receive instruction on vector graphics creation using vector illustration software. The students will create professional-quality artwork for print publishing and multimedia graphics. Instruction includes creating and manipulating basic shapes, drawing with the pen tool, using various brushes, working with type and preparing graphics for web, print, and digital publication. May be repeated for a maximum of 6 credits.
Learning Outcomes
1. Apply a variety of shape blending options
2. Create and apply new gradients
3. Apply Gradient Meshes and Envelopes
4. Create symbols, brushes and vector shapes
5. Apply Pathfinder and other effects
6. Effectively utilize the pen tool to draw and edit shapes
7. Effectively utilize Vector tools
8. Prepare image for print and screen output
9. Apply clipping masks
10. Prepare image for use in another program
11. Apply design principles including typography
FDMA 1535. Introduction to the Creative Media Industry  
3 Credits (3)  
This class is an introductory course for students who are beginning their understanding of Media and how it affects them and our society. It offers a broad-stroked view of the entire industry including Marketing, Production, History, Jobs, Design, Architecture, New Media Literacy, and industry standards. Students will listen to experts in the field, get involved in open discussions about the industry and use new information to complete hands-on individual & group assignments.  
Learning Outcomes  
1. The basic philosophies and methods that guide people working in the Creative Media industry.  
2. Knowledge of a wide variety of different jobs, qualifications and paradigms used in the industry.  
3. Marketing, Production, Budgets, History, New Media, Inspiration and other aspects of the industry.  
4. An accurate view of the Creative Media field.  

FDMA 1630. Principles of Design  
3 Credits (2+2P)  
This course will explore how we see and use visuals to communicate information. Students will develop critical thinking skills in applying concepts of basic design principles. Students will apply the concepts with hands-on and analysis assignments. These concepts will then be applied to design for advertising, print, digital media, and web design. The business of design will also be covered with emphasis on client relations and networking Restricted to: Community Colleges only. Prerequisite(s): FDMA 1535  
Learning Outcomes  
1. Practice Creativity  
2. Plan a Design project  
3. Demonstrate the effective use of Emphasis Contrast  
4. Demonstrate the effective use of Balance and Alignment  
5. Demonstrate the effective use of Harmony and Repetition  
6. Demonstrate the effective use of Flow, Movement, and Rhythm  
7. Demonstrate the effective use of Simplicity and Economy  
8. Effectively apply basic color theory  
9. Demonstrate the effective use of Typography principles  
10. Apply design principles to Screen Print Projects  
11. Develop client relations  

FDMA 1710. 2D Animation  
3 Credits (2+2P)  
Concepts and techniques in storyboarding and creating interactive 2D animations for web, multimedia and video.  
Prerequisite(s): FDMA 1535  
Learning Outcomes  
1. Be able to correctly storyboard an animation scene  
2. Define and demonstrate basic animation terminology and principles.  
3. Produce a complete hand drawn animation using industry standard software and processes.
FDMA 1715. 2-D COMPOSING & FX
3 Credits (3)
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 unrendered animation into a final piece with advanced 3D lighting, spacing, and digital effects so that it can achieve a dynamic, professionally rendered look. Restricted to Las Cruces campus only.

Learning Outcomes
1. The goal of this class is for students to learn how to use advanced compositing and effects tools in order to achieve a more dynamic and professional visual look for their animations or motion graphics.
2. By the end of the class, you should be proficient animation compositors that can assemble and synthesize a basic animation into a rendered, visually sophisticated piece.
3. Students who pass this class will have a basic to intermediate knowledge of Adobe After Effects.

FDMA 1720. 3-D Character Design
3 Credits (2+4P)
Focus on designing a character and then taking that design and building it in 3D using intermediate modeling techniques. May be repeated for a maximum of 6 credits.

Prerequisite(s): FDMA 1510 or FDMA 2530.

Learning Outcomes
1. Translate concept art into a low and high resolution 3D model using proper modeling techniques.
2. Use Polygon modeling techniques to create a 3D character.
3. Layout UVs and utilize Adobe Photoshop to texture a model.

FDMA 1996. Selected Topics
1-4 Credits (1-4)
Specific titles to be announced in the Schedule of Classes. May be repeated for a maximum of 18 credits. Restricted to Community Colleges campuses only.

Learning Outcomes
1. Varies

FDMA 2111. Environmental Scene Design
3 Credits (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(s): FDMA 1510 or FDMA 2530.

FDMA 2120. Film Crew I/ Introduction to Film and Media Workflow
9 Credits (9)
An introduction to the film industry. This class teaches film production processes, film crew hierarchy, film production set-safety and etiquette and provides hands-on training in industry standard film production equipment. Students complete the semester by participating as a below-the-line crew member on a short film. Restricted to: Community Colleges only.

Learning Outcomes
1. Explain film production processes; Interpret call sheets and deal memos, model basic on-set protocols and professional behavior.
2. Assist producers and directors in completing a professional film project.
3. Work effectively in production crew positions in a group environment.
4. Recognize and articulate specific film production structure, from original concept to final release.

FDMA 2125. Film Crew II
9 Credits (9)
The second course designed to train students to become working members of film crews. It will be taught by working film professionals. Content will be lecture and hands-on. Students complete the semester by working as part of an actual film crew as below-the-line and above-the-line crew members. Restricted to: Community Colleges only.

Prerequisite(s): FDMA 2120.

Learning Outcomes
1. Understand film production processes used to produce a film.
2. Manage craft area job functions.
3. Model on-set protocols and professional behaviors.
4. Assist producers and directors in completing a professional film project.
FDMA 2150. Desktop Publishing II
3 Credits (2+2P)
This class will enhance and build upon student layout/design skills developed in the Introduction to Desktop Publishing course, incorporating intermediate to advanced concepts in typography and layout design. Upon completion of this course, students will be able to use page layout software to prepare a variety of documents for presentation and critique, including newsletters, instructional flyers, and other complex design/typographic pieces. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): FDMA 1120.
Learning Outcomes
1. Build upon knowledge of design and design terminology.
2. Exhibit intermediate to advanced design principles using type, layout, and color.
3. Demonstrate skill in intermediate to advanced concepts and features of page layout software.
4. Exhibit knowledge of styles, tables, images and clipping paths and interactive documents as well as printing preparations and procedures.
5. Create layouts for print, web, and other media that demonstrate an intermediate to advanced knowledge in typography and layout design.
6. Format and produce newsletters and instructional flyers, as well as larger, complex projects such as packaging mechanicals, multiple master page documents, and books.
7. Assess works of graphic design for quality and effectiveness.
8. Utilize produced material to create or add to a design portfolio for future use.

FDMA 2210. Digital Video Production II
3 Credits (2+2P)
Advanced techniques of the tools and application of professional filmmaking. May be repeated for a maximum of 6 credits.
Prerequisite: FDMA 1210.
Learning Outcomes
1. Demonstrate the ability to produce and manage a video project: Produce a script, storyboard, and production schedule for a video project designed for a specific audience.
2. Demonstrate proficiency in producing quality digital video footage and audio tracks: Shoot to the script and storyboard using a variety of camera and lighting techniques; Produce a finished complex sound track including narration, music, and sound effect.
3. Demonstrate ability to produce and edit a professional quality video project: Integrate all production aspects of the project including video, audio, graphics, titles, transitions, and effects. Guide the project through the final production stages.
4. Develop competency in digital video distribution using various formats and techniques: Distribute project in various formats which could include DVD and web posting.

FDMA 2241. Advanced Camera Techniques
3 Credits (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(s): FDMA 1210.
Learning Outcomes
1. Students knowledge of high-end video camera operation and features.
2. Students must know all the working features of the video production equipment being used during the course in order to achieve the desired footage as required by the instructor.
3. Demonstrate proficiency in producing quality digital video footage.
4. Individuals must acquire the knowledge of different shooting styles in different productions situations and use those acquired skills to produce the appropriate video footage.
5. Using the proper lighting in different location shooting styles.
6. Skill of each individual utilizing the usage of high-end camera equipment such as dollies, cranes and Steadicam.
7. Each individual must work as a team player to create professional style video footage.

FDMA 2285. Digital Video Production and Editing II
3 Credits (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. Restricted to Community Colleges campuses only. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): FDMA 1220.
Learning Outcomes
1. Intermediate to advanced video editing create short films and training videos, create TV quality commercials, direct a news broadcast, and work as a mentor to students on digital media equipment

FDMA 2287. Digital Design Studio
1-3 Credits
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. May be repeated for a maximum of 6 credits.
Prerequisite(s): FDMA 1630 or ARTS 1712.
Learning Outcomes
1. Demonstrate competency in the use of InDesign software.
2. Create appropriate visual solutions based on target marketing information.
3. Demonstrate competency in the design and production of advertising and promotional materials.
4. Present ideas and concepts effectively and competently.
5. Visually demonstrate design solutions to be used in a portfolio.
FDMA 2310. History of Cinema I
3 Credits (3)
This course surveys the history of cinema - investigating the process by which the original "cinema of attractions" evolved into a globally dominant form of visual storytelling. We will explore the development of cinema both as an art form and as an industry, and consider the technological, economic, cultural factors, as well as many key international movements that helped shape it. Restricted to: G-CMI, DFM, ANVE majors.
Learning Outcomes
1. Gain a greater appreciation for the history of cinema
2. Develop knowledge of the key eras in the history of U.S. cinema
3. Learn the characteristics of major movements in international cinema
4. Understand the various elements that go into telling a story in cinema: screenplay, narrative devices, director, producer, talent, production design, cinematography, editing, sound design
5. Learn how major genres in U.S. cinema have evolved in the past 100+ years
6. Gain a basic understanding of the operations and organization of the Hollywood film industry, from the studio system until today
7. Gain an awareness of the shifts in the film industry that present new opportunities for independent filmmakers
8. Understand the importance of learning about the history of cinema to the process of becoming a filmmaker
9. Strengthen public speaking skills

FDMA 2311. History of Animation
3 Credits (3)
Explores the history of Animation as an art form and industry through readings, screenings, lecture and periodic guest speakers. Restricted to: G-CMI, ANVE, DFM majors. Restricted to Las Cruces campus only.
Learning Outcomes
1. To expand your knowledge of the history of animation and its evolution to the modern day.
2. To expand your ability to view animation critically and to understand its early connections to cartooning as well as its ongoing cultural presence and relevance.
3. To expand your comfort with accessing information and completing assignments both online and independently. Canvas will be utilized for many of our readings and for some response assignments.

FDMA 2312. History of Media Design
3 Credits (3)
An introduction to the principles of design history and theory within a chronological framework of historical and emerging media.
Learning Outcomes
1. Introduction to visual communication: Defines design media; Discuss universal design principles and strengthen student basic design skills.
2. Historical technological development and design: Prehistoric communication; Beginnings of alphabet and written language; Movable type and the printing press; Industrial revolution; Digital Age; Designers and Trends; Personalities and their influence and contributions
3. Identify design styles and discuss the relevance of how design influences: Idea generation; Trend sources; Influences or appropriation; Propaganda and advertising.

FDMA 2325. Advanced Photoshop
3 Credits (2+2P)
This course expands on the Photoshop skill set to develop proficiency with selections, masking, channels, filters, color correction, painting tools, vector integration, video, special effects, and compositing techniques. The focus is on the core image-editing tools of Photoshop that can be universally applied to photography, print, film or the web. The material is covered in production-oriented projects and students develop work suitable for portfolios. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): FDMA 1515.
Learning Outcomes
1. Create effects using advanced blending techniques
2. Effectively utilize advanced masking techniques
3. Refine Selections with advanced techniques
4. Assess Adjust color in an image
5. Utilize advanced photo enhancement techniques
6. Alter images using Photoshop painting techniques
7. Create brush presets
8. Create vector elements with paths
9. Add manipulate type on a path
10. Create advanced special effects
11. Apply vanishing point warping
12. Create a video clip
13. Add manipulate type on a path

FDMA 2326. Digital Photography and Imaging II
3 Credits (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. Restricted to: Alamogordo campus, Carlsbad campus, Dona Ana campus.
Prerequisite(s): FDMA 1545.
Learning Outcomes
1. Apply proper exposure techniques.
2. Practice effective composition techniques.
3. Demonstrate knowledge of working with Camera RAW files.
4. Demonstrate proper image adjustment and correction techniques.
5. Successfully apply the basics of HDR digital photography.
6. Apply techniques for modifying light.
FDMA 2360. Web Design II  
3 Credits (2+2P) 
In this course, students will refine their skills in coding and web graphic design as well as be introduced to methods in constructing sites that adhere to the standards of responsive web design. Students will expand their knowledge of HTML and CSS using a code editor, and they will both analyze existing websites and also construct an interactive website. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.  
Prerequisite(s): FDMA 1360.  
Learning Outcomes  
1. Plan and produce web design mockups.  
2. Demonstrate a proficiency in HTML/CSS coding.  
3. Utilize basic web scripts.  
4. Integrate animation into web design.  
5. Create fully functional websites using one or more web editors.  
6. Make a website "live."  
7. Evaluate web designs for aesthetics and functionality.  
8. Demonstrate the utilization of responsive design.  

FDMA 2365. Web Design for Small Business  
3 Credits (2+2P)  
Technology and techniques for designing and building a web presence for small business. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.  
Prerequisite(s): FDMA 1360.  
Learning Outcomes  
1. Learning advanced tools and techniques for creating and maintaining complex Business web sites. We will be using CSS, PHP, HTML, Photoshop, and Wordpress.  
2. design a complete and fully functional online web business.  
3. understand and develop a plan to better manage a web store/business.  
4. review basic design guidelines in preparing a variety of web applications for business.  
5. develop technical skills in using various web based solutions.  
6. reinforce your knowledge of web design software.  
7. introduce alternate sources of data, communication and financial solutions.  

FDMA 2370. Advanced Web Techniques  
3 Credits (2+2P)  
Creating and managing complex web sites using advanced techniques and tools. May be repeated for a maximum of 6 credits. Restricted to: Community Colleges only.  
Prerequisite(s): FDMA 1515 and FDMA 2360.  
Learning Outcomes  
1. Create webpages using Hypertext Markup Language (HTML) elements and tags  
2. Format webpages using Cascading Style Sheets (CSS)  
3. Validate webpage code  
4. Apply industry-standard webpage design and organization principles  
5. Publish a website  

FDMA 2381. Storyboarding  
3 Credits (3)  
Examines effective writing principles to create storyboards that communicate the overall picture of a project, timing, scene complexity, emotion and resource requirements. Further, the purpose of this course is to introduce students to the principles of visual storytelling—in film—through the use of the storyboard. In other words, to show how storyboards are critical "architectural component“ of the filmmaking process, used as a blueprint (or guide) to communicate the complex elements of a film story. Crosslisted with: ENGL 2381. Restricted to: DFM, ANVE, G-CMI majors. Restricted to Las Cruces campus only.  
Learning Outcomes  
1. Learn to conceive and draw original images.  
2. Learn to use images to tell a story.  
3. Design, develop, and order images (shots) into storyboarded scenes.  
4. Understand how storyboarded sequences are a tool in the process of filmmaking.  
5. Understand how the storyboard image is translated from the written page.  
6. Build scenes from the scripted sequences into a storyboard.  

FDMA 2382. Principles of Story Across the Media  
3 Credits (3)  
The purpose of this course is to help students understand the basic elements of narrative structure (e.g. character, dramatic conflict, theme, etc.) and how these elements may be used effectively in media expression. Crosslisted with: ENGL 2382. Restricted to: G-CMI, DFM, ANVE majors. Restricted to Las Cruces campus only.  
Learning Outcomes  
1. Identify the elements of storytelling in scripted text or improvised performance  
2. Understand how these elements work together across different media  
3. Apply these elements of storytelling in original work  
4. Appreciate and master these elements for independent or collaborative work  

FDMA 2410. Audio Production II  
3 Credits (2+2P)  
Students will use skills developed in the Audio Production I course to produce audio projects utilizing a variety of analog and digital audio hardware and software, including continued use of multi-track, computer-based recording and editing systems, as well as exploring more advanced audio techniques and concepts. Restricted to: Community Colleges only.  
Learning Outcomes  
1. Apply analog and digital audio hardware and software in audio recording.  
2. Apply common professional set-up practices of audio production facilities.  
3. Produce audio projects, sync sound recordings, and audio dialogue replacement (ADR) demonstrating technical expertise.  
4. Perform an audio mix and master for a final professional product.  
5. Analyze and compare existing audio productions for quality.
FDMA 2510. Introduction to Sound Design for Film
3 Credits (3)
This course is an introduction to the principles, techniques and applications of sound design and film scoring. Students learn how sound affects storytelling in a film, examine the role of sound from the script to screen, and the professional process of creating a soundtrack. Students learn how to use sound equipment in a production environment and execute basic techniques used to develop a soundtrack. Crosslisted with: FDMA 1415.
Prerequisite(s)/Corequisite(s): FDMA 2382. Restricted to: DFM,ANVE majors. Restricted to Las Cruces campus only.
Learning Outcomes
1. Compare the properties and propagation of sound and importance of sound to the storytelling aspect of filmmaking.
2. Learn the process of designing a soundtrack for film and recording live audio dialogue for use in post-production editing.
3. Learn captures and dialogue recording, foley, orchestration and audio dialogue replacement.
4. Design a soundtrack for motion media project.

FDMA 2520. Introduction to Cinematography
3 Credits (3)
The Director of Photography (or Cinematographer), in close collaboration with the Director and Production Designer, helps determine the look of a film. This course is designed to introduce students to the technical and aesthetic fundamentals of creating, developing, and collaborating on the visual elements of storytelling, using camera framing, lensing, and lighting fundamentals such as shadows, light and color. May be repeated up to 6 credits. only. Prerequisite(s)/Corequisite(s): FDMA 2382 (Las Cruces Campus) or FDMA 1210 (Community College Campus(es)).
Learning Outcomes
1. Define and explain the fundamental concepts of cinematography, such as exposure, lighting solutions, and color temperature.
2. Understand how cinematography brings the Director’s vision to reality.
3. Demonstrate proficiency in plotting and executing interior and exterior lighting solutions.

FDMA 2530. Introduction to 3D Modeling
3 Credits (3)
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. May be repeated for a maximum of 6 credits.
Learning Outcomes
1. Identify the role of a 3D modeler in a production pipeline within various fields of digital animation.
2. Apply techniques in modeling mechanical and organic objects.
3. Utilize tools available in professional 3D modeling software.
4. Create simple animations and renders.
5. Present original animations to instructor and classmates for critique.
6. Create a demo reel of work completed during the course.

FDMA 2535. Digital Illustration
3 Credits (3)
Introductory course examining traditional artistic expressions and translating visual art experiences into a digital art medium to enhance visual storytelling. Students acquire basic principles of drawing and painting through hands-on experience manipulating tonal value, composition, form development, light and shadow, color theory, rendering realism, and graphic design. Restricted to: DFM,ANVE majors. Restricted to Las Cruces campus only.
Learning Outcomes
1. Be familiar with the CMI computer system, facilities, equipment and policies.
2. Appropriately utilize the various media technologies available at CMI for digital illustration.
3. Understand the different roles and areas of digital illustration.
4. Understand and apply some basic techniques of digital illustration.
5. Understand and apply basic processes of creating pleasing images based on knowledge of traditional art principles.
6. Begin to apply some basic strategies for developing and creating aesthetically pleasing images.

FDMA 2570. Creative Media Studio
3 Credits (2+2P)
A studio environment where students specialize in creating film-festival quality and portfolio-ready projects under the supervision of faculty. May be repeated for a maximum of 6 credits.
Prerequisite(s): FDMA 1210 and FDMA 1220 or FDMA 2530.
Learning Outcomes
1. Students will work together to create portfolio-quality work in a studio environment.
2. Through classroom discussion and reporting the students will collaborate to produce a professional quality “vertical slice” game concept within a defined timeline and financial budget.

FDMA 2575. Special Effects
3 Credits (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(s): FDMA 2530 or FDMA 2765.
FDMA 2720. 3-D Animation
3 Credits (3)
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): FDMA 1510, FDMA 2710 or consent of instructor.
Learning Outcomes
1. Clearly describe the role of an animator in cinema, gaming and related fields.
2. Recognize leading animators and their methods.
3. Demonstrate knowledge of advances in contemporary animation.
4. Utilize current industry standard animation tools.
5. Apply fundamental animation processes and techniques

FDMA 2725. Rigging for 3D Animation
3 Credits (3)
This course will introduce principles and practices of current 3D animation rigging. 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, body and facial rigging. Restricted to: DFM, ANVE majors.
Prerequisite(s): FDMA 1510.
Learning Outcomes
1. Understand what Rigging is and the role it plays in the world of cinema and video games.
2. Be familiar with industry professionals and their techniques and approaches to rigging.
3. Understand and be able to apply the fundamentals of rigging to industry standard applications.
4. Demonstrate ability to rig basic to intermediate machines, bipeds and quadrupeds

FDMA 2730. Advanced Character Animation
3 Credits (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. Restricted to: Community Colleges only.
Prerequisite(s): FDMA 2530.
Learning Outcomes
1. Create skeletal riggings for use with a 3D model
2. Attach riggings to a 3D model using Smooth and rigid binding and refine the bindings so that they are properly weighted
3. Animate a 3D model using skeletal and vertex animation techniques

FDMA 2735. Advanced 3D Animation Workshop A
3 Credits (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. May be repeated for a maximum of 9 credits. Consent of instructor required.
Corequisite(s): FDMA 2740.
Learning Outcomes
1. Define the duties and skills sets required for a career in 3D Modeling.
2. Understand the Maya interface, the uses for all of the major modes and menus of the interface and be able to describe how to access the tools, actions and the options of those tools and actions.
3. Complete and compile a multi shot animated short.

FDMA 2740. Advanced 3D Animation Workshop B
3 Credits (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. May be repeated for a maximum of 9 credits. Consent of instructor is required.
Corequisite(s): FDMA 2735.
Learning Outcomes
1. Define the duties and skills sets required for a career in 3D Modeling.
2. Understand the Maya interface, the uses for all of the major modes and menus of the interface and be able to describe how to access the tools, actions and the options of those tools and actions.
3. Complete and compile a multi shot animated short.

FDMA 2745. Light, Shade, Render
3 Credits (3)
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. Restricted to: DFM,ANVE majors. Restricted to Las Cruces campus only.
Prerequisite(s): FDMA 1510, FDMA 2530, or Consent of Instructor.
Learning Outcomes
1. Understand the role of lighting and surfacing to tell a story.
2. Be familiar with leading lighting artist and their approaches.
3. Utilize the software implemented in the entertainment industry.
4. Understand and apply fundamental lighting and rendering techniques.
5. Demonstrate ability to create successfully rendered scenes from concept through production.
FDMA 2750. Digital Sculpting
3 Credits (3)
Introduce students to the 3D Sculpting programs which are the industry standard sculpting programs. Students will learn how to create complex high polygon sculpts and normal maps and transfer the models into 3D studio Max and Autodesk Maya. May be repeated up to 6 credits. Restricted to: Community Colleges only.
Prerequisite(s): FDMA 2530.
Learning Outcomes
1. Demonstrate communication skills through written critiques and explanations
2. Students will demonstrate visual communication skills through critiques, written explanations, and storyboarding
3. Demonstrate a working knowledge of Zbrush’s interface
4. Demonstrate a working knowledge of Zpheres and how they are best used to create sculpts
5. Demonstrate a working knowledge of painting a mesh using Spotlight
6. Demonstrate a working knowledge of retopologizing and exporting the mesh
7. Demonstrate a working knowledge of integrating the full Zbrush pipeline into Unity and Unreal

FDMA 2755. Drawing for Animation
3 Credits (3)
Introductory study of the human and animal form in relation to animation. Students learn fundamentals and exaggeration of the figure, as related to proportion, rhythm, mechanics, and motion. Areas of focus are: basic form, proportion, shape, contour, gesture, anatomy, portraiture, perspective, clothing effects and drawing from observation. Restricted to: CMT,DFM,ANVE majors.
Learning Outcomes
1. Students will have an opportunity to gain hands on experience using industry standard state of the art animation software.
2. Understand what the basics of drawing the human form.
3. Have a general understanding of human anatomy as needed for the artist.
4. Be able to design the human form from imagination.

FDMA 2770. Critical Game Studies
3 Credits (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. Restricted to: Community Colleges only.

FDMA 2775. Game Tools and Techniques
3 Credits (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(s): FDMA 2770.
Learning Outcomes
1. Students will develop rapid prototyping techniques.
2. Through classroom exercises the students will gain competency in industry-standard game creation engines and tools, and learn to work together in groups to create rapid prototypes.
3. This includes creating art, sound and music, and creating basic scripts within an engine.

FDMA 2778. Level Design Concepts
3 Credits (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(s): FDMA 2770
Learning Outcomes
1. Students will develop level design skills.
2. Through classroom exercises the students will gain a comfortable competency with designing levels both on paper and digitally.
3. This includes creating first person shooter levels, third person levels, multiplayer level design, and more.

FDMA 2993. Workshops (Advanced Photography)
1 Credit (1)
This is a series of 1-credit workshops offering specialized and intense advanced skill training and upgrading applications of photography for commercial purposes and training in photographic skills and styles presented by a variety of professional lecturers. May be repeated up to 7 credits. Restricted to Community Colleges only.
Prerequisite(s): FDMA 1545.
Learning Outcomes
1. Varies

FDMA 2994. Portfolio Design & Development
1-3 Credits
Personalized design and creation of the student’s professional portfolio including hard-copy, demo reel, and online. May be repeated up to 6 credits. Consent of Instructor required. Restricted to Community Colleges campuses only.
Learning Outcomes
1. Varies

FDMA 2995. Film Crew Cooperative Experience
3-6 Credits (3-6)
Industry production experience in specific craft areas for film crew technicians who have successfully completed two semesters of FTTP. Restricted to: Dona Ana campus, Carlsbad campus.
Prerequisite(s): FDMA 2125.
Learning Outcomes
1. Varies

FDMA 2996. Special Topics
1-4 Credits
Specific topics to be announced in the Schedule of Classes. May be repeated for a maximum of 18 credits.
Learning Outcomes
1. Varies

FDMA 2997. Independent Study
1-3 Credits
Individual studies directed by consenting faculty with prior approval of department head. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): Minimum GPA of 3.0 and sophomore standing.
Learning Outcomes
1. Varies
FDMA 2998. Internship
1-3 Credits
Work experience that directly relates to a student’s major field of study that provides the student an opportunity to explore career paths and apply knowledge and theory learned in the classroom. Internships may be paid or unpaid. Students are supervised/evaluated by both the employer and the instructor. May be repeated up to 9 credits. Consent of Instructor required. Graded: S/U Grading (S/U, Audit). Restricted to Community Colleges campuses only. Consent of instructor required.

Learning Outcomes
1. Varies

Program Manager: Sarah Johnson
Phone: (505) 287-6656
Email: sjohns10@nmsu.edu
Office: McClure Hall, Room 301

Web Fundamentals - Certificate
This Certificate is 100% embedded and leads to the Associate of Applied Science in Creative Media Design at NMSU Grants.

30 credits

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCIS 1110 or OEC 105</td>
<td>Introduction to Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>or BCIS 1110</td>
<td>Introduction to Information Technology</td>
<td>3</td>
</tr>
<tr>
<td>FDMA 1360</td>
<td>Web Design I</td>
<td>3</td>
</tr>
<tr>
<td>FDMA 1515</td>
<td>Introduction to Digital Image Editing - Photoshop</td>
<td>3</td>
</tr>
<tr>
<td>FDMA 1535</td>
<td>Introduction to Illustrator</td>
<td>3</td>
</tr>
<tr>
<td>FDMA 1630</td>
<td>Principles of Design</td>
<td>3</td>
</tr>
<tr>
<td>FDMA 2287</td>
<td>Digital Design Studio</td>
<td>3</td>
</tr>
<tr>
<td>FDMA 2360</td>
<td>Web Design II</td>
<td>3</td>
</tr>
<tr>
<td>FDMA 2994</td>
<td>Portfolio Design &amp; Development</td>
<td>3</td>
</tr>
<tr>
<td>FDMA Electives</td>
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<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>30</strong></td>
</tr>
</tbody>
</table>

A Suggested Plan of Study
This roadmap is only a suggested plan of study in order to complete a Certificate in two semesters. It is not intended as a contract. Course availability may vary from fall to spring semester and may be subject to modification or change. Students are advised to earn a C or better in courses to avoid repeating courses.

First Year

**Fall**

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>OEC 105 or BCIS 1110</td>
<td>Introduction to Information Technology</td>
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</tr>
<tr>
<td>or BCIS 1110</td>
<td>or Introduction to Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>FDMA 1360</td>
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<tr>
<td>FDMA 1630</td>
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<td>3</td>
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<tr>
<td>FDMA 2287</td>
<td>Digital Design Studio</td>
<td>3</td>
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<tr>
<td><strong>Credits</strong></td>
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<td><strong>15</strong></td>
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**Spring**

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<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>FDMA 1515</td>
<td>Introduction to Digital Image Editing - Photoshop</td>
<td>3</td>
</tr>
<tr>
<td>FDMA 2360</td>
<td>Web Design II</td>
<td>3</td>
</tr>
<tr>
<td>FDMA 2994</td>
<td>Portfolio Design &amp; Development</td>
<td>3</td>
</tr>
</tbody>
</table>

FDMA Electives

<table>
<thead>
<tr>
<th>Credits</th>
<th>6</th>
</tr>
</thead>
</table>

Program Manager: Sarah Johnson
Phone: (505) 287-6656
Email: sjohns10@nmsu.edu
Office: McClure Hall, Room 301

Welding Technology
Welding Technology - Associate of Applied Science (p. 170)
Welding Technology - Certificate (p. 171)

WELD 100. Structural Welding I
6 Credits (3+6P)
Development of basic skills in SMAW, OFC, and OFW in accordance with the AWS entry-level welder program.

WELD 102. Welding Fundamentals
3 Credits (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 Credits (3)
Welding practices, procedures, and terminology. Welding safety, equipment types, electrode types in usage, joint design and testing procedures.

WELD 110. Blueprint Reading (Welding)
3 Credits (3)
Interpretation of prints related to welding. Emphasis on AWS standard symbols for welding, brazing, and nondestructive examination.

WELD 115. Structural Welding II
6 Credits (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 120. Basic Metallurgy
3 Credits (3)
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 Credits (2+2P)
Pipe fit-up and welding techniques for pipe fitting and pipe weld joint using SMAW, GMAW, GTAW, and FCAW, 2G welding of pipe. Restricted to: Community Colleges only.

Prerequisite(s): WELD 100, WELD 130, and WELD 140, or consent of instructor.

WELD 126. Industrial Pipe Welding
3 Credits (3)
Enhancement of WELD 125. Development of more advanced pipe welding skills.

Prerequisite(s): WELD 110, WELD 130 and WELD 140.
Corequisite(s): WELD 125.
WELD 130. Introduction to GMAW MIG
3 Credits (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 Credits (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 Credits (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 160. Introduction to SAW and FCAW
3 Credits (2+2P)
Submerged arc and flux-cored arc welding. Demonstrations and practice with machine travel submerged arc welding (SAW), flux-cored arc welding (FCAW-G, FCAW-S) on mild steel plate and pipe. Restricted to: Community Colleges only.

WELD 170. Welded Fabrication
3 Credits (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 Credits (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 Credits (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. May be repeated up to 12 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): WELD 102.

WELD 211. Welder Qualification
6 Credits (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. Restricted to majors.
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.

WELD 221. Cooperative Experience I
1-6 Credits
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. Restricted to majors.
Prerequisites: WELD 100 or WELD 101 and consent of instructor.

WELD 255. Special Problems in Welding Technology
1-6 Credits
Individual studies in areas of welding technology. May be repeated for a maximum of 12 credits.
Prerequisite: consent of instructor.

WELD 295. Special Topics
1-4 Credits
Topics to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits.

Program Manager: Richard Gutierrez
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Office: Room 121A, Martinez Hall, 2nd Floor

Welding Technology - Associate of Applied Science

61 credits

The Associate of Applied Science in Welding Technology teaches students how to set up and use various types of welding equipment. Students also will learn how to weld pipe and plate in various positions: flat, horizontal, vertical, and overhead.

Students must complete all University degree requirements, which include: General Education requirements and elective credits to total at least 61 credits. Developmental coursework will not count towards the degree requirements and/or elective credits, but may be needed in order to take the necessary English and Mathematics coursework.

(See also Welding Technology Certificate (p. 171))

Prefix Title Credits
---
General Education
Select one course from four of the following six content areas for a total of 12-14 credits. 1, 2

12-14

This degree requires courses from Areas I, IV, V and VI; students do not need to take additional courses to complete the General Education requirements.

Area I: Communications
ENGL 1110G Composition I

Area IV: Social/Behavioral Sciences
PSYC 1110G Introduction to Psychology or SOCI 1110G Introduction to Sociology

Area V: Humanities
Select one from the following:
HIST 1110G United States History I or HIST 1120G United States History II
PHIL 1115G Introduction to Philosophy
PHIL 2110G Introduction to Ethics
PHIL 2230G Philosophical Thought

Area VI: Creative and Fine Arts

---
1
2

Room 121A, Martinez Hall, 2nd Floor
Select one from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH 1115G</td>
<td>Orientation in Art</td>
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<tr>
<td>or ARTS 1145G</td>
<td>Visual Concepts</td>
<td></td>
</tr>
<tr>
<td>THEA 1110G</td>
<td>Introduction to Theatre</td>
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**General Education Elective**

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<tr>
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<tbody>
<tr>
<td>ENGL 2210G</td>
<td>Professional &amp; Technical Communication</td>
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**Welding Core Requirements**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>WELD 100</td>
<td>Structural Welding I</td>
<td>6</td>
</tr>
<tr>
<td>WELD 110</td>
<td>Blueprint Reading (Welding)</td>
<td>3</td>
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<tr>
<td>WELD 120</td>
<td>Basic Metallurgy</td>
<td>3</td>
</tr>
<tr>
<td>WELD 125</td>
<td>Introduction to Pipe Welding</td>
<td>3</td>
</tr>
<tr>
<td>WELD 130</td>
<td>Introduction to GMAW MIG</td>
<td>3</td>
</tr>
<tr>
<td>WELD 140</td>
<td>Introduction to GTAW TIG</td>
<td>3</td>
</tr>
<tr>
<td>WELD 150</td>
<td>Pipe Welding II</td>
<td>3</td>
</tr>
<tr>
<td>WELD 170</td>
<td>Welded Fabrication</td>
<td>3</td>
</tr>
<tr>
<td>WELD 180</td>
<td>GTAW II</td>
<td>3</td>
</tr>
<tr>
<td>WELD 190</td>
<td>Welded Art</td>
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</tr>
<tr>
<td>WELD 211</td>
<td>Welder Qualification</td>
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**Other Course Requirements**

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<tr>
<th>Course Code</th>
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<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>DRFT 114</td>
<td>Introduction to Solid Modeling</td>
<td>3</td>
</tr>
<tr>
<td>or DRFT 109</td>
<td>Computer Drafting Fundamentals</td>
<td></td>
</tr>
<tr>
<td>MATH 1215</td>
<td>Intermediate Algebra</td>
<td>3</td>
</tr>
<tr>
<td>or OETS 118</td>
<td>Mathematics for Technicians</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits** 61

---

**A Suggested Plan of Study**

This roadmap assumes student placement in ENGL 1110G Composition I and demonstrates how to complete an Associate degree in two years. The contents and order of this roadmap may vary depending on initial student placement in mathematics and English. It is only a suggested plan of study for students and is not intended as a contract. Course availability may vary from fall to spring semester and may be subject to modification or change. Students are advised to earn a C or better in courses to avoid repeating courses and may consider completing General Education courses in the summer.

**First Year**

**Fall**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>WELD 100</td>
<td>Structural Welding I</td>
<td>6</td>
</tr>
<tr>
<td>WELD 130</td>
<td>Introduction to GMAW MIG</td>
<td>3</td>
</tr>
<tr>
<td>WELD 140</td>
<td>Introduction to GTAW TIG</td>
<td>3</td>
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<tr>
<td>OETS 118</td>
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</table>

**Credits** 15

**Spring**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>WELD 125</td>
<td>Introduction to Pipe Welding</td>
<td>3</td>
</tr>
<tr>
<td>WELD 130</td>
<td>Introduction to GMAW MIG</td>
<td>3</td>
</tr>
<tr>
<td>WELD 140</td>
<td>Introduction to GTAW TIG</td>
<td>3</td>
</tr>
<tr>
<td>WELD 150</td>
<td>Pipe Welding II</td>
<td>3</td>
</tr>
<tr>
<td>WELD 180</td>
<td>GTAW II</td>
<td>3</td>
</tr>
<tr>
<td>WELD 211</td>
<td>Welder Qualification</td>
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**Total Credits** 30

**Second Year**

**Fall**

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</thead>
<tbody>
<tr>
<td>WELD 120</td>
<td>Basic Metallurgy</td>
<td>3</td>
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</tbody>
</table>

**Credits** 3

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This Certificate is 100% embedded in, and leads to the Associate of Applied Science in Welding Technology.

**30 credits**

**Prefix** | **Title** | **Credits**
---|---|---
WELD | Introduction to Pipe Welding | 3
WELD 150 | Pipe Welding II | 3
ENGL 2210G | Professional & Technical Communication | 3
WELD 170 | Welded Fabrication | 3

**Credits** 15

---

This Certificate is 100% embedded in, and leads to the Associate of Applied Science in Welding Technology.

**A Suggested Plan of Study**

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**First Year**

**Fall**

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>WELD 100</td>
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<tr>
<td>WELD 130</td>
<td>Introduction to GMAW MIG</td>
<td>3</td>
</tr>
<tr>
<td>WELD 140</td>
<td>Introduction to GTAW TIG</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 1110G</td>
<td>Composition I</td>
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<tr>
<td>PSYC 1110G</td>
<td>Introduction to Psychology</td>
<td>3</td>
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<tr>
<td>or SOCI 1110G</td>
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**Credits** 13

**Summer**

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<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>DRFT 109</td>
<td>Computer Drafting Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>or DRFT 114</td>
<td>Introduction to Solid Modeling</td>
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</table>

**Credits** 3

---

This Certificate is 100% embedded in, and leads to the Associate of Applied Science in Welding Technology.

**30 credits**

**Prefix** | **Title** | **Credits**
---|---|---
WELD | Structural Welding I | 3
WELD 125 | Introduction to Pipe Welding | 3
WELD 130 | Introduction to GMAW MIG | 3
WELD 140 | Introduction to GTAW TIG | 3
WELD 110 | Blueprint Reading (Welding) | 3

**Credits** 15

---

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Office: Room 121A, Martinez Hall, 2nd Floor

---

New Mexico State University - Grants 171
Courses Descriptions

Note: Not all courses listed below are taught at the NMSU Grants Campus.

A

- ARTS-ART SCIENCES (p. 174)
- ACCT-ACCOUNTING (p. 174)
- AGRIC-AGRICULTURAL ECON/ECON (p. 176)
- AERO-AEROSPACE STUDIES (p. 177)
- AERA-AEROSPACE TECHNOLOGY (p. 177)
- AFST-AFRICA STUDIES (p. 178)
- AGRO-AGRONOMY (p. 178)
- ALLIED ALLIED HEALTH SCIENCE (p. 178)
- ANS-ANIMAL SCIENCE (p. 179)
- ANTH-ANTHROPOLOGY (p. 182)
- ARCH-ARCHITECTURE (p. 184)
- ARTH-ART HISTORY (p. 189)
- ARTS-ART STUDIO (p. 190)
- ASTR-ASTRONOMY (p. 196)
- AUTO-AUTOMOTIVE TECHNOLOGY (p. 196)
- AVIM-AVIMAN MAINTENANCE (p. 199)
- AXED-AGRICULTURAL EXTN EDUC (p. 200)

B

- B A BUSINESS ADMINISTRATION (p. 201)
- BCHE-BIOCHEMISTRY (p. 202)
- BCIS-BUSINESS COMPUTER SYSTEMS (p. 202)
- BCT-BUILDING CONSTRUCTION TECH (p. 202)
- BFIN-BUSINESS FINANCE (p. 204)
- BIOL-BIOLOGY (p. 204)
- BLAW-BUSINESS LAW (p. 210)
- BLMT-BILINGUAL EDUCATION (p. 210)
- BMGT-BUSINESS MANAGEMENT (p. 210)
- BOT-BUSINESS OFFICE TECHNOLOGY (p. 212)
- BUSA-BUSINESS ADMINISTRATION (p. 213)

C

- C E-CIVIL ENGINEERING (p. 213)
- C S-COMPUTER SCIENCE (p. 213)
- CDE-DEVELOPMENTAL ENGLISH (p. 215)
- CCDM-DEVELOPMENTAL MATHEMATICS (p. 215)
- CCDR-DEVELOPMENTAL READING (p. 216)
- CDDS-DEVELOPMENTAL SKILLS (p. 216)
- CEPR-COUNSELING & EDUCATIONAL PSYCHOLOGY (p. 216)

- CHEF-CULINARY ARTS (p. 218)
- CHEM-CHEMISTRY (p. 220)
- CHN-CHINESE (p. 224)
- CHME-CHEMICAL & MATERIALS ENGR (p. 226)
- CHSS-COMM HEALTH/SOC SRVCS (p. 226)
- CJUS-CRIMINAL JUSTICE (p. 227)
- COMM-COMMUNICATION (p. 229)
- CSE-CYBERSECURITY (p. 229)
- CTEC-CYBER TECHNOLOGY (p. 230)
- CTSEM-CYBER TECHNOLOGY (p. 231)

D

- DAN-DANCE (p. 233)
- DAS-DENTAL ASSISTING (p. 238)
- DYN-DENTAL HYGIENE/HYGIENIST (p. 239)
- DMS-DIAGNOSTIC MED SONOGRAPHY (p. 241)
- DRFT-DRAFTING (p. 243)

E

- E E-ELECTRICAL ENGINEERING (p. 246)
- ET-ENGINEERING TECHNOLOGY (p. 247)
- ECED-EARLY CHILDHOOD EDUCATION (p. 250)
- ECON-ECONOMICS (p. 257)
- EDL-EDUCATIONAL TECHNOLOGY (p. 258)
- EDU-EDUCATION (p. 259)
- ELAD-EDUCATIONAL LEADERSHIP ADMINISTRATION (p. 261)
- ELT-ELT ELECTRONICS TECHNOLOGY (p. 261)
- ELW-ELW ELECTRICAL LINEMAN (p. 263)
- ENGL-ENGLISH (p. 263)
- ENGR-ENGINEERING (p. 268)
- ENTRE-ENTREPRENEURSHIP (p. 270)
- ENV-ENVIRONMENTAL SCIENCE (p. 270)
- EWS-ETMLGY/PLNT PTHLGY/WD SCI (p. 271)

F

- FCS-FAMILY AND CONSUMER SCIENCES (p. 271)
- FCST-FAMILY AND CHILD STUDIES (p. 272)
- FDAMA-FILM & DIGITAL MEDIA ARTS (p. 273)
- FIRE-FIRE INVESTIGATION (p. 283)
- FREN-FRENCH (p. 285)
- FSTE-FOOD SCIENCE & TECHNOLOGY (p. 286)
- FWCE-FISH & WILDLIFE CONSERV (p. 287)

G

- GEN-GENETICS (p. 291)
- GEOL-GEOLLOGY (p. 293)
- GNDR-WOMEN'S STUDIES (p. 294)
- GRMN-GERMAN (p. 295)

Program Manager: Richard Gutierrez
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Email: richardg@nmsu.edu
Office: Room 121A, Martinez Hall, 2nd Floor
### Course Numbering:

**Four-digit Course**

**ASTR 1120G The Planets (4 credits (3+3P))**

- **Course Prefix** - the four letter code that represents the subject of the course and where the course can be located in the Courses A-Z list below.
- **Course number** - (1120) indicates the course is a freshman course.
- **Course Title** - will appear after the prefix and number
- **Suffix** - will appear at the end of the number

<table>
<thead>
<tr>
<th>Course Prefix</th>
<th>Course Title</th>
<th>Course Number</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ASTR</td>
<td>The Planets</td>
<td>1120G</td>
<td>4</td>
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</table>

New Mexico State University is currently undergoing a renumbering initiative to align with a State regulatory change. While this process is occurring courses will appear in two ways, a four-digit number or a three-digit number.
### Course Descriptions:

The course description will follow the prefix, number and credit hours. The description will explain what the course entails and will display any restrictions that the course may have that will be enforced during the registration process.
ACCT 2110. Principles of Accounting I
3 Credits (3)
An introduction to financial accounting concepts emphasizing the analysis of business transactions in accordance with generally accepted accounting principles (GAAP), the effect of these transactions on the financial statements, financial analysis, and the interrelationships of the financial statements.

Learning Outcomes
1. Analyze business transactions, their effects on the financial statements and the interrelationships of the financial statements involving the following: Cash transactions; Receivables and Net Realizable Value; Operational Assets and Depreciation; Inventory; Current Liabilities; Long-term Liabilities
2. Define, identify and demonstrate the impact of adjusting entries on financial statements.
3. Explain and demonstrate the differences between cash and accrual basis accounting.
4. Define and identify generally accepted accounting principles.

ACCT 2120. Principles of Accounting II
3 Credits (3)
An introduction to the use of accounting information in the management decision making processes of planning, implementing, and controlling business activities. In addition, the course will discuss the accumulation and classification of costs as well as demonstrate the difference between costing systems.

Prerequisite(s): ACCT 2110.

Learning Outcomes
1. Identify the differences between financial and managerial accounting.
2. Illustrate the accumulation of costs in cost accounting systems.
3. Describe the basic elements of the budgeting process, its objectives and budget preparation.
4. Define and classify cost behavior.
5. Perform cost-volume-profit analysis for decision-making.
6. Perform differential (incremental) analysis for business decision making.
7. Explain the cause of the variance and its effect on the income statement.
8. Explain and demonstrate the difference between traditional costing and activity-based costing.

ACES-AGRI, CONSUMER & ENV SCIE (ACES)

ACES 1120. Freshman Orientation
1 Credit (1)
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.

Learning Outcomes
1. Orient students to NMSU and to the College of Agricultural, Consumer and Environmental Sciences.
2. Develop an understanding of the personal skill set needed for academic success.
3. Develop awareness of the academic and personal resources available to NMSU students.
4. Help students create a peer network that will support their academic and personal success.
5. Strengthen skills in oral and written communications

ACES 1210. Financial Fitness for College Students
1 Credit (1)
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.

Learning Outcomes
1. Discuss the importance of personal financial management during college years.
2. Discuss the essentials of following:
   a. paying yourself first and budgeting,
   b. differentiating between needs and wants,
   c. the significance of building and having good credit,
   d. managing debt,
   e. understanding and minimizing student loan debt,
   f. investing.
3. g. life success principles, e.g., goal setting, time management, stress management.
4. Choose online financial tools to help them succeed financially.
ACES 1220. Academic Excellence  
1-3 Credits (1-3)  
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. Restricted to: Open to all ACES majors. Restricted to Las Cruces campus only.

Learning Outcomes  
1. Demonstrate an understanding of the relationship between time management and academic success.  
2. Express a familiarity with college culture.  
3. Communicate a comprehension of study skills and test taking strategies.  
4. Apply material learned to other aspects to enhance academic excellence.  
5. Develop an academic and career life plan that will highlight goals, taking into account life circumstance  
6. Become competent in appropriate professional/academic communication

AEEC-AGRICULTURAL ECON/ECON

AEEC 1110. Introduction to Agricultural Economics and Business  
3 Credits (3)  
This course is an orientation to agricultural economics and business through the discovery process for the consumer in the food, fiber, and natural resource sectors of the global economy. The course discusses the application of micro- and macro-economic principles as they relate to agricultural economics and business. May be repeated up to 3 credits.

Learning Outcomes  
1. Gain a broad understanding of the role of the consumer in the marketplace for agricultural commodities, producers, agencies and the global market structure.  
2. Apply introductory economic concepts to applied global situations.  
3. Employ economic concepts in the application of production level decision making.  
4. Employ economic principles to the basic and global agricultural community.  
5. Understand relationships that exist between producers and consumers.

AEEC 1120. Careers in Food and Agribusiness  
1 Credit (1)  
This course is an orientation to agribusiness management including careers available in the food and fiber supply chain. Students will learn about agricultural production and marketing in New Mexico, the United States, and the world. Students will be introduced to faculty and staff within the department, learn about career opportunities available to AEAB graduates, and develop a greater appreciation of agricultural management issues. Students must be in Freshman status only or obtain consent of instructor to enroll.

Learning Outcomes  
1. Become familiar with career opportunities in agricultural economics and agricultural business Understand knowledge and skills desired by employers Become acquainted with faculty and staff in the Department of Agricultural Economics and Agricultural Economics and resources available to students within the Department Refine written and verbal communication skills

AEEC 2110. Principles of Food and Agribusiness Management  
3 Credits (3)  
This course introduces the business management theory and application of theory related to businesses within the food and fiber supply chain. Topics include management and financial principles, market planning, and organization theory in small business situations.

Learning Outcomes  
1. Demonstrate, refine and expand written and oral communication skills  
2. Develop an understanding of basic financial statements, their use and analysis  
3. Understand the roles management and management styles play in modern agribusiness  
4. Learn about the history of agribusiness domestically and internationally  
5. Integrate the role of technology into modern agribusiness management

AEEC 2120. Introduction to Food and Agribusiness Accounting  
3 Credits (3)  
This course outlines the purpose and methods of keeping and analyzing farm and ranch records. Course topics include financial statements, efficiency measures, analysis of the business, and tax computations.

Learning Outcomes  
1. Understand the terminology and principles used in modern farm and ranch financial management statements. Evaluate capital investments, analyze farm business performance, and develop tools for financial planning and analysis Evaluate farm and ranch cash flows

AEEC 2130G. Survey of Food and Agricultural Issues  
3 Credits (3)  
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. Crosslisted with: FSTE 2130G.

Learning Outcomes  
1. Understand of global agriculture including production techniques used in various geographical regions, consumption trends, and political and social constraints.  
2. Synthesis information about agricultural issues and make informed arguments  
3. Articulately discuss modern issues in agriculture  
4. Write coherent arguments relative to personal beliefs regarding agricultural issues

AEEC 2140. Technology and Communication for Business Management  
3 Credits (2+2P)  
This course helps students improve their skills related to data analysis, information management, and communication. Drawing examples from a variety of management, business, technological and research situations, students discover the versatility and functionality of modern computer software. The course emphasizes a ‘hands-on’ approach.

Learning Outcomes  
1. Demonstrate an understanding of the meaning of terms used to describe common techniques and concepts in business information systems. Demonstrate the use and application of tools to develop spreadsheets and documents at a professional level
**AECC 2996. Special Topics**  
1-4 Credits  
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.  

**Learning Outcomes**  
1. Varies

**AERO-AEROSPACE STUDIES (AERO)**

**AERO 121. Heritage and Values**  
2 Credits (1.25+2P)  
"Heritage and Values of the United States Air Force," is a survey course designed to introduce students to the United States Air Force and provides an overview of the basic characteristics, missions, and organization of the Air Force. Includes Leadership Lab practicum. May be repeated up to 2 credits. Restricted to Las Cruces campus only.

**AERO 122. Heritage and Values II**  
2 Credits (1.25+2P)  
"Heritage and Values of the United States Air Force," is a survey course designed to introduce students to the United States Air Force and provides an overview of the basic characteristics, and organization of the Air Force. Includes Leadership Lab practicum. May be repeated up to 2 credits. Restricted to Las Cruces campus only.

**AERO 221. Team and Leadership Fundamentals**  
2 Credits (1.25+2P)  
"Teams and Leadership Fundamentals," focuses on laying the foundation for teams and leadership. The topics include skills that allow cadets to improve their leadership on a personal level and within a team. The courses will prepare cadets for their field training experience where they will be able to put the concepts learned into practice. The purpose is to instill a leadership mindset and to motivate sophomore students to transition from AFROTC cadet to AFROTC officer candidate. Includes Leadership Lab practicum. May be repeated up to 2 credits. Restricted to Las Cruces campus only.

**AERO 222. Team and Leadership Fundamentals II**  
2 Credits (1.25+2P)  
"Teams and Leadership Fundamentals," focuses on laying the foundation for teams and leadership. The topics include skills that allow cadets to improve their leadership on a personal level and within a team. The courses will prepare cadets for their field training experience where they will be able to put the concepts learned into practice. The purpose is to instill a leadership mindset and to motivate sophomore students to transition from AFROTC cadet to AFROTC officer candidate. Includes Leadership Lab practicum. May be repeated up to 2 credits. Restricted to Las Cruces campus only.

**AERO 223. Air Force Leadership Development**  
1 Credit (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.

**AERT-AEROSPACE TECHNOLOGY (AERT)**

**AERT 105. Aerospace Engineering PLTW**  
4 Credits (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 Credits (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 121. Introduction to the Aerospace Workplace**  
4 Credits (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 Credits (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 211. Electromechanical Devices**  
4 Credits (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. Crosslisted with: MAT 240.  
Prerequisite(s): ELT 160.

**AERT 212. Materials and Processes (Basic Metallurgy)**  
3 Credits (2+2P)  

**AERT 213. Aerospace Fluid Systems**  
3 Credits (2+2P)  
The course includes a familiarization of fluid system components, characteristics, and applications. Cryogenic and hypogolic materials and high pressure systems are also covered. Restricted to: Community Colleges only.

**AERT 214. Aerospace Systems**  
3 Credits (2+2P)  
The 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 Credits (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 Credits (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. Crosslisted with: MAT 245.
Prerequisite(s)/Corequisite(s): AERT 221 or MAT 240. Prerequisite(s): ELT 160.

AERT 224. Aerospace Tests and Measurements
3 Credits (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.
Prerequisite(s)/Corequisite(s): AERT 221. Restricted to: Community Colleges only.

AERT 225. Cooperative Experience
1-3 Credits (1-3)
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 Credits (1-4)
Specific topics to be announced in the Schedule of Classes. Restricted to: Community Colleges only.

AERT 290. Independent Study
1-3 Credits (1-3)
Individual studies in areas directly related to aerospace. Consent of instructor required. Restricted to: Community Colleges only.

AGRO-AGRONOMY (AGRO)

AGRO 1110G. Introduction to Plant Science (Lecture & Lab)
4 Credits (3+2P)
This is an introductory course for understanding plant science. Basic biological, chemical, and physical principles of various plants are covered. The focus of this course is on plants/crops used in agriculture production of food and fiber as well as pasture and range plants. Plant taxonomy and soil properties will also be discussed. Same as HORT 1115G.

Learning Outcomes
1. Describe the basic structure of plants including growth and function.
2. Define photosynthesis, respiration, and translocation
3. Utilize plant taxonomy techniques to identify various plants.
4. Classify soils based on their chemical and physical properties.
5. Explain how different soil properties affect plant growth and sustainability.

AGRO 2160. Plant Propagation
3 Credits (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 2160.

Learning Outcomes
1. Practical methods of propagating plants by seed, cuttings, layering, grafting, division, and tissue culture through experiential, "hands-on" laboratories.
2. Relevant physiological principles involved in propagating horticultural plants through lecture discussions.
3. Independent study.

AGRO 2996. Special Topics
1-4 Credits (1-4)
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. May be repeated up to 9 credits. Consent of Instructor required.

AHS-ALLIED HEALTH SCIENCE (AHS)

AHS 102. Careers in the Health Fields
1-3 Credits (1-3)
This course will provide students with a broad understanding of health careers as well as emerging issues in health. This will also include the study of the functional roles of practice, education, administration, and research in health fields. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.

AHS 115. Dietary Guidelines & Meal Planning
4 Credits (4)
A combination of the science of nutrition and the current Dietary Guidelines for Americans with practical application to meal planning and preparation. Strategies and techniques used to plan and prepare healthful and appetizing meals are explored. Evidenced-based dietary guidelines are provided to meet the needs of individuals and groups with chronic diseases. Menu development, modification and analysis are reviewed. Restricted to Community Colleges campuses only.

AHS 120. Medical Terminology
3 Credits (3)
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 construction of medical words, appropriate spelling, use of medical terms, and use of medical abbreviations. Same as HIT 1150. May be repeated up to 3 credits. Crosslisted with: NURS 150, BOT 150 and HIT 150. Restricted to Community Colleges campuses only.

AHS 153. Introduction to Anatomy and Physiology I
4 Credits (3+3P)
Survey of human anatomy and physiology.
Prerequisite: high school biology or high school chemistry, or CHEM 1120G, or consent of instructor.
AHS 155. Special Topics
1-6 Credits
Topics to be announced in the Schedule of Classes. May be repeated for a maximum of 6 credits.

AHS 190. Clinical Skills & Concepts for Medical Assisting I
6 Credits (3+6P)
A core course designed to provide an introduction to the theory, concepts, and skills needed for entry-level medical assisting positions. Content includes basic theory and concepts designed to support safe and effective practice as a medical assistant in ambulatory care settings. Includes a skills laboratory for hands-on practice and 96 hours of supervised clinical in the work environment. Restricted to Community Colleges campuses

Learning Outcomes
1. Apply theoretical knowledge associated with medical assisting in providing basic healthcare services.
2. Perform essential clinical skills within the medical assistant scope of practice in ambulatory clinic settings.
3. Recognize factors that affect procedures and results, and take appropriate actions with predetermined limits when indicated, including patient compromise or complications.
4. Demonstrate professional conduct and interpersonal communication skills with patients, other health care professionals, and with the public.
5. Recognize the responsibilities of other health care personnel and interact with them with respect for their jobs and patient care.
6. Apply basic scientific principles in learning new techniques and procedures.
7. Relate vital sign and laboratory findings to common disease processes.

AHS 202. Legal and Ethical Issues in Health Care
3 Credits (3)
Consideration of legal and ethical issues in modern health care delivery.

AHS 250. Spanish for Health Professionals
3 Credits (3)
Spanish for Health Professionals is a 3 credit course geared toward individuals working or majoring in health related areas. The course focus is on conversation and vocabulary needed for the workplace and task based practical skills. Restricted to: Community Colleges only.

AHS 280. Medical Office Administration & Management
4 Credits (2+4P)
A core course designed to provide the theory, concepts, and skills needed in preparation for entry-level medical assisting positions. Content includes theory and concepts related to medical office administration. The course includes skills, hands-on practice, and 40 hours of supervised clinical in the work environment in ambulatory care settings. Restricted to Community Colleges campuses only.

AHS 290. Clinical Skills & Concepts for Medical Assisting II
6 Credits (3+6P)
A core course designed to provide the theory, concepts, and skills needed in preparation for entry-level medical assisting positions. Content includes theory and concepts related to specialty areas of healthcare practice, as well as consideration for conditions affecting persons throughout the life span. The course includes a skills laboratory for hands-on practice and 96 hours of supervised clinical in the work environment with specialized populations and procedures in both ambulatory and acute care settings. Restricted to Community Colleges campuses

Learning Outcomes
1. Apply theoretical knowledge associated with medical assisting in providing basic healthcare services.
2. Perform essential clinical skills within the medical assistant scope of practice in ambulatory clinic settings where specialized care is given, as well as, acute care settings.
3. Recognize factors that affect procedures and results, and take appropriate actions within predetermined limits when indicated, including patient compromise or complications.
4. Demonstrate professional conduct and interpersonal communication skills with patients, other health care professionals, and with the public.
5. Recognize the responsibilities of other health care personnel and interact with them with respect for their jobs and patient care.
6. Apply basic scientific principles in learning new techniques and procedures.
7. Relate vital sign and laboratory findings to common disease processes.

ANSC-ANIMAL SCIENCE (ANSC)

ANSC 1110. Animal Science Careers
1 Credit (1)
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.

Learning Outcomes
1. Increasing the understanding of career opportunities in animal agriculture.
2. Gain a broad experience in the development of creative thinking about the career choices available in animal agriculture.
3. Apply the increased knowledge of career development in the career path and internship directions for each student.
4. Gain leadership experience that will be impactful for the student in their pursuit of a career in animal agriculture.
ANSC 1120. Introduction to Animal Science
3 Credits (3)
This course is designed to provide an introduction to nutrients and their function in livestock animals. Basic feed identification, evaluation, and diet formulation will be discussed. The anatomy of the digestive tract of animals and their ability to utilize feedstuffs is presented. Classification, digestion, absorption, transport and metabolism of major nutrients required by animals are studied.

Learning Outcomes
1. Identify conventional and non-conventional feedstuffs that are fed to livestock animals.
2. Describe various methods for feed processing and storage.
3. Assess the nutritional value of a ration or feed ingredients.
4. Interpret the NRC (Nutrient Requirement Council) guidelines for feeding livestock.
5. List the basic digestive anatomy for all classes of livestock.
6. Describe nutritional deficiencies and digestive disorders common to livestock animals.

ANSC 1120H. Introduction to Animal Science Honors
3 Credits (3)
This course is designed to provide an introduction to nutrients and their function in livestock animals. Basic feed identification, evaluation, and diet formulation will be discussed. The anatomy of the digestive tract of animals and their ability to utilize feedstuffs is presented. Classification, digestion, absorption, transport and metabolism of major nutrients required by animals are studied. Additional course work will be required. Restricted to Las Cruces campus only.
Prerequisite(s): Eligibility for membership in honors college.

Learning Outcomes
1. Identify conventional and non-conventional feedstuffs that are fed to livestock animals.
2. Describe various methods for feed processing and storage.
3. Assess the nutritional value of a ration or feed ingredients.
4. Interpret the NRC (Nutrient Requirement Council) guidelines for feeding livestock.
5. List the basic digestive anatomy for all classes of livestock.
6. Describe nutritional deficiencies and digestive disorders common to livestock animals.

ANSC 1120L. Introduction to Animal Science Lab
1 Credit (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.
Prerequisite(s)/Corequisite(s): ANSC 1120.

Learning Outcomes
1. To provide the students with an understanding of the principles, concepts and terminology of today’s livestock industry.

ANSC 1130. Western Equitation I
2 Credits (4P)
Basic principles of Western riding, including care and management of the riding horse, equitation equipment, and development of riding skills.

ANSC 1140. Introduction to Dairy Science
3 Credits (3)
Introduction to the basic aspects of dairy science and how to apply key concepts to the practical feeding and management of dairy cattle and production of dairy products. Students should also obtain an appreciation for the size and diversity of the dairy industry.
Prerequisite(s)/Corequisite(s): ANSC 1120. Restricted to Las Cruces campus only.

Learning Outcomes
1. Learn key concepts in dairy production and management.
2. Be familiar with terms used in production of milk and milk products.

ANSC 1160. Introductory Horse Science
3 Credits (2+2P)
The light horse industry; breeds; introduction to feeding, breeding, marketing and management; handling and selecting horses for breeding and performance.

Learning Outcomes
1. Describe and identify breeds of horses, their characteristics and their uses.
2. Demonstrate knowledge of basic physiology of horses by recalling parts of the horse, including bones, muscle, tendons and ligaments. Also, by ageing horses via teeth, body condition scoring and taking vital signs.
3. Demonstrate safe and proper handling of horses.
4. Demonstrate comprehension of basic nutrition and feedstuffs by formulating/correcting diets in clinical and non-clinical situations.
5. Recall aspects of basic reproduction by calculating a stallion book and recalling appropriate procedures for breeding.
6. Create informative articles that seek to educate the lay horse person about a topic covered in class.

ANSC 1170. Introduction to Animal Metabolism
3 Credits (3)
Principles underlying the mechanisms of animal metabolism as they relate to production, maintenance, and health of animals.
Prerequisite: CHEM 1215G.

Learning Outcomes
1. This course provides an introduction to the study of the physiology of life.
2. The first part of the course covers acids and bases and the chemical nature of organic compounds.
3. The second part of the course relates to the chemistry of biomolecules (nutrients) and summarizes the chemical reactions of life (metabolism).
ANSC 1180. Companion Animal in Society
3 Credits (3)
Examination of the historical, current, and potential future roles of companion animals in human society. Topics include animal domestication, breeds, exotic companion animals, the companion animal industry, and competitions and sports involving companion animals. Emphasis is on canine and feline species. May be repeated up to 3 credits. Restricted to Las Cruces campus only.

Learning Outcomes
1. Discuss the theories regarding why, how, and when companion animals became domesticated.
2. Describe how selective breeding has optimized certain physiological and behavioral traits of companion animals in order to fulfill the needs of individual people and society.
3. Explain the concept of human-companion animal interaction (HAI) and the influence this bond has on human behavior, health, society, and government policy/laws.
4. Understand the breadth and economic impact of the rapidly expanding companion animal industry and the recent expenditure trends of pet owners.
5. Discuss the past and present uses of companion animals and theorize regarding the future uses of companion animals in society.
6. Be effective in searching for, and critically evaluating, scientific based resources.

ANSC 2120. Equine Management
3 Credits (3)
Introduction and application of the 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: ANSC 1160.

Learning Outcomes
1. Develop a working knowledge of the business principles needed to operate a successful entrepreneurial enterprise.
2. Increase the awareness of the need for business principles in the aggregate function of an equine operation.

ANSC 2130. Western Equitation II
2 Credits (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.

Learning Outcomes
1. Increasing the understanding of the student relative to equitation practices
2. Increase the students’ ability to apply principles of Western Equitation to applied settings across a broad spectrum of outlets
3. Prepare the student to engage equine in a professional manner

ANSC 2140. Introduction to Companion Animal Science
3 Credits (3)
Introduction to the care of common companion animal species. Species specific housing and nutrition are covered in the context of maximizing animal health and well-being and reducing disease. May be repeated up to 3 credits.

Learning Outcomes
1. Accurately use scientific terminology common to the companion animal discipline.
2. Compare and contrast the physiological similarities and differences between the various companion animal species studied in class.
3. Create dietary plans based on the nutritional needs of different companion animal species to optimize animal health and lifespan.
4. Identify symptoms of disease/injury at the early stages of illness in order to obtain Veterinary care and treatment as quickly as possible.
5. Design and construct species specific cages/vivariums to maximize animal well-being and health.
6. Educate others regarding providing the best possible care for a variety of companion animal species.

ANSC 2150. Management of Equine Operations
3 Credits (3)
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 1160.

Learning Outcomes
1. Acquire a working knowledge of different sectors of the equine industry, including business practices, management and marketing skills.

ANSC 2310. Introduction to Meat Science
3 Credits (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.

Learning Outcomes
1. Increasing the understanding of meat science applications across animal agriculture.
2. Increase the students’ ability to apply principles of production to the industry perspective.
3. Apply the increased knowledge of meat science in a global situation.
4. Gain an understanding of the components involved in the development and processing of the red meat industry.
ANTH 1115G. Introduction to Anthropology
3 Credits (3)
Anthropology is the systematic study of the humanity both past and present. The course introduces students to the four subfields of anthropology, which include archaeology, biological, linguistic and cultural anthropology. Students will learn about the concepts and approaches, and methods that anthropologists use to study our species and gain a broader perspective on the human experience.

Learning Outcomes
1. Increasing the understanding of meat animal production.
2. Increase the students' ability to apply principles of production to the industry perspective.
3. Apply the increased knowledge of meat animal production to global situations.
4. Gain a broader understanding of the importance of meat animals in the global food system.

ANTH 1135G. Introduction to Biological Anthropology
3 Credits (3)
This course provides a basic introduction to the broad field of biological anthropology. The research interests of biological anthropologists include the history and development of modern evolutionary biology, molecular and population genetics, modern primates, the primate and human fossil record, and modern human biological diversity.

Learning Outcomes
1. Summarize the basic principles of evolution and recognize how they apply to the human species. Recognize the biological and behavioral continuity of humans with all life, and especially other modern primate species. Identify ways in which the human species is biologically and behaviorally unique. Summarize fossil evidence for human evolution. Distinguish the major Paleolithic industries and outline the behavioral and cognitive changes indicated by the fossil and archeological evidence. Critically evaluate popular accounts of human variation and human evolution. Interpret modern human dilemmas (e.g., overpopulation, co-evolution of disease, and genetic engineering) from an evolutionary perspective. Discuss in class and analyze in writing scholarly arguments concerning course concepts.

ANTH 1135L. Introduction to Biological Anthropology Lab
1 Credit (2P)
This laboratory course expands on the topics covered in lecture course and uses scientific methods and principles to examine evidence for the process of evolution, the nature of heredity, human evolutionary history and family tree relationships, primate ecology and behavior, and modern human diversity. Hands-on experience with fossil and skeletal material will be an important part of the learning process. Corequisite(s): ANTH 1135G.

Learning Outcomes
1. Demonstrate an understanding of the scientific method. Employ principles of Mendelian genetics to determine genotype and phenotype probabilities, and calculate gene, genotype, and phenotype frequencies using the Hardy-Weinberg Equilibrium formula. Demonstrate an understanding of cell structure and functions. Use common lab and anthropometric equipment such as a compound microscope and calipers. Discuss primate evolution, and compare and contrast members of the Primate order in terms of structure, behavior, and phylogeny. Classify hominin species based upon selected traits such as anatomical changes associated with bipedalism, changes in the size and structure of the brain, and the development of culture. Locate and describe the major bones of the human skeleton, and identify characteristics of human skeletons or skulls such as gender, age, and ancestry. Discuss current research in genome analysis of various hominin populations.

ANTH 1136. Introduction to Historic Preservation
3 Credits (3)
Introduction to historic preservation, its history, goals, methods, legal basis, and economic importance. Explores public role in decision-making. Community Colleges only.

Learning Outcomes
1. Understand why historic preservation is important;
2. be familiar with what is important to preserve;
3. know who among the general public, state, and federal governments is responsible for preserving the past;
4. Have gained experience in how we all preserve.
ANTH 1137G. Human Ancestors
3 Credits (3)
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.

Learning Outcomes
1. Describe the evolution of the human species, from its origin in the primate order to the emergence of Homo sapiens, and to the present-day.
2. Describe the social lives of apes and identify similarities to and differences between apes and humans.
3. Explain the biological foundations of human behavior.

ANTH 1140G. Introduction to Cultural Anthropology
3 Credits (3)
This is an introductory course that provides an overview of cultural anthropology as a subfield within the broader discipline of anthropology and as a research approach within the social sciences more generally. The course presents core concepts and methods of cultural anthropology that are used to understand the ways in which human beings organize and experience their lives through distinctive cultural practices. More specifically, this course explores social and cultural differences and similarities around the world through a variety of topics such as: language and communication, economics, ways of making a living, family, marriage and family, kinship and descent, race, ethnicity, political organization, supernatural beliefs, sex and gender, and globalization. This course ultimately aims to present a broad range of perspectives and practices of various cultural groups from across the globe.

Learning Outcomes
1. Introduce students to the basic concepts and research methods of cultural anthropology as one of the disciplines of social science, including fundamental concepts, such as culture and society, which form the pillars of the discipline (e.g., cultural relativism, cultural persistence and change, world-view and enculturation). Comprehend the importance of studying cultural anthropology. Demonstrate knowledge of the practice of anthropological research in the modern world that is increasingly multicultural, transnational and globally interconnected (e.g., globalization and modern world system). Demonstrate an awareness of how students' own cultures shape their experiences and the way they see the world, as well as help them understand and interact with other cultures. Understand how beliefs, values and assumptions are influenced by culture, biology, history, economic, and social structures. Gain a sense of relationship with people possessing different experiences from their own. Gain a deeper understanding and appreciation for cultural anthropology as a broad discipline through learning about its practices, and differentiating cultural anthropology from other disciplines that study

ANTH 1160G. World Archaeology
3 Credits (3)
This course is an exploration of human evolution and cultural development throughout the world. Students will be introduced to basic anthropological methods and theories and will learn how anthropological research has contributed to our understanding of major themes in human prehistory, including human evolution, the origins of culture, migration and colonization, animal and plant domestication, and the rise and fall of civilizations.

Learning Outcomes
1. Describe and explain the major developments in human prehistory.
2. Identify and describe major archaeological cultures throughout the world.
3. Employ critical thinking skills in the evaluation of competing theories about the past.
4. Select and use relevant archaeological evidence to explain how prehistoric populations adapted to their natural and cultural environments.
5. Demonstrate competency in written communication.

ANTH 2140G. Indigenous Peoples of North America
3 Credits (3)
This course is a general survey of the history and ethnology of indigenous groups in North America. The course is designed to give students a comprehensive view of major issues pertaining to the indigenous cultures of North America, such as family structure, social organization, subsistence and contemporary economies, environmental adaptation, Indian-White relations, religious practices, and contemporary issues.

Learning Outcomes
1. Demonstrate familiarity with common elements pertaining to the languages and social organization of indigenous peoples in North America.
2. Recognize fundamental differences and similarities among traditional indigenous cultures.
3. Describe social relations of indigenous peoples in relationship to other ethnic groups.
4. Identify and analyze important ways that European societies and cultures and indigenous societies and cultures interacted from the time of Columbus to the present.
5. Evaluate the impacts of Euroamerican policies and programs on indigenous cultures.
6. Distinguish major social issues facing contemporary indigenous communities in North America.
7. Understand objectives and limitations of cross-cultural analysis in anthropology as they relate to the study of indigenous peoples in North America.
8. Demonstrate research and communication skills as they relate to the study of indigenous peoples in North America.
ANTH 2150. Indigenous Peoples of the American Southwest
3 Credits (3)
This course is a study of indigenous cultural groups of the American Southwest. Students will explore historical and contemporary cultural and social patterns of American Indian, Hispanic and Anglo-American groups.

Learning Outcomes
1. Describe socio-cultural developments, geographic environments, and characteristics of major cultural groups that currently inhabit the American Southwest.
2. Recognize underlying similarities as well as the wide range of variability of the cultural groups in the American Southwest.
3. Recognize the impacts and effects of Euroamerican colonization on indigenous cultural groups in the American Southwest.
4. Describe the historical interactions and accommodations among indigenous cultural groups in the American Southwest.
5. Examine the processes of cultural change within major cultural groups in the American Southwest.
6. Identify and analyze some of the contemporary issues faced by major cultural groups in the American Southwest.

ANTH 2996. Special Topics
1-4 Credits
Specific subjects to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits.

Learning Outcomes
1. Varies

ARCH 1105. Orientation and Mentoring in Architecture-Construction-Engineering (ACE)
1-6 Credits (1-6)
This course is intended for high school dual credit students and college/university students wishing to explore careers in Architecture, Construction, and Engineering (ACE), which includes the specific fields of Architectural, Civil, Mechanical, Structural, Interior, Landscape, Sustainability, and Environmental. Students receive one-on-one mentoring, attend field trips, and engage in hands-on activities. May be repeated up to 6 credits. Restricted to Community Colleges campuses

Learning Outcomes
1. Career opportunities related to ‘ACE’
2. Career requirements: Education
3. Career requirements: Experience and/or examination(s)
4. Overview of construction/management
5. Overview of Architecture
6. Overview of Civil engineering
7. Overview of Surveying
8. Overview of Mechanical Engineering
9. Overview of Electrical Engineering
10. Overview of Landscape Architecture
11. Overview of Interior Design
12. Overview of Sustainable design
13. Overview of the Design Process
15. Structural drafting/detailing principles
16. AutoCAD applications: Sheet Layout, Drawing Standards, Efficiency, Speed, Accuracy
17. Structural CAD software applications
18. Sustainability in Structural Systems
ARCH 1110. Architectural Drawing
4 Credits (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. Students are provided exposure to a wide range of interconnected architectural concepts and to manual and digital drawing, as well as modeling techniques for architectural and interior design. Students will learn how to represent composition, form, and space by orthographic drawing, paraline and perspective views, and freehand sketching. Three-dimensional model building techniques will also be introduced.

Learning Outcomes
1. Gain understanding of basic methods of architectural drawing
2. Explore and gain understanding of concepts of spatial design and its representation through exercises
3. That stress analytical ability and an awareness of rational design process
4. Gain an understanding of the design process with practice and various exercises
5. Gain exposure to architectural delineation
6. Demonstrate an understanding of specific skills and concepts related to architectural drawing
7. Create and modify architectural models through various phases of a project
8. Demonstrate a knowledge of graphic standards according to industry conventions
9. Identify the various phases of work with regard to the architectural and interior design professions
10. Develop analytical and critical thinking skills

ARCH 1112. Global Issues and Sustainability
3 Credits (3)
Introduction to global environmental issues (historic, present, and future), and the impact on tomorrow’s design and construction professions. Issues will include, but shall not be limited to global warming, energy consumption, population, natural resource consumption, air and water quality, waste management, facilities operation management, politics, and facilities design & construction. The impact on the design and construction industry, including ‘Green Building’ and ‘LEED Accreditation and Certification/Criteria’ will also be addressed. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.

Learning Outcomes
1. Discover global environmental history to better understand sustainable topics and change your behavior in the future.
2. Expand your knowledge on environment, natural resource consumption, human intervention, politics, and design and construction industry to support your education and future careers.
3. Learn how the US Green Building Council LEED (Leadership in Energy and Environmental Design) certification and Accredited Professional training expands your knowledge on green building design criteria; will help you determine whether you want to take the LEED exam.
4. Examine the many sides of climate change and its effects on the globe as well as our individual microclimate and personal lives to learn how to adapt to the current changes
5. Learn how to effectively research, report, present, and debate environmental topics to help you in your education and future careers.

ARCH 1114. Introduction to Architectural Design
3 Credits (2+2P)
This course provides students who possess a basic background in architecture and architectural drawing with an introduction to architectural design. Students are guided through a series of spatial and analytical exercises that focus attention on two dimensional, three dimensional, and four dimensional design. This course will build on direct linkages to ARCH 1120 and ARCH 1110 to further students’ exposure to interconnected architectural concepts of process, organizational strategies, and analysis of material methodology while utilizing abstract and practiced graphical architectural conventions. Consent of Instructor required. Restricted to Community Colleges campuses only.

Prerequisite(s): ARCH 1120 and ARCH 1110.

Learning Outcomes
1. Develop critical thinking strategies through a series of connected exercises in order to explain, demonstrate, categorize, compare, contrast and assess information/evidence.
2. Explore concepts of design through spatial design and apply these concepts through a series of progressive representational exercises that stress analytical ability and an awareness of rational design process.
3. Gain skills in the application of graphical communication in a range of media.
4. Enhance abilities in selecting specific information and applying that information to problem solve issues/concerns required to complete a task, while considering other implications.
5. Develop skill in writing and speaking effectively and use representational media appropriate for both within the profession and with the public.
6. Gather, assess, record, and comparatively evaluate relevant information and performance in order to support conclusions related to a specific project or assignment.
7. Utilize basic formal, organizational and environmental principles and the capacity of each to inform two- and three-dimensional design.
8. Apply fundamentals of both natural and formal ordering systems and the capacity of each to inform two- and three-dimensional design.
9. Demonstrate basic principles of structural systems and their ability to withstand gravitational, seismic, and lateral forces, as well as the selection and application of the appropriate structural system.
ARCH 1120. Introduction to Architecture
3 Credits (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. Students are introduced to elements, principles, and theories of architecture through their social, historical, and technical determinants. The course seeks to lay a foundation in architectural studies, including introducing students to fundamental vocabulary and concepts.

Learning Outcomes
1. Identify and describe significant architects and iconic buildings
2. Discuss social, cultural, and aesthetic contributions of specific architects and projects
3. Explain architectural concepts via written and graphic communication
4. Recall basic processes and vocabulary of architectural professional practice
5. Understand our built environment and the language of design and architecture
6. Understand how buildings are constructed and explain the process of development
7. Describe and discuss design elements, principles, and theories
8. Understand the relationships among owner, surveyors, designers, architects, engineers, and contractors
9. Research design texts and analyze buildings, landscapes, interiors, sustainability, and products to
10. Increase knowledge of important elements of architecture and design
11. Identify the various styles, periods, and movements and their social, historical, and technical impacts on architecture

ARCH 1121. Computers in Architecture
3 Credits (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.

Learning Outcomes
1. Demonstrate the use of the computer and plotters/printers
2. Define and understand different terminologies
3. Demonstrate the understanding of different files using windows operating system
4. Understanding the appropriate use of the software in order to produce necessary drafting outcomes
5. Use proper plotting and printing procedures in order to increase efficiency and minimize paper waste
6. Demonstrating the use of different line types as the relate to drafting

ARCH 1122. Architectural Design Studio I
5 Credits (1+8P)
Enhancement of general graphic communication skills and introduction to fundamental design including exploration, development and defense of design concepts; structural order; 2D and 3D processes in manual and digital architectural graphic expression; model building; general communication and presentation techniques; and development of course portfolio. Course is Studio/critique-based with considerable amount of work/hours required. This course is designed to be taken during student’s last year in the Pre-Architecture program at DACC. Consent of Instructor required. Restricted to Community Colleges only.

Prerequisite(s): Grade of B- or better in both ARCH 1120 and ARCH 1110.

Learning Outcomes
1. Write and speak effectively and use representational media appropriate for both within the profession and with the general public.
2. Raise clear and precise questions, use abstract ideas to interpret information, consider diverse points of view, reach well-reasoned conclusions, and test alternative outcomes against relevant criteria and standards
3. Gather, assess, record, and comparatively evaluate relevant information and performance in order to
4. Support conclusions related to a specific project or assignment.
5. Effectively use basic formal, organizational and environmental principles and the capacity of each to inform two-and three-dimensional design.
6. Apply the fundamentals of both natural and formal ordering systems and the capacity of each to inform two-and three-dimensional design.
7. Examine and comprehend the fundamental principles present in relevant precedents and to make
8. Informed choices about the incorporation of such principles into architecture and urban design projects.
9. Prepare a comprehensive program for an architectural project that includes an assessment of client and user needs; an inventory of spaces and their requirements; an analysis of site conditions (including existing buildings); a review of the relevant building codes and standards, including relevant sustainability
10. Requirements, and an assessment of their implications for the project; and a definition of site selection and
11. Design assessment criteria.
12. Respond to site characteristics, including its context and developmental patterning, the fabric, soil, topography, ecology, climate, and building orientation, in the development of a project design. Design sites, facilities, and systems that are responsive to relevant codes and regulations, and include the principles of life-safety and accessibility standards.
13. Demonstrate the basic principles of structural systems and their ability to withstand gravitational, seismic, and lateral forces, as well as the selection and application of the appropriate structural system.
14. Understand the basic principles involved in the appropriate selection and application of building envelope systems relative to fundamental performance, aesthetics, moisture transfer, durability, and energy and material resources.
ARCH 1220. Architecture World History I
3 Credits (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 of the classical and pre-modern world. Community Colleges only. Restricted to Alamogordo, Dona Ana and Grants campuses.

Learning Outcomes
1. Identify major architectural monuments from prehistory to the Renaissance (1400's) in the Western world
2. Demonstrate an understanding of major monuments, styles of architecture and building traditions of non-Western cultures
3. Recognize the relationship of movements and styles in Western architecture to their counterparts in painting and sculpture from the various historical periods
4. Describe the basic principles of urban design
5. Express an appreciation of architectural achievements and the ways in which the elements of art (line, form, color, texture, light, etc.) combine to produce objects of beauty in the built environment
6. Describe basic engineering concerns and achievements in architecture

ARCH 1310. Introduction to Architecture, Engineering, & Construction
3 Credits (3)
Introduction to and exploration of careers in the fields of architecture, engineering, and construction. Specific fields to include: architecture, civil engineering, mechanical engineering, structural engineering, engineering technology, residential construction, commercial construction, geographical information systems (GIS), surveying, sustainable design, and green building Crosslisted with: DRFT 100.

Learning Outcomes
1. Prepare accurate written technical documents, Produce drawing documents that are technically sound, Develop and practice productive work skills, and Upgrade technical knowledge and skills to keep pace with real-world changes ARCT 100 Course Competencies
2. Describe different career options in architecture, engineering, and construction, Define the roles of different design professionals and support staff, Explain related educational and professional licensing requirements, Articulate employer expectations, Explore related courses and programs of study at DACC and NMSU, and Develop good workplace skills and professional, productive work habits.

ARCH 2111. Architectural Delineation I
3 Credits (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. Use of digital tools and media as applicable. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.

Learning Outcomes
1. Develop and utilize visual observation skills
2. Translate visual observations into graphical information
3. Develop and utilize critical thinking in the development of projects
4. Develop effective line drawing techniques
5. Produce graphical representations using various shading techniques
6. Communicate design concepts and ideas clearly

ARCH 2113. Sustainable Design in Architecture
3 Credits (3)
This course provides students with hands-on opportunity to increase their awareness in, and respond to the issues of responsible environmentally friendly building design by engaging in an integrated design process combining 'Traditional Design Process' with 'Sustainable Environmental Design' strategies. Students will expand their awareness of global environmental impacts due to design and construction, and gain knowledge in the industry’s leading design ‘tool’ LEED (Leadership in Energy and Environmental Design) green building design rating system. LEED strategies will be utilized in the design of individual projects apply LEED in practical, individual design development, and develop an integrated building model utilizing the concept of BIM (Building Information Modeling). Such project development will require learning a basic design process and specific sequence including conceptual design, schematic design, design development and BIM (utilizing a BIM software such as REVIT, or AutoCad Architecture). May be repeated up to 3 credits.

Prerequisite(s): DRFT 109 or DRFT 165 or ARCH 2114.

Learning Outcomes
1. Understand Global Issues that impact sustainability of resources and quality of/equity in life.
2. Understand the impact of buildings on the environment
3. Identify the basic principles of ‘green’ design and construction
4. Identify and Interpret basic principles of the LEED green building rating system
5. Engage in research of green technologies and design practices
6. Understand the essential steps of the design process
7. Develop a basic building design which qualifies for at least LEED Certified rating
8. Utilize a BIM integrated software package to develop a virtual Building Information Models
9. Develop presentation posters and slideshow of design work
10. Conduct project presentations, and critique work of peers in a clear, concise manner

ARCH 2114. Construction Documents
3 Credits (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. Restricted to: Community Colleges only.

Prerequisite(s)/Corequisite(s): DRFT 109.

Learning Outcomes
1. Create full 3D architectural project models, both via tutorials, and independently
2. Set models up as working drawings.
3. Have a working knowledge of the tools that the majority of users will use to work with Revit Architecture.
4. Project File management skills
ARCH 2115. Architecture Design Studio II
5 Credits (1+8P)
Advanced graphic communication, design, and 3D physical model representation. Focus on site analysis, programming and fundamental design issues of context, environment, program development and space planning, 2D and 3D design and presentation techniques. Course is 'studio/critique-based' with considerable amount of outside work/hours required. This course is designed to be taken during student's last year in the Pre-Architecture program at DACC. Restricted to Alamogordo, Dona Ana and Grants campuses.
Prerequisite(s): Grade of C- or better in ARCH 1122.
Learning Outcomes
1. Write and speak effectively and use representational media appropriate for both within the profession and with the general public.
2. Raise clear and precise questions, use abstract ideas to interpret information, consider diverse points of view, reach well-reasoned conclusions, and test alternative outcomes against relevant criteria and standards.
3. Gather, assess, record, and comparatively evaluate relevant information and performance in order to support conclusions related to a specific project or assignment.
4. Effectively use basic formal, organizational and environmental principles and the capacity of each to inform two-and three-dimensional design.
5. Apply the fundamentals of both natural and formal ordering systems and the capacity of each to inform two-and three-dimensional design.
6. Examine and comprehend the fundamental principles present in relevant precedents and to make informed choices about the incorporation of such principles into architecture and urban design projects.
7. Prepare a comprehensive program for an architectural project that includes an assessment of client and user needs; an inventory of spaces and their requirements; an analysis of site conditions (including existing buildings); a review of the relevant building codes and standards, including relevant sustainability requirements, and an assessment of their implications for the project; and a definition of site selection and design assessment criteria.
8. Respond to site characteristics, including its context and developmental patterning, the fabric, soil, topography, ecology, climate, and building orientation, in the development of a project design.
9. Design sites, facilities, and systems that are responsive to relevant codes and regulations, and include the principles of life-safety and accessibility standards.
10. Demonstrate the basic principles of structural systems and their ability to withstand gravitational, seismic, and lateral forces, as well as the selection and application of the appropriate structural system.
11. Understand the basic principles involved in the appropriate selection and application of building envelope systems relative to fundamental performance, aesthetics, moisture transfer, durability, and energy and material resources.

ARCH 2116. Architectural Delineation
3 Credits (2+2P)
Continuation of ARCH 2111 with an emphasis in color media.
Prerequisite(s): ARCH 2111.
Learning Outcomes
1. Develop and utilize visual observation skills.
2. Translate visual observations into graphical information.
3. Develop and utilize critical thinking in the development of projects.
4. Develop effective line drawing techniques.
5. Produce graphical representations using various shading techniques.
6. Communicate design concepts and ideas clearly.

ARCH 2122. LEED Accreditation Exam Prep
3 Credits (3)
This course is intended for anyone in the construction or architectural design fields who is interested in learning more about green building and the LEED (Leadership in Energy and Environmental Design) strategies, and are also interested in learning about how to become LEED accredited. Overview of the LEED rating systems utilized in the design and operation of buildings, the various LEED building certifications, and accreditation requirements for professionals. Highlights include interpretation of the LEED Reference Guides, accepted strategies for meeting LEED certification, sample practice exams, integrated project delivery methods, and a practical approach to problem solving through the use of design problems. Restricted to Community Colleges only.
Learning Outcomes
1. The student completing this course should gain knowledge and skills for each of the topics covered in the Course Outline.
2. Successful completion of this course should give each student a working knowledge of various LEED Rating Systems, and LEED GA Study Guides.
3. Students will develop critical thinking strategies to enable them to develop preliminary design and plan checking for code compliance.
4. Students should develop acceptable and productive work habits.

ARCH 2124. Professional Development and Leadership-AIAS
1-3 Credits
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.
Learning Outcomes
1. Leadership skills.
2. Presentation techniques and public speaking.
3. Organizational and team building skills.
4. Architecture-related skills.
5. Community organizations and service.
ARCH 2220. Architectural World History II
3 Credits (2+2P)
A survey of the development of world architecture from the enlightenment in Europe to the present. Community Colleges only. Restricted to Alamogordo, Dona Ana and Grants campuses.
Prerequisite(s): ARCH 1220 or consent of instructor.
Learning Outcomes
1. Identify major architectural monuments from 1400 to the present in the Western world
2. Identify major architectural monuments from 1400 to the present in the Western world
3. Recognize the relationship of movements and styles in Western architecture to their counterparts in design, painting, and sculpture from the various historical periods
4. Describe the basic principles of urban design
5. Express an appreciation of architectural achievements and the ways in which the elements of art (line, form, color, texture, light, etc.) combine to produce objects of beauty in the built environment
6. Analyze basic engineering concerns and achievements in architecture

ARCH 2994. Portfolio Design in Architecture
3 Credits (3)
This course is intended for Pre-Architecture students in their last semester of the program. Students develop a comprehensive portfolio that compiles, organizes, and showcases their most accomplished coursework produced in Architecture courses at DACC, in preparation for application to a 4 yr. Architecture program. Skills and techniques in architectural photography, scanning, and design layout using graphic software. Restricted to Community Colleges only.
Corequisite(s): ARCT 2115.
Learning Outcomes
1. Edit and enhance previous drawings, digital files, and models.
2. Research and learn about portfolio and layout styles.
3. Development/Presentation of Final Portfolio for application/transfer purposes, as well as presenting it to the class and other reviewers.
4. Document drawings, models, digital work and other productions accurately and effectively.
5. Organize their coursework and select the images that best showcase learned skills
6. Develop organizational habits to record and document their work and back up digital copies
7. Develop analytical skills to produce an effective layout to then produce a portfolio
8. Organize, layout and design their own portfolio.

ARCH 2995. Cooperative Experience
1-6 Credits
Supervised cooperative work program. Student employed in approved occupation; supervised and evaluated by employer and instructor. Student meets weekly with instructor. Graded S/U.
Prerequisite: consent of instructor.
Learning Outcomes
1. Varies

ARCH 2996. Special Topics
1-6 Credits
Topics subtitled in the Schedule of Classes. May be repeated for a maximum of 12 credits.
Prerequisite: consent of instructor.
Learning Outcomes
1. Varies

ARTh-ArT HiSToRy

ARTH 1115G. Orientation in Art
3 Credits (2+3P)
A multicultural examination of the principles and philosophies of the visual arts and the ideas expressed through them.
Learning Outcomes
1. Identify elements of art principles of design.
2. Articulate the relationship of art to the human experience.
3. Write and discuss critically using the vocabulary of art.
4. Interpret art within cultural, social, personal, and historical contexts.
5. Critically analyze an original work of art.

ARTH 2110G. History of Art I
3 Credits (3)
This survey course explores the art and architecture of ancient prehistoric cultures through the end of the fourteenth century. While focused primarily on the art of the Western civilizations, this course will also provide insights into the works of other major cultures in order to provide alternate views of art and history. Emphasis will be placed on the relationship of artworks to political, social, spiritual, intellectual, and cultural movements that affect and are affected by their creation and development.
Learning Outcomes
1. Identify major artworks from a variety of regions and time periods.
2. Investigate the methods of producing various works of art.
3. Articulate an understanding and appreciation for the political, social, spiritual, intellectual, and cultural contexts of art forms.
4. Comprehend and apply terms, methodologies and concepts common to studies of art history, developing a language to further understanding of art.
5. Compare works across a range of historical styles and periods.
ARTH 2120G. History of Art II  
3 Credits (3)  
This survey course will explore the architecture, sculpture, ceramics, paintings, drawings, and glass objects from the 14th century to the modern era. While focused primarily on the art of the Western civilizations, this course will also provide insights into the works of other major cultures in order to provide alternate views of art and history. Emphasis will be placed on the relationship of artworks to political, social, spiritual, intellectual, and cultural movements that affect and are affected by their creation and development. May be repeated up to 3 credits.  

Learning Outcomes  
1. Identify major artworks from a variety of regions and time periods.  
2. Investigate the methods of producing various works of art.  
3. Articulate an understanding and appreciation for the political, social, spiritual, intellectual, and cultural contexts of art forms.  
4. Comprehend and apply terms, methodologies and concepts common to studies of art history, developing a language to further understanding of art.  
5. Compare works across a range of historical styles and periods.  

ARTH 2136. Writing in Art  
3 Credits (3)  
This class looks at the variety of writings associated with art history and studio art practice. It explores the discipline of art history itself, and introduces students to the specific ways in which art historians study art. Within a workshop setting, students will practice approaches to research, understanding art and writing about art. Students will also be introduced to professional writing practices, including digital formats, relating to studio art.  

Learning Outcomes  
1. Develop visual literacy in looking at art  
2. Analyze a complex art historical argument  
3. Apply art specific vocabulary to critically-based writings and discussions of art  
4. Develop writing skills to articulate the relationship of art to the human experience  

ARTS 1121. Foundations in Art  
3 Credits (2+4P)  
The Foundations course will focus on a deceptively simple question. "What is Contemporary Art, and how can we make it?" Through the exploration of basic visual design concepts, collaborative learning, and interdisciplinary studio production, this course will help us to discover what it means to be an artist in the 21st century.  

Learning Outcomes  
1. Create original works of art through the investigation of ideas and concepts resulting in the communication of meaning. Develop forms that convey meaning. Evaluate works of art through critiques that appraise how the form communicates meaning. Justify the decisions that were made in the use and application of the chosen medium and form to communicate meaning in a work of art. Analyze the differences in clarity of communication between works of art based subject matter, medium and form. Apply knowledge provided in lectures to produce works of art that communicate meaning. Demonstrate an ability to express concepts in visual form. Understand how the choice of subject matter, medium and form translate in the expression of concepts through discussion and description. Remember the fundamental tenets of art, elements and principles of design, through the duplication of them in works of art as well their use in discussions.  

ARTS 1145G. Visual Concepts  
3 Credits (2+4P)  
Visual Concepts is an 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.  

Learning Outcomes  
1. Develop understanding of history, major styles and contemporary issues in art.  
2. Introduce students to the language of visual perception and aesthetic evaluation.  
3. Introduce students to the fundamental processes of visual perception and artistic expression.  
4. Develop students’ confidence in using various art materials for artistic expression.  
5. Develop students’ ability to verbalize ideas and processes in art making.  
6. Develop student’s ability to communicate through writing about art and art experiences.
ARTS 1240. Design I
3 Credits (3)
This course introduces the fundamentals of two-dimensional design as it applies to fine art and commercial contexts. Emphasis will be on basic color theory, elements of dynamic composition, vocabulary of visual arts and design, and development of visual conceptual skills. Students will use a variety of materials and techniques. Restricted to Community Colleges campuses only.

Learning Outcomes
1. Produce art works that apply and organize the elements of two-dimensional form (line, shape, value, texture, color and space).
2. Produce artworks that apply the principles of two-dimensional design (harmony, variety, repetition, balance, rhythm, proportion, dominance, movement, and economy).
3. Demonstrate effective use of materials and techniques with consideration for craftsmanship and presentation.
4. Use visual art vocabulary in the development and critique of work
5. Explore concepts and ideas: from conceptual, realistic/referential to non-representational

ARTS 1250. Design II
3 Credits (3)
This course introduces the basic formal (aesthetic), spatial, and physical aspects of 3-D form as they can be applied to sculptural and functional design. Techniques that explore structure, mass, volume, scale, surface, form, and function are covered, along with various media, which may include paper, wood, clay, and/or metal. Restricted to Community Colleges campuses only.

Learning Outcomes
1. Apply the artistic qualities of the elements of art and principles of design to three-dimensional form.
2. Create 3 dimensional form using varied sculptural methods, construction techniques and media.
3. Produce 3 D design projects safely with proper use of equipment and materials.
4. Apply realistic, referential, and abstract concepts and ideas to projects.
5. Demonstrate knowledge of 3-D related art vocabulary, origin and trends in sculpture, and 3-D design fundamentals.

ARTS 1310. Introduction to Ceramics
3 Credits (2+4P)
This course introduces the technical processes and conceptual concerns of working with ceramic material. Various methods of forming functional and expressive works out of clay are explored. Methods used include handbuilding and throwing, basic clay bodies, slip and glaze, and atmospheric firing.

Learning Outcomes
1. Explain the transformation of the ceramic material from raw clay form to glazed ceramic object
2. Demonstrate proficiency of technical ceramic skills
3. Explain larger concepts and design principles
4. Apply basic 3-D design principles in the formation of a work of art, as they apply to the ceramic media
5. Create ceramic works of art based on conceptual prompts
6. Critically evaluate a variety of artwork
7. Gain an understanding of the history of ceramic art from a multicultural perspective

ARTS 1320. Ceramics I
3 Credits (2+4P)
An introduction to the medium of clay incorporating hand building and wheel throwing to introduce the student to both the sculptural and utilitarian uses of clay. The student will also be introduced to a variety of glazing and firing techniques

Learning Outcomes
1. Demonstrate through critical discourse writing an introductory knowledge of the history of ceramics, and ceramic language and terminology.
2. Demonstrate through mechanical application an introductory knowledge of the properties of clays, glazes, and a variety firing techniques.
3. Produce a body of work that exemplifies good ceramic design through the effective use of form, surface, and color.
4. Through the production a body of work demonstrate competency in hand building and throwing on the wheel.

ARTS 1410. Introduction to Photography
3 Credits (2+4P)
This course introduces the making of photographic images from a broad viewpoint to consider both as an art practice and as a cultural practice. The course covers technical information on camera use and functionality, composition and visual design, digital workflow and editing, professional functions of manipulating and enhancing images, and printing correctly and effectively. The historical aspects of photography are also covered.
May be repeated up to 3 credits.

Learning Outcomes
1. Gain fluency with basic camera function as well as a working knowledge of other photographic equipment and software to produce technically competent photographs
2. Have a familiarity with current image-editing software to enhance images as well as developing a digital workflow for the management of digital images
3. Be able to develop creative solutions to visual photographic problems
4. Gain awareness of contemporary issues in contemporary art photographic practice that can be applied to the one's own individual practice
5. Develop the ability to critically analyze and discuss photographic images
6. Print and produce a final project that demonstrates synthesis of ideas presented in the course readings, critiques, and individual research
7. Demonstrate photographic terminology, and the many ways photographs function in society, both currently and historically
ARTS 1520. Digital Media I
3 Credits (2+4P)
This course provides an introduction to two of Adobe's major software applications, Illustrator and Photoshop, which are essential in creating artwork, designing promotional materials, websites and more. Part of the course deals with creating a variety of documents using the major tools of each program, and gaining an understanding of the contemporary graphic design industry and basic elements and principles of design. Community Colleges only.

Learning Outcomes
1. Demonstrate appropriate skills in configuring and navigating computer systems software applications as appropriate to digital image making needs including organization of files using keywords and running batch processes.
2. Exhibit an understanding of a layer based bitmap editing program, through photo retouching, precise use of selection tools, and color adjustment techniques.
3. Create imagery using a vector based illustration program which demonstrates an understanding of vector based drawing tools.
4. Integrate the use of bitmap and vector images using bitmap and vector based image making applications to demonstrate a basic understanding of composition, color, and appropriate image size and resolution.

ARTS 1610. Drawing I
3 Credits (2+4P)
This course introduces the basic principles, materials, and skills of observational drawing. Emphasis is placed on rendering a 3-D subject on a 2-D surface with visual accuracy. Other topics include historical and contemporary references as well as an investigation of linear perspective, line, value, shape, space & composition. May be repeated up to 3 credits.

Learning Outcomes
1. Produce drawings that demonstrate techniques and mechanics of observational drawing.
2. Demonstrate competency in the following practices: measuring and sighting, gesture, contour line, negative space, shape, value, space, volume, plane and texture.
3. Create drawings primarily from observation with black and white traditional drawing media.
4. Demonstrate effective verbal or written response to one's own art and the art of others.

ARTS 1630. Painting I
3 Credits (2+4P)
This course introduces the tradition of painting as a medium for artistic expression. Students will investigate materials, tools, techniques, history and concepts of painting. Emphasis is placed on developing descriptive and perceptual skills, color theory, and composition. May be repeated up to 3 credits.

Prerequisite(s): ARTS 1610.

Learning Outcomes
1. Produce paintings that demonstrate the tradition of methods, techniques, materials, and tools of oil painting.
2. Construct a variety of support structures and grounds on which paintings are created
3. Examine the historical origins and practices of painting from the personal, social and cultural perspective.
4. Identify and apply environmentally safe painting practices, care of tools, equipment, and facilities, as well as disposal of mediums, solvents and paints.
5. Apply basic color theory to representational and non-representational painting.

ARTS 1710. Introduction to Printmaking
3 Credits (2+4P)
This course provides direct experience of exploring basic printmaking processes, including relief, intaglio, and monoprint processes, as well as the investigation of materials/media, tools, techniques, history, and concepts of printmaking. Emphasis is given to solving problems through thematic development while producing a portfolio of prints.

Learning Outcomes
1. Properly operate a printing press and safely handle materials and equipment.
2. Demonstrate an adequate ability to utilize basic historical printmaking techniques that are widely relevant to contemporary, artistic expressions.
3. Utilize formal elements of art and design (line, shape, value, texture, space, and color), to create prints that are formally sophisticated.
4. Create imagery that contains conceptual depth, which can be interpreted by viewers with regard to social, cultural, political, geographical, and/or psychological experiences and relevance.

ARTS 1711. Computer-Based Illustration
3 Credits (2+4P)
Introduction to the principles of computerized drawing and design. Using the basic concepts, drawing tools, and vocabulary of Adobe Illustrator.

Prerequisite: ARTS 1610, ARTS 1240, or consent of instructor.

Learning Outcomes
1. Demonstrate drawing with the pen tool.
2. Demonstrate the use of blending color and creating shapes.
3. Create spot colors and effectively use them in a page layout.
4. Demonstrate formatting and creating typography.
5. Demonstrate the use of layers, effects, graphic styles, symbols, and brushes
6. Demonstrate competency in creating digital graphics using of Adobe Illustrator software
ARTS 1712. Digital Graphics
3 Credits (2+4P)
Importing and exporting images and text into various desktop publishing formats. Exploring imaging, drawing, and page layout applications. Introduction to typography.
Prerequisite: ARTS 1520.
Learning Outcomes
1. Demonstrate competency in the use of InDesign software.
2. Create appropriate visual solutions based on target marketing information.
3. Demonstrate competency in the design and production of advertising and promotional materials.
4. Present ideas and concepts effectively and competently.
5. Visually demonstrate design solutions to be used in a portfolio

ARTS 1713. Web Page Design
3 Credits (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. Community Colleges only.
Prerequisite: ARTS 1520.
Learning Outcomes
1. Outline the structure and functionality of a typical website.
2. Demonstrate design and layout skills.
3. Demonstrate competency in the use of Dreamweaver software.
4. Demonstrate competency in the use of photo editing software.
5. Demonstrate skills learned for website functionality.
6. Create an Internet compatible website.

ARTS 1810. Jewelry and Small Metal Construction I
3 Credits (2+4P)
This course introduces the basic techniques, materials, and tools traditionally used in the creation of jewelry and/or small-scale sculptural objects.
Learning Outcomes
1. Apply basic jewelry fabrication techniques (such as: piercing, cold connections, soldering, metal forming, casting and stone setting) to complete projects. Create design sketches of the objects prior to fabrication. Demonstrate knowledge of materials and safe practices for making jewelry, as well as small functional and non-traditional objects. Analyze projects through critiques, oral presentations, and discussions.

ARTS 2010. Portfolio Development
3 Credits (2+4P)
This course presents the practicalities of building an art career with emphasis on developing a professional portfolio through visual aids, resumes, statements, and presentations. It covers professional practices of the studio artist including self-promotion, contracts, research tools for exhibition venues and other art related opportunities.
Prerequisites: ARTS 1712, ARTS 2611, and ARTS 1520, or consent of instructor.
Learning Outcomes
1. Develop a portfolio package with visual aids, photographic documentation, resumes, bios and artist statements.
2. Analyze the qualifications, procedures and portfolio requirements necessary for professional art related opportunities.
3. Complete an oral presentation on a series of personal works.
4. Distinguish pathways for navigating the business side of being a professional artist.

ARTS 2355. Stained Glass
3 Credits (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.
Learning Outcomes
1. Demonstrate an understanding of the theory, principles and procedures that comprise the art and science of designing at least four (40) stained glass techniques through both written and verbal assessments, as well as, actual completed examples of each technique.
2. Properly select and safely employ various glass studio tools, instruments, procedures, methods and techniques in the fabrication processes of stained glass.
4. Work cooperatively in a studio classroom.
5. Relate historical background and significant developments of glass in general and stained glass in particular.
6. Understand the chemical processes associated with various processes used in working with and manipulating glass.
7. Develop critical thinking and problem solving strategies in various stained glass fabrication techniques.
8. Be able to critically analyze, assess and appreciate the value of glass works of every kind.
ARTS 2410. Black & White Photography
3 Credits (2+2P)
This course introduces the fundamental techniques of black and white photography, which includes camera functions and use, exposure techniques and film processing, traditional darkroom printing, and presentation of work. Same as ARTS 1410.

Learning Outcomes
1. Demonstrate competent film development and photographic printing skills
2. Demonstrate an emerging understanding of aesthetic, compositional, conceptual, and communicative tools in photography including lighting and dynamic composition techniques.
3. Be able to critically analyze and discuss photographic images using photographic terminology
4. Demonstrate proper image adjustment and correction techniques, and apply proper exposure techniques

ARTS 2430. Photographic Portraiture
3 Credits (2+2P)
This course covers the study of professional photography that involves people, including studio and environmental portraits. Topics include studio and exterior lighting techniques, and selecting lighting equipment and supplies. Restricted to: Community Colleges only.

Prerequisite(s): ARTS 1410 or FDMA 1545.

Learning Outcomes
1. Demonstrate successful operation of studio lighting equipment and accurately define lighting equipment terminology
2. Illustrate the principles of photographic lighting
3. Demonstrate and apply how to use and modify natural light effectively
4. Demonstrate understanding of different approaches such as formal, informal, candid, vernacular and their cultural implications
5. Distinguish historic and contemporary cultural notions informing different types of portraits

ARTS 2440. Photo Finishing & Presentation
2 Credits (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. Restricted to: Community Colleges only.

Prerequisite(s): FDMA 1545.

Learning Outcomes
1. Define your target market and create a complete “Personal Promotional Package”
2. Produce a professional Resume Cover Letter.
3. Produce a professional looking Business Card, Letterhead Mailing Labels
4. Produce a single page Promotional Piece, (and possible follow-up material)
5. Produce a PDF Formatted Portfolio (Create in Photoshop Export as PDF)
6. Produce a clean, professional looking traditional hard portfolio with 20-30 pieces
7. Present the Entire Promotional Portfolio and promo materials in a “Job Interview”

ARTS 2431. Introduction to Graphic Design
3 Credits (2+4P)
Introduction to the principles of visual communication and digital media, letterforms, typography and identity marks. Projects produced using conventional and digital tools.

Learning Outcomes
1. Demonstrate working knowledge of the graphic design software.
2. Identify and apply basic design concepts for the purpose of visual communication.
3. Conduct visual research and create presentations on design topics.
4. Solve graphic design problems through solving fundamental communication challenges by sketching, drawing, typographic composition, use of image and color.

ARTS 2440. Photo Finishing & Presentation
2 Credits (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. Restricted to: Community Colleges only.

Prerequisite(s): FDMA 1545.

Learning Outcomes
1. Define your target market and create a complete “Personal Promotional Package”
2. Produce a professional Resume Cover Letter.
3. Produce a professional looking Business Card, Letterhead Mailing Labels
4. Produce a single page Promotional Piece, (and possible follow-up material)
5. Produce a PDF Formatted Portfolio (Create in Photoshop Export as PDF)
6. Produce a clean, professional looking traditional hard portfolio with 20-30 pieces
7. Present the Entire Promotional Portfolio and promo materials in a “Job Interview”

ARTS 2610. Drawing II
3 Credits (2+4P)
This course introduces color and colored media as an element of composition while emphasizing descriptive and perceptual drawing skills and conceptual approaches to contemporary drawing. Restricted to ART and ANVE/DFM majors.

Prerequisite(s): ARTS 1610.

Learning Outcomes
1. Create drawings in wet and dry color media.
2. Practice analyzing and visually translating observed subjects from realistic, referential, and/or objective form, to non-representational or abstract imagery
3. in drawings.
4. Compose fully developed drawings that include a conceptual or historical basis.
5. Engage in effective written and oral critique in response to one's own art and the art of others.

ARTS 2611. Advanced Computer-Base Illustration
3 Credits (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: ARTS 1212, ARTS 1711, and ARTS 1520, or consent of instructor.

Learning Outcomes
1. Demonstrate competency in the use of Adobe Illustrator software.
2. Create appropriate visual solutions based on target marketing information.
3. Demonstrate competency in the design and production of advertising and promotional materials.
4. Present ideas and concepts effectively and competently.
5. Visually demonstrate design solutions to be used in a portfolio
ARTS 2616. Aspects of Drawing
2-3 Credits
Continued work in drawing with emphasis on personal creative endeavor. Community Colleges only.
Prerequisites: ARTS 1610 and ARTS 2610.
Learning Outcomes
1. Advanced skill level in the visual dynamics of line involved in the creation of drawing.
2. Advanced skill level in the visual dynamics of shape involved in the creation of drawing.
3. Advanced skill level in the visual dynamics of value involved in the creation of drawing.
4. Advanced skill level in the visual dynamics of color involved in the creation of drawing.
5. Advanced skill level in the visual dynamics in the combination of line, shape, value and color involved in the creation of drawing.

ARTS 2630. Painting II
3 Credits (2+4P)
This course focuses on the expressive and conceptual aspects of painting, building on the observational, compositional, technical, and critical skills gained previously. Students will investigate a variety of approaches to subject matter, materials, and creative processes through in-class projects, related out-of-class assignments, library research or museum/gallery attendance, written responses, and critiques. Prerequisite(s): ARTS 1610 and ARTS 1630
Learning Outcomes
1. Produce paintings building on the skills and techniques learned in Painting I
2. Solve unique format, support, ground, over and under texturing surface challenges
3. Practice analyzing and translating observed subjects from realistic, referential, and/or objective form, to non-representational imagery
4. Create paintings that explore personal content, stylization, symbolism, narrative, and/or iconography

ARTS 2635. Painting III
2-3 Credits
Continuation of ARTS 2630.
Prerequisites: ARTS 1610, ART 1240 (for art majors), ART 1630, or consent of instructor.
Learning Outcomes
1. Color mixing and color relationships
2. Create illusions of space and volume
3. The student will strengthen his or her own personal artistic style. Knowledge of the proper use and maintenance of painting tools
4. Explore and learn the technique of a master painter of the past.
5. Awareness of nature, “eye hand response,” and an imaginative or personal use of the medium.
6. Awareness of the creative process, exploring unforeseen possibilities
7. An ability to work independently.
8. Understanding of painting styles and arts vocabulary

ARTS 2839. Introduction to Sculpture
3 Credits (2+4P)
Beginning sculpture students “explore space” while learning new processes and skills, including mold making, welding and woodworking.
Learning Outcomes
1. Be able to utilize a variety of traditional materials and sculpture processes, including: mold making, metal fabrication/wood fabrication, and the creative integration of mixed media.
2. You will learn to differentiate between objects and installations, and be prepared to explore sculpture in upper division, topics based courses.

ARTS 2993. Art Workshop
0.5 Credits (.5)
Required for all freshman and sophomore Art majors for four semesters, this workshop is designed to build professional student cohorts within the Department of Art; incorporate visiting artist and scholar lectures into the curriculum; and actively involve students in exhibitions and gallery and departmental events. May be repeated up to 4 credits. Crosslisted with: ARTS 308. Restricted to: BA Studio Art, BA Art History BFA Studio Art, BFA Museum Conservation majors. Restricted to Las Cruces campus only.
Learning Outcomes
1. Varies

ARTS 2996. Special Topics in Studio
1-3 Credits
Specific subjects and credits to be announced in the Schedule of Classes. No more than 9 credits toward a degree.
Prerequisite: consent of instructor.
Learning Outcomes
1. Varies
ASTR-ASTRONOMY (ASTR)

ASTR 1115G. Introduction Astro (lec+lab)
4 Credits (3+2P)
This course surveys observations, theories, and methods of modern astronomy. The course is predominantly for non-science majors, aiming to provide a conceptual understanding of the universe and the basic physics that governs it. Due to the broad coverage of this course, the specific topics and concepts treated may vary. Commonly presented subjects include the general movements of the sky and history of astronomy, followed by an introduction to basic physics concepts like Newton’s and Kepler’s laws of motion. The course may also provide modern details and facts about celestial bodies in our solar system, as well as differentiation between them – Terrestrial and Jovian planets, exoplanets, the practical meaning of “dwarf planets”, asteroids, comets, and Kuiper Belt and Trans-Neptunian Objects. Beyond this we may study stars and galaxies, star clusters, nebulae, black holes, and clusters of galaxies. Finally, we may study cosmology—the structure and history of the universe. The lab component of this course includes hands-on exercises that work to reinforce concepts covered in the lecture, and may include additional components that introduce students to the night sky.

Learning Outcomes
1. Students will discuss the night sky as seen from Earth, including coordinate systems, the apparent daily and yearly motions of the sun, Moon, and stars, and their resulting astronomical phenomena.
2. Students will list and apply the steps of the scientific method.
3. Students will describe how gravity and other physical processes that determine the appearance of the universe and its constituents.
4. Students will describe methods by which planets are discovered around other stars and current results.
5. Students will describe the origin, evolution, and expansion of the universe based on the Big Bang Theory and recent Astronomical observations.
6. Students will describe conditions for life, its origins, and possible locations in the universe.

ASTR 1116. Introduction to Astronomy Lab, Special
1 Credit (1)
This lab-only listing exists only for students who may have transferred to NMSU having taken a lecture-only introductory astronomy class, to allow them to complete the lab requirement to fulfill the general education requirement. Consent of Instructor required. Restricted to Las Cruces campus only.

Prerequisite(s): Must have passed Introduction to Astronomy lecture-only.

Learning Outcomes
1. Course is used to complete lab portion only of ASTR 1115G or ASTR 112
2. Learning outcomes are the same as those for the lab portion of the respective course.

ASTR 1120G. The Planets
4 Credits (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.

Learning Outcomes
1. Students will describe the sky as seen from Earth, the apparent daily and yearly motions of the Sun, Moon, planets and stars, and resulting astronomical phenomena.
2. Students will apply the process of the scientific method in an astrophysical setting.
3. Students will describe the structure of the solar system and explain the development of the currently accepted model of solar system formation.
4. Students will explain how telescopes and spectra are used to extract information about astronomical objects.
5. Students will describe properties of minor solar system objects, such as dwarf planets, moons, asteroids, meteoroids, and comets.
6. Students will compare and contrast bulk and unique properties of the Terrestrial and Jovian worlds.
7. Students will describe how gravity and other physical processes determine the appearance of the solar system and its constituents.

AUTO-AUTOMOTIVE TECHNOLOGY (AUTO)

AUTO 102. Electrical Measuring Instruments
2 Credits (1+2P)
Selection, operation, and care of electrical measuring instruments.

AUTO 111. Automotive Mechanics Basics
4 Credits (4)
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 Credits (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 Credits (2+4P)
Topics include mastery of DC electricity, use of digital multimeters, troubleshooting electrical problems in starting, charging and accessory systems. Restricted to Community Colleges only.

AUTO 114. Automotive Electricity and Electronics PT II
4 Credits (2+4P)
Advanced AC and DC automotive electronic circuits. Troubleshooting electronically controlled components including supplemental restraint systems and convenience accessories. Restricted to Community Colleges campuses only.
Prerequisite: AUTO 113.

Learning Outcomes
1. Understand and demonstrate safety rules related to electronically controlled automotive systems. Diagnosis and demonstrate knowledge of series, parallel, and combination circuits, and their applications as applied to automotive repair. Demonstrate use of wiring diagrams as a diagnostic aid. Demonstrate use of meters, handheld labscopes, scan tools, and other diagnostic equipment. Demonstrate use of repair manuals, both hard copy and electronic. Demonstrate knowledge, diagnose and repair Air Bag Supplemental Inflatable Restraint systems Demonstrate knowledge, diagnose and repair various convenience electronic systems. Interpret customer concerns, create and complete a diagnostic routine and successfully repair an electrical problem. Diagnose and repair starting and charging systems.

AUTO 115. Automotive Engine Repair
5 Credits (2+6P)
Principles of gasoline engine operation. Identification of engine parts, operation, and function. Disassembly and reassembly. Engine problem diagnoses (cooling system, lubrication system, engine noises). Restricted to Community Colleges only.

AUTO 117. Electronic Analysis and Tune-Up of Gasoline Engines
5 Credits (2+6P)
Theory and operation of ignition and emission control systems and fuel system. Use of troubleshooting equipment and diagnostic equipment. Prerequisite: AUTO 120 or consent of instructor.

AUTO 119. Manual Transmission/Clutch
5 Credits (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 Credits (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 122. Automotive Brakes
4 Credits (2+4P)
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. Restricted to Community Colleges only.

AUTO 124. Automotive Heating and Air Conditioning
4 Credits (2+4P)
R12 and R134A air conditioning systems maintenance diagnosis and repair. R12 to R134A conversion procedures. Troubleshooting automatic temperature controls and leak detection. Restricted to Community Colleges only.

AUTO 125. Brakes
5 Credits (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 Credits (2+6P)
types of steering systems, suspension maintenance and repair, four-wheel alignment procedures.

AUTO 127. Basic Automatic Transmission
4 Credits (2+4P)
Theory and operation of the automatic transmission; maintenance, troubleshooting, diagnosis, and repair of components.

AUTO 129. Automotive Steering and Suspension
4 Credits (2+4P)
Diagnosis/service of suspension components including shocks, springs, ball joints, manual and power steering systems and four wheel alignment are some areas covered. Restricted to Community Colleges only.

AUTO 130. Introduction to Transportation Industry
3 Credits (3)
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
3 Credits (1+4P)
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. Restricted to Community Colleges campuses only. Prerequisite(s): Class A CDL restricted license (permit) and either restriction of D.O.T.

AUTO 132. Automotive Air-Conditioning and Heating Systems
4 Credits (2+4P)
Theory and operation, reading schematic diagrams, troubleshooting, repair, and replacement operations performed.

AUTO 137. Fuel Systems and Emission Controls
4 Credits (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 Credits (2+4P)
Same as OEP 139.

AUTO 162. Advanced Non-Structural Repair I
4 Credits (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 Credits (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 Credits (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 Credits (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 Credits (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 basecoat/clear coat refinishing systems.

AUTO 174. Intermediate Automotive Refinishing
4 Credits (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 Credits (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 Credits (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 Credits (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 including: 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 Credits (2+4P)
This course is a continuation of AUTO 181 with emphasis on 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 201. Engine Performance I
4 Credits (2+4P)
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. Restricted to Community Colleges only.

AUTO 202. Engine Performance II
4 Credits (2+4P)
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. Restricted to Community Colleges only.

AUTO 203. Engine Performance III
4 Credits (2+4P)
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 of 4 and 5 gas analyzers is mastered. Hybrid vehicles and the latest engine control systems are introduced. Restricted to Community Colleges only.

AUTO 204. Engine Performance IV
4 Credits (2+4P)
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 of 4 and 5 gas analyzers is mastered. Hybrid vehicles and the latest engine control systems are introduced. Restricted to Community Colleges only.

AUTO 205. Manual Drive Train and Axles
4 Credits (2+4P)
Operation, diagnosis, maintenance, repair or replacement of manual transmissions, clutch assemblies, differentials, drivelines, axles, and manual transaxles. Restricted to Community Colleges only.

AUTO 206. Automatic Transmissions
5 Credits (2+6P)
Operation, diagnosis, maintenance, and repair of automatic transmissions including rear wheel drive, front wheel drive, and electronically controlled transmissions and transaxles. Restricted to Community Colleges only.
AUTO 208. Introduction to Alternative Fueled Vehicles  
3 Credits (3)  
Course will familiarize student with conditions that are resulting in the alternative fueled vehicle movement as well as the design and safety precautions unique to each alternative fuel. Propulsion systems covered include electric vehicles, bio-fueled vehicles, hybrid-electric vehicles and hydrogen powered vehicles, along with other emerging technologies as appropriate. Restricted to: Community Colleges only.  
Prerequisite(s): AUTO 113 and AUTO 114.

AUTO 209. Hybrid Vehicle Service Techniques  
3 Credits (3)  
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 '0' high voltage gloves and liners to attend this class. Restricted to: Community Colleges only.  
Prerequisite(s): AUTO 113 and AUTO 114.

AUTO 221. Cooperative Experience I  
1-6 Credits  
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 Credits  
Individual studies in areas directly related to automotive technologies. May be repeated for a maximum of 12 credits.  
Prerequisite: consent of instructor.

AUTO 290. ASE Certification Preparation  
1 Credit (1)  
This is the capstone course for the Automotive Technology Program and is a requirement for graduation. Consent of Instructor required. Restricted to: AUTO majors. Restricted to Community Colleges campuses

Learning Outcomes
1. write technical reports explaining customers complaint(s), specific component malfunction(s) and related problems to include repair procedures, specifications, parts and costs associated with each specific repair
2. determine, categorize and document component or systems malfunctions which will be discussed in class
3. adequately identify safety hazards associated with electrical, electronic, hydraulic, pneumatic and mechanical systems before participating in any lab project
4. use a systematic approach to identify, diagnose and repair new hydro, electrical and mechanical systems
5. identify all related parts and components before attempting to repair each system
6. clearly identify and understand the specific function of each component before these systems and subsystems are dismantled for repairs
7. demonstrate proficiency in locating, identifying and following procedures for repairs as outlined on the Mitchell and All-DATA computer information systems
8. retrieve all phases of automotive information needed to repair the following: Electrical and Electronics, Engine Repair, Engine Performance, Automatic transmissions, Heating And Air Conditioning Systems
9. demonstrate proficiency in the proper usage of on-board computer scanners used to identify and properly diagnose possible malfunction within a specific on-board computer system
10. 1 demonstrate proficiency in the proper use of scanners, information and vehicle specifications to determine needed repairs
11. 1 identify, evaluate, diagnosis and repair electrical, electronic and mechanical systems and subsystems

AUTO 295. Special Topics  
1-6 Credits  
Topics to be announced in the Schedule of Classes.

AVIM - AVIATION MAINTENANCE

AVIM 101. Aviation Science  
3 Credits (3)  
Provides students with basic technical mathematics skills, an overview of general physics as applied to the work of an Airframe and Powerplant (A&P) technician, and instruction in the reading and interpreting of aircraft drawings. Restricted to Alamogordo campus only.  
Prerequisite(s): Appropriate Math placement score.

AVIM 102. Shop Practices  
3 Credits (3)  
Introduces students to specialty tools, shop safety, workplace practices, basic aviation materials and processes. Students also learn to fabricate fluid lines and fittings, identify type fasteners, and processes for nondestructive testing. Restricted to Alamogordo campus only.
AVIM 103. Ground Operations
3 Credits (3)
Identifies aircraft fuels, cleaning procedures and corrosion removal, as well as ground operation procedures including safety, fueling, and start-up of aircraft. Restricted to Alamogordo campus only.

AVIM 104. Federal Regulations
2 Credits (2)
Instruction on how to read, comprehend, and apply all FAA maintenance forms and publications as related to aircraft maintenance. Also describes all rights and privileges of A & P technicians. Restricted to Alamogordo campus only.

AVIM 105. Weight and Balance
2 Credits (2)
Describes proper procedures for weighing and loading aircraft and center of gravity (C.G.) safety and procedures for jacking aircraft. Restricted to Alamogordo campus only.

AVIM 106. Basic Electricity
3 Credits (3)
Explains theories and principles of electricity related to aircraft circuitry. Restricted to Alamogordo campus only.

AXED-AGRICULTURAL EXTN EDUC (AXED)

AXED 1110. Introduction to Agricultural, Extension, and Technology Education
3 Credits (3)
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.

Learning Outcomes
1. Orient student to the AXED Department and their role as students.
2. Explore career opportunities (and the related skill sets needed for success) in public schools, career and technical institutions, the cooperative extension service, community, and international development, agricultural communications, agricultural industry associations and public service (e.g., NMDA and USDA).
3. Develop an understanding of the self-leadership skills needed to be effective in a variety of professional and personal environments.
4. Familiarize students with the aspects included within a total program in agricultural or technology education.
5. Strengthen skills in oral and written communications.

AXED 1120. Introduction to Agricultural Communication
3 Credits (3)
Students will learn about the history and theories of agricultural communications, be introduced to the degree program, explore careers in the field, and examine the role of media in agricultural communications.

Learning Outcomes
1. Identify classes needed in the degree program and relevant clubs.
2. Recall important times in history of agricultural communication and journalism.
3. Comprehend the communication process and identify its components.
4. Identify effective and efficient media for agricultural communication.
5. Analyze the various roles and uses of media in agriculture communication.
6. Apply theories of communication and journalism to class assignments.

AXED 1130. Techniques in Agricultural Mechanization
3 Credits (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.

Learning Outcomes
1. To understand basic drafting language used in orthographic and isometric drawings.
2. To develop an understanding of the proper use and safety of basic hand and power tools.
3. To develop skills needed to operate basic hand and power tools correctly.
4. To develop an understanding of surveying methods and building layout for construction.
5. To develop an adequate level of competence in workshop techniques.
6. To prepare students to properly teach and demonstrate these techniques to others who may use them as a means of earning a living.
AXED 2110. Metal Fabrication
3 Credits (2+4P)
Instruction and skill development in process and procedures of metal fusion, including gas and electric welding techniques, safety, and oxy-acetylene cutting and welding. Designed to improve mechanical skills needed in agriculturally related occupations in education and industry.

Learning Outcomes
1. To develop students understanding and appreciation for metal fabrication, design and teaching.
2. To develop in the student an adequate level of competence in shop work techniques, so that the student may be able to properly teach and demonstrate multiple metal fabrication techniques to others who may use them as a mean of earning a living.
3. To develop the student's fundamental techniques in shielded metal arc welding, oxy-acetylene welding and cutting operations, metal inert gas welding (MIG), and gas tungsten-arc welding as needed in repair and construction of agricultural equipment.
4. Student will understand appropriate shop management techniques and have an appreciation for mechanized agriculture.
5. To assist the student in developing an understanding and comprehension of the fundamental principles that apply to the area of basic shop work included in this course; such as proper selection of electrodes, oxy-acetylene filler rods, welding processes best suited for given welding conditions, the proper tool for the job, etc.
6. To develop in the student comprehension of safety practices that apply to the areas of basic shop work, tools, and equipment required in the course.

AXED 2120G. Effective Leadership and Communication in Agriculture
3 Credits (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.

Learning Outcomes
1. Understanding Leadership: Definitions of Leadership; Agricultural Education, FFA, Leadership; Leadership Categories; Democratic, Authorization, and Situational Leadership; Personality and Leadership Relations; Developing Leaders; Personal Leadership Development; Ability, Experience, and the Opportunity to Lead; Leadership in the Workplace; Human Relations, Technical, and Conceptual Skills
2. Communication Skills: Communication and Leadership; The Purpose of Communication; Forms of Communication; Communication Barriers and Styles; Verbal and Nonverbal Communication; Feedback; Self Communication and Interpersonal Communication
3. Leading Individuals and Groups: Group Dynamics and Team Building; Democratic Group Leadership; Importance of Groups; Types of Groups; Organizing Groups; Group Dynamics, Development, and Discussion
4. Conducting Successful Meetings: Skills Developed by Bring an Officer; Basic Meeting Functions; Characteristics of a Good Meetings; Planning and Preparing for Meetings; The Meeting Room; Committees; Informative and Motivational Meetings; Group Member Involvement; Officer and Member Responsibilities; Developing a Program of Activities

AXED 2130. Early Field-Based Experience
2 Credits (2)
First Hand view of the roles of professional educators through field experiences with Cooperative Extension or other government agencies. Includes 4 weeks of classroom instruction and 30 hours of observation in a work setting. Consent of Instructor required. Restricted to Las Cruces campus only.

Learning Outcomes
1. Identify successful characteristics, tips and strategies that an agricultural education professional may use as part of their program.
2. Identify key components of an agricultural education program
3. Actively observe a local agricultural education program.
4. Identify ways that your agency program networks and interacts with clientele and community

AXED 2140. Early Field-Based Experience in Agricultural and Technology Education
2 Credits (2)
First-hand view of the roles of professional educators through field experiences in a secondary agricultural or technology education setting. Includes 4 weeks of classroom instruction and 30 hours of observations in a classroom setting. Consent of Instructor required.

Learning Outcomes
1. Explain student outcomes related to agricultural education
2. Examine the role of agriculture teachers to accomplish the purpose of agricultural education.
3. Explain the relationship between motivation and learning
4. Describe how teachers facilitate learning in an agriculture classroom.
5. Reproduce the three-circle model of agriculture education.
6. Provide an example of instruction in each of the three circles and instruction that happens in more than one circle.
7. Deliver instruction in a classroom or laboratory setting.
8. Deliver instruction related to FFA
9. Deliver instruction related to SAEP

AXED 2996. Special Topics
1-4 Credits
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.

Learning Outcomes
1. Varies

B A-BUSINESS ADMINISTRATION (B A)

B A 104. Introduction to Business
3 Credits (3)
Survey and integration of functions in business organizations within their social and economic environment. Community Colleges only.

B A 105. Special Topics
1-3 Credits
Current topics in business and economics.

B A 202. Small Business Enterprise
3 Credits (3)
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 Credits
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.

BCHE-BIOCHEMISTRY (BCHE)

BCHE 140. Introduction to Biochemistry
1 Credit (1)
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 Credits
Techniques and procedures of biochemical research. May be repeated for a maximum of 3 credits.
Prerequisites: 8 credits of chemistry and 3.0 GPA in chemistry.

BCIS-BUSINESS COMPUTER SYSTEMS (BCIS)

BCIS 1110. Introduction to Information Systems
3 Credits (3)
Examination of information systems and their impact on commerce, education, and personal activities. Utilization of productivity tools for communications, data analysis, information management and decision-making.
Learning Outcomes
1. Describe the social impact of information literacy and systems in relation to commerce, education, and personal activities.
2. Explain how to use the information resources legally, safely, and responsibly in relation to ethical, security, and privacy issues.
3. Evaluate bias, accuracy and relevance of information and its sources.
4. Use productivity tools for communications, data analysis, information management and decision-making.
5. Describe and use current information systems and technologies

BCT-BUILDING CONSTRUCTION TECH (BCT)

BCT 100. Building Trades I
8 Credits (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 Credits (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. May be repeated up to 2 credits. Restricted to Community Colleges campuses only.
Corequisite(s): BCT 102; BCT 103.

BCT 102. Introduction to Construction II
2 Credits (2+1P)
Introduction to power and hand tools, blueprints, and basic rigging hardware and techniques. May be repeated up to 2 credits. Restricted to Community Colleges campuses only.
Corequisite(s): BCT 101; BCT 103.

BCT 103. Introduction to Construction Laboratory
3 Credits (3)
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. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.
Corequisite(s): BCT 101; BCT 102.

BCT 104. Woodworking Skills I
3 Credits (1+4P)
Use and care of hand tools and elementary power tools, safety procedures, and supervised project construction.

BCT 105. Woodworking Skills II
3 Credits (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 Credits (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 Credits (2+4P)
Types and applications of paints and clear coatings. Use of fasteners, caulks, and sealants. Restricted to: Community Colleges only.

BCT 108. Plumbing I
3 Credits (2+3P)
Covers orientation to the trade. Students will learn about materials used in the plumbing industry and the different types of plumbing fixtures. It includes task-oriented projects in which the students apply many of the skills and knowledge that are presented through the National Center for Construction and Education Research (NCCER) Plumbing Program. May be repeated up to 3 credits.
Prerequisite(s)/Corequisite(s): BCT 101, BCT 102. Restricted to Community Colleges campuses only.

BCT 110. Blueprint Reading for Building Trades
4 Credits (2+4P)
Same as DRTF 151, OEET 101, OEPB 110.

BCT 111. Small Equipment Maintenance and Repair
4 Credits (2+4P)
Covers small engine theory, troubleshooting and repair, auto maintenance, hydraulic theory and repair lubricants, batteries and scheduled tool maintenance. Restricted to: Community Colleges only.
BCT 114. Basic Carpentry
3 Credits (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. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.
Corequisite(s): BCT 115; BCT 116.

BCT 115. Carpentry Level I
3 Credits (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. May be repeated up to 3 credits. Consent of Instructor required. Restricted to Community Colleges campuses only.
Corequisite(s): BCT 114; BCT 116.

BCT 116. Basic Carpentry Lab
2 Credits (2)
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. May be repeated up to 2 credits. Restricted to Community Colleges campuses only.
Corequisite(s): BCT 114; BCT 115.

BCT 117. Plumbing I
3 Credits (2+2P)
This course will introduce students to the plumbing profession. Students will become familiar with the tasks and responsibilities of plumbing professionals in the construction industry and gain a basic knowledge of the plumbing field. Restricted to Community Colleges campuses only.

BCT 118. Math for Building Trades
3 Credits (3)
Geometry, algebra, arithmetic, and basic trigonometry pertaining to mathematical applications in the building trades field. Same as OEET 118, DRFT 118, OEPB 118.
Prerequisite: CCDM 103 N.

BCT 123. Residential Wiring I
3 Credits (2+3P)
Introduction to residential electrical wiring trade, electrical safety practices, basic electrical circuits and theory, reading and interpreting applicable construction prints/drawings, introduction to basic National Electric Code (NEC), and preparation for entry-level employment in residential electrical wiring. Restricted to Community Colleges campuses only.

BCT 130. Professional Development and Leadership
1 Credit (1)
As members and/or officers of various student professional organizations, students gain experience in leadership, team building, and community service. Students competing or participating in Skills USA are required to register for the course. May be repeated up to 6 credits. Consent of Instructor required. Restricted to: BCT majors. Graded: S/U Grading (S/U, Audit). Restricted to: Community Colleges only.

BCT 150. Forklift Operation
1 Credit (1)
Classroom instruction and hands-on practice to prepare students to operate a forklift safely in the workplace. Students will have the opportunity to earn a forklift operator’s permit. Consent of Instructor required. Restricted to Community Colleges campuses only.

BCT 200. Building Trades II
8 Credits (2+12P)
Continuation of BCT 100: roofing; exterior and interior finish; masonry; door, window, and cabinet installation.

BCT 206. Advanced Cabinetmaking
3 Credits (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 209. Plumbing II
3 Credits (2+3P)
Continuation of BCT 109. Provides students the opportunity to gain more practice in the skills and knowledge learned in Plumbing I. Students will install fixtures and run the various plumbing supply lines from Plumbing Level I. The course included hands on projects in which the students apply many of the competencies that have been presented through the National Center for Construction and Education Research (NCCER) Plumbing Program. May be repeated up to 3 credits.
Prerequisite(s)/Corequisite(s): BCT 109.

BCT 217. Building and the Environment
3 Credits (3)
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 Colleges only.

BCT 218. Plumbing 2
4 Credits (2+4P)
This course builds on the skills and knowledge students have gained in previous BCT introduction to plumbing courses, focusing on installation of plumbing systems. Students will become familiar with the tasks and responsibilities of plumbing professionals in the construction industry and gain a basic knowledge of the plumbing field.
Prerequisite(s): BCT 117 and BCT 119.

BCT 219. Weatherization in Construction
3 Credits (2+2P)
Introduction to industry weatherization standards and practices utilized in the construction of buildings for the purpose of energy conservation. Economic and environmental impacts of the use of energy in heating and cooling building will be examined.
Prerequisite(s): BCT 101, BCT 102 and BCT 103.

BCT 221. Cooperative Experience I
1-4 Credits
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 223. Residential Wiring II  
3 Credits (2+3P)  
Introduction to electrical raceways and fittings; electrical conductors and cables; basic electrical construction drawings, residential electrical services, and electrical test equipment. Restricted to Community Colleges campuses only.  
Prerequisite(s): BCT 123.

BCT 255. Special Topics  
1-6 Credits (1-6)  
Topics to be announced in the Schedule of Classes. May be repeated up to 12 credits. Consent of Instructor required. Restricted to Community Colleges campuses only.

BCT 290. Special Problems in Building Technology  
1-4 Credits  
Individual studies in areas directly related to building technologies.  
Prerequisite: consent of instructor.

**BFIN-BUSINESS FINANCE**

BFIN 2110. Introduction to Finance  
3 Credits (3)  
Introduces tools and techniques of financial management. Includes time value of money, financial planning, diversification and risk; debt and equity investment decisions; and financial statement analysis.  
Prerequisite(s): OATS 106 or higher; OATS 120 or ACCT 2110; ECON 1110G or ECON 2110G.

**Learning Outcomes**  
1. Explain the time value of money and its application in decision-making, including calculating present and future values of single payment and series of payments.  
2. Identify the major sources of external long-term financing for corporations.  
3. Explain risk-return tradeoff as it relates to diversification.  
4. Differentiate the role of finance from other related disciplines such as accounting and economics.  
5. Demonstrate knowledge of capital markets and securities (debt and equity).  
6. Describe basic types of financial ratios and their uses.  
7. Demonstrate the ability to prepare cash flows and make qualitative judgments on the relevance of the changes from one time frame to another.

BIOL-BIOLOGY (BIOL)

BIOL 1120G. Human Biology  
3 Credits (3)  
This course is an introduction to modern biological concepts with an emphasis on the relevance to humans and their relationships with the environment.

**Learning Outcomes**  
1. Explain that biology is a scientific discipline based on observations and experiments.  
2. perimentations.  
3. Explain the process of scientific inquiry and explain how scientific knowledge is discovered and validated.  
4. Describe the chemical basis of living organisms and how biomolecules contribute to the structure and function of cells.  
5. Develop a basic familiarity with cells and cell organelles.  
6. Describe the structure and function of DNA as well as how DNA is used in the production of proteins.  
7. Describe the basic principles of genetics and heredity leading to human diversity.  
8. Identify the major features of the systems in the human body, and understand the anatomy and physiology of them.  
9. Describe the roles of the organ systems in maintaining homeostasis.  
10. Explain the principles of evolution by means of natural selection explaining the diversity of life.  
11. Describe how science and technology have impacted life in particular to society and the environment (e.g. medicine, forensic science, agriculture, ecology, sustainability).

BIOL 1120L. Human Biology Laboratory  
1 Credit (3P)  
This course introduces exercises, experiences, and activities exploring biological concepts and theories relevant to humans and their relationship to the environment in a laboratory setting.  
Prerequisite(s)/Corequisite(s): BIOL 1120G.

**Learning Outcomes**  
1. Understand general principles of cell structure and function.  
2. Understand general principles of genetics.  
3. Understand basic human anatomy and physiology.  
4. Communicate scientific information effectively.  
5. Demonstrate an understanding of the scientific method.  
6. Knowledge of appropriate laboratory skills.  
7. Apply quantitative reasoning and scientific thinking to real world problems.
BIOL 1190G. Contemporary Problems in Biology
4 Credits (3+3P)
Fundamental concepts of biology will be presented using examples from relevant problems in ecology, medicine and genetics. For nonscience majors only. Community Colleges only.

Learning Outcomes
1. Identify the unity and diversity of living things
2. Identify the structure and function of cells an biological molecules
3. Recognize and demonstrate patterns of inheritance
4. Describe mechanisms of evolution
5. Describe the human body systems including immune response
6. Discuss population dynamics and ecological systems
7. Describe the process of scientific inquiry, solve problems scientifically, and communicate on a scientific level
8. Apply quantitative analysis and scientific thinking to scientific and real world problems
BIOL 2110L. Principles of Biology: Cellular and Molecular Biology Laboratory  
1 Credit (3P)  
This course introduces students to major topics in general biology. This courses focuses on the principles of structure and function of living things at the molecular, cellular and organismic levels of organization. Major topics included are introduction to the scientific process, chemistry of cells, organization of cells, cellular respiration, photosynthesis, cell division, genetics, DNA replication, transcription, and translation. May be repeated up to 1 credits.  
Prerequisite/Corequisite(s): BIOL 2110G, prerequisite(s): MATH 1215 or higher, and a C- or better in CHEM 1120G or CHEM 1215G or CHEM 1216.  
Learning Outcomes  
1. Describe and apply the scientific method to generate testable hypotheses in evolution and ecology.  
2. Design and conduct laboratory experiments using relevant laboratory equipment and methods.  
3. Analyze and report data generated during laboratory activities and experiments.  
4. Communicate scientific results from experiments in Mendelian genetics, evolution, ecology, and biodiversity.

BIOL 2210. Human Anatomy and Physiology I for the Health Sciences  
4 Credits (3+3P)  
This course is the first of two that serve as an introduction to human anatomy and physiology for biology majors and allied health students. The course entails describing, explaining, and analyzing structure and function from the submicroscopic to the organismal level with emphasis on anatomic, directional, and sectional terminology, basic cellular structure and metabolism, tissue differentiation and characteristics, and organ system structure and function, specifically the integumentary, skeletal, muscular, and nervous systems.  
Prerequisite(s)/Corequisite(s): CHEM 1120G or CHEM 1215G. Restricted to: Community Colleges only.  
Learning Outcomes  
1. Describe and apply anatomical terminology.  
2. Describe multi cellular organization.  
3. Distinguish and describe major tissue types.  
4. Describe the structure and function of the integumentary system.  
5. Describe the structure and function of the skeletal system.  
6. Describe the structure and function of the muscular system.  
7. Describe the structure and function of the nervous system.  
8. Describe the structure and function of the special senses.  
9. Define homeostasis and describe specific examples for the integumentary, skeletal, muscular, and nervous systems.

BIOL 2221. Human Physiology  
3 Credits (3)  
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.  
Prerequisite(s): Grade of at least C- in BIOL 2110G; BIOL 2110L; CHEM 1215G or CHEM 1120G.  
Learning Outcomes  
1. Understand the central physiological principle of homeostasis  
2. Be able to explain why concentration gradients are essential to maintain homeostasis  
3. Understand the regulation of homeostasis by neuronal / endocrine chemical messengers  
4. Understand that changes in bodily function occur throughout the entire life span of the human animal  
5. Incorporate the importance of evolutionary biology to your understanding of human disease  
6. Teach a physiological concept to your classmates  
7. Design experiments to test physiological concepts  
8. Put in plain words how the laws of thermodynamics can explain human disease.

BIOL 2225. Human Anatomy and Physiology II  
4 Credits (3+3P)  
This course is the second of two that serve as an introduction to human anatomy and physiology for biology majors and allied health students. The course entails describing, explaining, and analyzing structure and function from the submicroscopic to the organismal level with emphasis on specific cellular, tissue, and organ structure and physiology, and organ system structure and function, specifically the endocrine, cardiovascular, respiratory, urinary, and reproductive systems. Additionally, an analysis of these concepts is included: fluid and electrolyte balance, pregnancy, growth and development from zygote to newborn, and heredity. Restricted to: Community Colleges only.  
Prerequisite(s): BIOL 2210, CHEM 1120G or CHEM 1215G.  
Learning Outcomes  
1. Identify and describe the major anatomical features of the endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems.  
2. Analyze the physiological roles of the endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems in maintaining homeostasis in the human body.  
3. Explain how fluid and electrolyte balance is maintained in the human body.  
4. Compare and contrast the anatomy and physiology of male and female reproductive systems.  
5. Describe pregnancy from conception to parturition including human growth and development from zygote to newborn.  
6. Explain heredity and genetic control.
BIOL 2310. Microbiology
3 Credits (3P)
Introduction to the basic principles of microbiology, microbial pathogenesis, host defenses and infectious diseases. The course will emphasize concepts related to the structure and function of microorganisms, including their mechanisms of metabolism and growth. Host parasite interactions will also be emphasized, including mechanisms of microbial pathogenesis and mechanisms of host defenses against infectious diseases. Restricted to Community Colleges campuses only.
Prerequisite(s): CHEM 1120G or CHEM 1215G or CHEM 1225G. Corequisite(s): BIOL 2310L.
Learning Outcomes
1. Describe and compare the structure and function of prokaryotic and eukaryotic cells.
2. Describe and compare the techniques used for staining of and microscopic observation of bacteria including morphology.
3. Describe the nutritional requirements for bacterial growth and the impact of environmental factors on bacterial growth (temperature, pH, oxygen, etc.).
4. Describe and compare the mechanisms of aerobic respiration, anaerobic respiration, and fermentative metabolism.
5. Describe the mechanism of bacterial growth by binary fission, and laboratory methods used for observing and measuring bacterial growth.
6. Describe the mechanisms of bacterial DNA replication, RNA transcription, and translation, and compare and contrast with eukaryotic cells.
7. Describe the structure and replication strategies of viruses.
8. Describe and contrast mechanisms of innate nonspecific immunity and adaptive specific immunity.
10. Differentiate between host microbe relationships, mechanisms of microbial pathogenesis, differentiate between communicable and noncommunicable diseases and describe mechanisms of direct and indirect transmission of communicable diseases.

BIOL 2310L. Microbiology Lab
1 Credit (3P)
This course will emphasize both the theory and hands-on application of techniques used in a microbiology laboratory for the growth and identification of bacterial species. Students will learn microscopy skills and staining techniques for the observation of bacteria. Students will also learn aseptic techniques used for isolation of bacteria, inoculation of cultures, and interpretation of selective and differential growth media for the identification of bacterial species.
Prerequisite: BIOL 2310 or BIOL 2320 or concurrent enrollment.
Learning Outcomes
1. Demonstrate skills of microscopy.
2. Demonstrate skills of bacterial staining.
3. Demonstrate aseptic technique for inoculation of bacterial growth media.
4. Interpret results from selective and differential media.
5. Demonstrate appropriate use of diagnostic reagents.
6. Interpret results of diagnostic assays.
7. Identify unknown bacterial species through the use of a dichotomous key, inoculation and interpretation of laboratory assays, and application of the scientific method.

BIOL 2320. Public Health Microbiology
3 Credits (3)
This course introduces microbiology on the health profession level. It incorporates cell structure, metabolism, growth, controls of growth, infectious epidemiology, etiology, pathogenicity, and relative virulence of pathogens. It will lead to students assessing a clinical infection scenario from the microbiological perspective that includes making diagnoses based on data from appropriate diagnostic tests, investigating appropriate treatment options, and making recommendations for prevention.
Prerequisite: BIOL 2110G and BIOL 2110L.
Learning Outcomes
1. Identify key physical features of various infectious agents and describe their structure and function in the pathogen
2. Describe the microbiological, serological, biochemical and genetic tests that are used to identify infectious agents in a laboratory setting and be able to interpret test results in order to identify the pathogen
3. Explain how structural and metabolic differences between infectious agents and human host can be exploited for chemotherapy
4. Explain the observed effect of a particular environmental change on the growth of a given microorganism, and the relationship between bacterial growth patterns and selected foodborne illnesses
5. Describe several mechanisms by which pathogens generate genetic diversity and the role genetic diversity plays in resistance to therapy and treatment failure
6. Explain the role of innate, and adaptive immunity in host defense
7. Describe general virulence strategies used by variety of pathogens, and different types of vaccines along with recommendations for vaccinations of specific populations
8. Demonstrate understanding of signs and symptoms of selected diseases, and be able to relate disease agents with environmental reservoirs and transmission
BIOL 2505. Pathophysiology
3 Credits (3)
This course is designed to provide the conscientious student with a solid foundation for understanding the pathophysiological processes of the human organism. Successful completion of this course will promote the general student learning outcomes listed below. Corequisite/Prerequisites(s): AHS 154 or BIOL 2225. Restricted to: Community Colleges only.
Prerequisite(s): AHS 153 or BIOL 2210.
Learning Outcomes
1. To describe the general concepts of disease processes and factors associated with disease causation.
2. To identify the function of basic cellular structures, determining the process of cellular malfunctions.
3. To describe the response of the body to injury and immunologic challenge.
4. To discuss the etiology, pathogenesis, and treatment modalities of frequently occurring diseases.

BIOL 2511. Human Pathophysiology
3 Credits (3)
The first in a two-course sequence that covers changes in body physiology that result from disease or injury. Includes a general introduction to pathophysiology as well as an overview of altered cellular and tissue biology, injury, inflammation, and neoplasia. Students will also explore deviation from fluid, hemodynamic, and endocrinologic balance. Topics related to the science of pathophysiology, including pathology, pathogenesis, etiology, epidemiology, and clinical manifestations, are also discussed throughout the course where relevant. Grade of C- or higher in microbiology is recommended. Restricted to Community Colleges campuses only.
Prerequisite(s): Grade of C- or higher in BIOL 2210 and BIOL 2225.
Learning Outcomes
1. The cellular adaptations occurring in atrophy, hypertrophy, hyperplasia, dysplasia, and metaplasia; the types and causes of cellular injury; and the types of necrosis.
2. The different compartments for body fluids; the factors that affect water movement; the processes that drive and affect capillary exchange; the mechanisms causing edema; the electrolytes in body compartments; the various electrolyte imbalances; the body mechanisms that maintain acid-base balance; and the various acid-base imbalances and how they are compensated for.
3. The interrelationships of DNA, RNA, and proteins; the various types of mutations; the various types of mutagens, the various types of numerical and structural chromosomal aberrations; the various genetic terms; the single-gene disorders discussed in class; the multifactorial disorders discussed in class.
4. The relationships between genes, environment, and multifactorial diseases; the criteria used to define multifactorial disease; the characteristics of multifactorial traits; and the various features of the threshold model.
5. The terms related to tumor/cancer biology, classification, and nomenclature; the various features of cancer biology, including the characteristics of cancer and the genetic basis of cancer; features related to cancer invasion and metastasis; and the clinical manifestations and treatments of cancer.
6. Features related to Innate and adaptive immunity; features related to the first, second, and third lines of defense; the mechanisms and manifestations of inflammation; components/mechanisms related to the complement, clotting, and kinin systems; mechanisms of wound healing; and features of dysfunctional wound healing.
7. Aspects/mechanisms of specific (adaptive) immunity, features related to the structure, function, and classification of immunoglobulins; features related to haptons, antigens, immunogens, and epitopes; the different types of antigens; features related to immunological memory; and features related to the different types of active and passive immunity.
8. Aspects related to allergy, autoimmunity, and alloimmunity; aspects/mechanisms/examples related to the four basic types of hypersensitivity reactions; mechanisms and examples related to autoimmunity; and aspects/mechanisms related to immunodeficiency.
9. The risk factors for infection; the six components of the chain of infection; general concepts, terms, and processes/mechanisms related to basic microbiology; and the mechanisms of microbial pathogenicity.
10. General concepts, terms, and processes/mechanisms related to normal hormonal action; mechanisms of hormonal alterations; processes/mechanisms related to the pathophysiology of the various disorders discussed in class; and the clinical manifestations and treatment of the hormonal alterations discussed in class.
BIOL 2512. Human Pathophysiology I
3 Credits (3)
The second in a two-course sequence that covers changes in body physiology that result from disease or injury. This course focuses on the pathophysiology of the nervous, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems. Topics related to the science of pathophysiology, including pathology, pathogenesis, etiology, epidemiology, and clinical manifestations, are also discussed throughout the course where relevant. Grade of C- or higher in microbiology is recommended. Restricted to Community Colleges campuses only.
Prerequisite(s): Grade of C- or higher in BIOL 2210, BIOL 2225, and BIOL 2511.

Learning Outcomes
1. The different types of sensory modalities; the different dysfunctions of the general and special senses; the different pain theories discussed in class; the various aspects of the neuroanatomy and neuromodulation of pain; the various clinical descriptions of pain; the various aspects of temperature regulation; components of the pathogenesis of fever; the various disorders of temperature regulation; the various aspects of sleep disorders; the various components of visual dysfunction; and the various aspects of auditory, gustatory, and olfactory dysfunction.
2. The various alterations in cognitive systems; the various alterations in arousal; the outcomes of alterations in arousal; the various alterations in awareness; the various seizure disorders; the various data processing deficits; various alterations in cerebral hemodynamics; and alterations in neuromotor function.
3. The various disorders of the central and peripheral nervous systems; and the various disorders of the neuromuscular junction.
4. The components of normal blood; the process/stages of hematopoiesis; the various normal RBC laboratory values; the components and functions of the lymphatic system; the various types of imbalances of erythropoiesis; the various types of anemias and their causes; the various types of polycythemia and their causes; the processes related to hemostasis; the various alterations of white blood cells and their causes; and the various alterations of lymphoid and hemostatic function.
5. The various diseases of the veins; the various diseases of the arteries; the various aspects of atherosclerosis; features related to the pathogenesis and consequences of coronary artery disease; the disorders of the heart wall and their consequences; the various aspects of valvular dysfunction; aspects of the pathogenesis and manifestations of rheumatic disease; the causes, pathogenesis, and manifestations of infective endocarditis; the causes, manifestations, and pathophysiology of heart failure; and the various types of shock.
6. The various signs and symptoms of pulmonary disease; the various conditions caused by pulmonary disease/injury; the various disorders of the chest wall and pleura; and the causes, manifestations, and pathophysiology of selected pulmonary disorders.
7. The features and consequences of upper and lower urinary tract obstruction; the various types of urinary tract infection; the causes, pathogenesis, and clinical manifestations of glomerulonephritis; the various features of nephrotic and nephritic syndrome; and the various features (etiology, pathophysiology, and clinical manifestations) of both acute kidney injury and chronic kidney disease.
8. The various clinical manifestations of gastrointestinal dysfunction; the various aspects (etiology, pathophysiology, and clinical manifestations) of disorders of motility; the causes, manifestations, and pathophysiology of gastritis; features related to the causes, manifestations, and pathophysiology of peptic ulcer disease; features related to the etiology, pathogenesis and pathophysiology of selected malabsorption syndromes, inflammatory bowel diseases, diverticular disease of the colon, appendicitis, and irritable bowel syndrome; the various types of vascular insufficiency; the various disorders of the colon; the various forms of diverticulitis; the various aspects of obesity; the various etiologies of diabetes mellitus; the various aspects of endocrinology; and the various manifestations of malnutrition.

BIOL 2610G. Principles of Biology: Biodiversity, Ecology, and Evolution
3 Credits (3)
This course is an introduction to the dynamic processes of living things. Major topics include the mechanisms of evolution, biological diversity, Mendelian genetics, and ecology.
Prerequisite/Corequisite: grade of C- or better in MATH 1215 or higher, or a Math Placement Exam score adequate to enroll in mathematics courses beyond MATH 1215.

Learning Outcomes
1. Understand the scientific method and apply it to biological topics of genetics, evolution, ecology, and biodiversity. Apply quantitative reasoning and scientific thinking to real world problems. Identify and describe the basic principles of evolution. Analyze the relationships between the genetics of populations and evolution. Analyze the processes of speciation. Describe how the hierarchical classification scheme is used to categorize organisms. Describe how DNA research has modernized bio systematics. Compare and contrast the general characteristics of each of the living domains and kingdoms. Relate the structure of organisms to the way they function. Explain how the life histories of organisms are adapted for different environments. Relate the complexity of behavior to the overall complexity of an organism. Describe the ecological roles played by organisms in each kingdom. Compare basic ecological principles at the population and community levels of organization. Describe and compare energy relationships and the cycling of materials in ecosystems. Identify and describe the basic principles of Mendelian genetics.

BIOL 2610L. Principles of Biology: Biodiversity, Ecology, and Evolution Laboratory
1 Credit (3P)
This laboratory course is an introduction to the dynamic processes of living things. This course introduces students to the methods used in the study of Mendelian genetics, evolution, ecology, and biological diversity. Designed for students continuing in life sciences.
Prerequisite/Corequisite: BIOL 2610G; grade of C- or better in MATH 1215 or higher, or a Math Placement Exam score adequate to enroll in mathematics courses beyond MATH 1215.

Learning Outcomes
1. Describe and apply the scientific method to generate testable hypotheses in evolution and ecology. Design and construct laboratory experiments using relevant laboratory equipment and methods. Analyze and report data generated during laboratory activities and experiments. Communicate scientific results from experiments in Mendelian genetics, evolution, ecology, and biodiversity.

BIOL 2996. Special Topics
1-3 Credits
Specific subjects to be announced in the Schedule of Classes. May be repeated for a maximum of 6 credits. Community Colleges only.

Learning Outcomes
1. Varies
BLAW-BUSINESS LAW (BLAW)

BLAW 2110. Business Law I
3 Credits (3)
Survey of the legal environment of business and common legal principles including: the sources of law, dispute resolution and the U.S. court systems, administrative law, tort law, contract law, agency and employment law, business structure and governance, ethics and corporate social responsibility. Explores sources of liability and presents strategies to minimize legal risk. Offered at all NMSU Community Colleges except Dona Ana Community College. Credit may not be earned in both BLAW 2110 and BLAW 317.

Learning Outcomes
1. Describe the sources of law.
2. Describe and explain dispute resolution and the court systems in the United States.
3. Describe the concepts of negligence, intentional torts and strict liability.
4. Describe and apply the essential aspects of contracts from creation, performance, breach and remedies, including basic contract law from Article 2 of the Uniform Commercial Code.
5. Explain the concept of ethics.

BLED-BILINGUAL EDUCATION

BLED 1110. Introduction to Bilingual Education/ESL
3 Credits
An overview of the American Education system with emphasis on organization, governance, law, demographics, and professional practice. Will include supervised experience in bilingual education/ESL elementary settings for prospective bilingual education/ESL teachers.

Learning Outcomes
1. Complete 24 hours field observations in a classroom.
2. Articulate the attributes of an education professional entering the field.
3. Construct an individualized map to teacher licensure in the State of New Mexico.
4. Differentiate and summarize the major educational philosophies and historical events that have influenced the progression of educational practice.

BMGT-BUSINESS MANAGEMENT (BMGT)

BMGT 112. Banks and Your Money
3 Credits (3)
Banking in today’s economy: language and documents of banking, check processing, teller functions, deposit function, trust services, bank bookkeeping, loans, and investments. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.

BMGT 126. Retail Management
3 Credits (3)
Phases of retailing, including types of retail outlets and basic problems of organizing and operating a retail store. Restricted to: Community Colleges only.

BMGT 132. Principles of Selling
3 Credits (3)
Analysis of customer behavior, persuasive communication, process of the sales interview. Restricted to: Community Colleges only.

BMGT 136. Forecasting Business Activity
3 Credits (3)
Course covers the important elements of forecasting all types of business activities including inventory control, revenue forecasts, staffing, and other industry specific activities using metrics and data analysis processes. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.

Prerequisite(s): BUSA 1110.
Learning Outcomes
1. Identify the unique challenges of starting a small business.
2. Identify opportunities to start up a business and conduct a needs analysis.
3. Develop value proposition/market fit for proposed products and services.
4. Develop an appropriate business model.
5. Identify the availability of necessary resources.

Learning Outcomes
1. Identify the strengths and weaknesses of small businesses
2. Define entrepreneurship and identifying its traits
3. Demonstrate a capability to explore and research business opportunities
4. Explain how to plan to start a new business, identifying legal structures, financing options, and organizing a management team
5. Identify and analyze financial statements
6. Review the importance of management information systems
7. Identify their own managerial leadership style
8. Review purchasing and inventories, taxation and insurance
9. Describe the process of writing a business plan
BMGT 240. Human Relations
3 Credits (3)
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. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.

BMGT 247. Customer Relationship Management
3 Credits (3)
The course addresses the application of positive customer relationship practices and demonstrates the connection between managing excellent customer experiences and business success. Customer related decision making processes through the use of data based decision matrices are introduced. Restricted to Community Colleges campuses

Learning Outcomes
1. Recognize and explain the concept of customer service.
2. Describe the basic factors in Customer Relationship Management (CRM).
3. Explain how technological tools can support CRM processes.
4. Discuss the impact of CRM on the marketing processes.
5. Describe how effectively using CRM techniques impacts customer satisfaction.
6. Demonstrate the use of data to make effective CRM decisions.

BMGT 250. Diversity in the Workplace
3 Credits (3)
Concepts of culture, diversity, prejudice, and discrimination within the domestic workforce/society. Restricted to Community Colleges campuses only.
Prerequisite(s): BUSA 1110.

BMGT 272. E-Commerce Operations
3 Credits (3)
Includes the many forms of e-commerce and emerging technologies that will impact the business of tomorrow. Restricted to Community Colleges campuses only.
Prerequisite(s): OECS 105 or BCIS 1110.

BMGT 277. Entrepreneurship II - Small Business Management
3 Credits (3)
This course is designed to acquaint the student with the opportunities encountered in the management and operations of a small business enterprise. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): ENTR 1110.

BMGT 280. Introduction to Human Resources
3 Credits (3)
Personnel functions encompassing job analysis, recruitment, selection, training, appraisals, discipline, and terminations. Prerequisite(S): BUSA 1110 or B A 104. Restricted to Community Colleges campuses only.

BMGT 282. Introduction to International Business Management
3 Credits (3)
Overview of the social, economic and cultural environment of international business transactions. Restricted to Community Colleges only.
Prerequisite(s): BUSA 1110.

BMGT 285. Introduction to Manufacturing Operations
3 Credits (3)
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. Restricted to Community Colleges campuses only.
Prerequisite(s): BUSA 1110 and (BMGT 140 or MGMT 2110).

BMGT 286. Introduction to Logistics
3 Credits (3)
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 Colleges only.

BMGT 287. Introduction to Export/Import
3 Credits (3)
Procedures and documentation for exporting and importing products. Emphasis on NAFTA regulations and other U.S. border operations crossings. Restricted to Community Colleges only.
Prerequisite(s): BUSA 1110.

BMGT 290. Applied Business Capstone
3 Credits (3)
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. Restricted to: BMGT majors. Restricted to Community Colleges campuses only.
Prerequisite: BUSA 1110, and (BMGT 140 or MGMT 2110), and (BMGT 240 or SOCI 1110G or PSYC 1110G), and MKTG 2110.

Learning Outcomes
1. Plan, design, and create a real world project related to their field of study. Participate in job shadowing in positions related to their field of study. Create a portfolio in preparation for career applications. Collaborate as a member of a team in their field of study. Identify and use ethical decision-making in working on individual projects, job shadowing, and a team.

BMGT 298. Independent Study
3 Credits (3)
Individual studies directed by consenting faculty with prior approval of department chair. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.
Prerequisite: Sophomore standing with 3.0 GPA.

BOT-BUSINESS OFFICE TECHNOLOGY (BOT)

BOT 298. Independent Study
1-3 Credits
Individual studies directed by consenting faculty with prior approval of department head. May be repeated for a maximum of 3 credits.
Prerequisite: sophomore standing with 3.0 GPA.
BUSINESS ADMINISTRATION (BUSA)

BUS 110. Intro to Business  
3 Credits (3)  
Fundamental concepts and terminology of business including areas such as management, marketing, accounting, economics, personnel, and finance; and the global environment in which they operate.

Learning Outcomes
1. Explain how business and entrepreneurship affect the quality of life and the world around us.
2. Explain the characteristics of the different forms of business ownership.
3. Perform basic stakeholder analysis concerning accountability, ethics and social responsibility of business.
4. Demonstrate knowledge of the various dimensions of the business environment including political and legal, socio-cultural, environmental, diversity, economic, technological, and global.
5. Describe the purpose and functions of finance, operations, marketing, management, accounting, and information systems.
6. Describe basic skills such as use of common business terminology, information search skills, presentation and writing skills, and team skills.

CIVIL ENGINEERING (C E)

C E 109. Computer Drafting Fundamentals  
3 Credits (2+2P)  
Same as DRFT 109, E T 109, SUR 109.

C E 151. Introduction to Civil Engineering  
3 Credits (3)  
Problem solving and use of computer software for civil engineering applications. May be repeated up to 3 credits.

Prerequisite(s): MATH 1220G.

C E 198. Special Topics  
1-3 Credits  
May be repeated for a maximum of 6 credits.

Prerequisite: consent of department head.

C E 233. Mechanics-Statics  
3 Credits (3)  
Engineering mechanics using vector methods. May be repeated up to 3 credits.

Prerequisite(s): MATH 1521G or MATH 1521H, PHYS 1310G and cumulative GPA of 2.0.

C E 234. Mechanics-Dynamics  
3 Credits (3)  
Kinematics and dynamic behavior of solid bodies utilizing vector methods. May be repeated up to 3 credits. Crosslisted with: M E 234.

Prerequisite(s): C E 233, MATH 1521G or MATH 1521H, PHYS 1310G.

C E 256. Environmental Engineering and Science  
3 Credits (3)  
Principles in environmental engineering and science: physical chemical systems and biological processes as applied to pollution control. Crosslisted with: ENVS 2111

Prerequisite: CHEM 1215G and MATH 1511G or ENGR 190.

Learning Outcomes
1. To understand the nature of water quality parameters in the context of Civil Engineering and Environmental Science (Water Treatment/Wastewater Treatment/Environmental Science) To learn to apply engineering and scientific solutions to water quality problems To understand environmental regulations and their consequences on the design of pollution control systems

C E 256 L. Environmental Science Laboratory  
1 Credit (1P)  
Laboratory experiments associated with the material presented in C E 256. Same as ENVS 2111L.

Corequisite(s): C E 256.

C E 298. Special Topics  
1-3 Credits  
May be repeated for a maximum of 6 credits.

Prerequisite: consent of department head.

COMPUTER SCIENCE (C S)

C S 111. Computer Science Principles  
4 Credits (3+2P)  
This course provides a broad and exciting introduction to the field of computer science and the impact that computation has today on every aspect of life. It focuses on exploring computing as a creative activity and investigates the key foundations of computing: abstraction, data, algorithms, and programming. It looks into how connectivity and the Internet have revolutionized computing and demonstrates the global impact that computing has achieved, and it reveals how a new student in computer science might become part of the computing future.

Prerequisite(s): MATH 1215 or higher.

C S 117. Introduction to Computer Animation  
3 Credits (3)  
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 151. C++ Programming  
3 Credits (2+2P)  
Introduction to object-oriented programming in the C++ language. The focus will be on preparing students to use C++ in their own areas. No prior programming experience is required. Taught with C S 451.

Prerequisite: MATH 1215 or higher.

Learning Outcomes
1. Use various data types and the corresponding operations. Write C++ programs that contain expressions, program control, functions, arrays, and input/output. Explain basic object-oriented programming concepts. Demonstrate proficiency in using classes, inheritance, pointers, streams, and recursion.
C S 152. Java Programming
3 Credits (2+2P)
Programming in the Java language. May be repeated up to 3 credits.
Prerequisite(s): MATH 1215 or higher.

C S 153. Python Programming I
3 Credits (3)
This course is an introduction to programming in the Python language, covering fundamental scripts, data types and variables, functions, and simple object creation and usage. The focus will be on preparing students to use Python in their own areas. No prior programming experience is required. Taught with C S 453.
Prerequisite: MATH 1215 or higher.
Learning Outcomes
1. Develop an algorithm to solve a problem. Demonstrate the ability to use Python data types: int, float, strings, and lists; and the built-in functions associated with those data types. Edit and debug programs using the Spyder IDE for Python. Implement algorithms using the Python features of assignment, input, output, branches, loops, and functions. Explain the fundamental concepts of object-oriented programming with Python Design and implement Python classes based on given attributes and behaviors. Work with existing Python modules such as math, random, and os. Write Python programs that input data from files and store results in files.

C S 154. Python Programming II
3 Credits (3)
This course covers advanced Python programming, including classes, objects, and inheritance, embedded programming in domain applications, database interaction, and advanced data and text processing. The focus will be on preparing students to use Python in their own areas.
Prerequisite(s): C S 153 or C S 453.

C S 157. Topics in Software Programming and Applications
3 Credits (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 158. R Programming I
3 Credits (3)
This course is an introduction to data processing in the R language, covering fundamental script configuration, data types and data collections, R control structures, and basic creation of graphs and data visualizations. This course will not focus on the statistical capabilities of R, though some basic statistical computations will be used.
Prerequisite(s): C S 153 or C S 453.

C S 271. Object Oriented Programming
4 Credits (3+2P)
Prerequisite: At least a C- in C S 172 or E E 112.
Learning Outcomes
1. Develop an algorithm to solve a problem. Implement algorithms using the C and C++ languages including imperative and object-oriented language features. Beyond what was learned in C S 172, E E 112, or E E 161 demonstrate a noticeable increase in understanding of problem analysis and program design. Demonstrate proficiency in using control structures including if statements (single selection), switch (multiple selection), and loops (repetition). Demonstrate proficiency in using arrays and functions. Create UML class and relationship diagrams. Design a class to model a real-world person, place, thing, or event. Use editing and debugging software to create, debug, and test C and C++ programs. Understand the basic terminology used in object-oriented programming. 1 Create a make file to build an executable from a set of C or C++ source files.

C S 272. Introduction to Data Structures
4 Credits (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. Taught with C S 463.
Prerequisite: At least a C- in C S 172, or placement.
Learning Outcomes
1. Be able to implement and use lists. Be able to implement and use stacks. Be able to implement and use queues. Be able to implement and use trees. Be able to perform the run time analysis of basic algorithms using Big O notation. Be able to implement, use, and analyze searching algorithms. Be able to solve a problem recursively. Take a problem statement from a user and convert it into a Java program that fulfills the user's needs. Create object oriented Java classes that effectively separate and hide implementation details from client applications.
C S 273. Machine Programming and Organization
4 Credits (3+2P)
Computer structure, instruction execution, addressing techniques; programming in machine and assembly languages. Taught with C S 464.
Prerequisite: At least a C- in C S 172 or E E 112.
Learning Outcomes
1. Describe the architecture of a microcontroller, the interconnections between the components, and the basic units inside the CPU Use signed and unsigned numbers, the associated branching instructions, and the corresponding flags in the status register Explain immediate, direct, indirect addressing modes, their opcode and operands, and their utilities Map high-level programming language features to assembly instructions, including loops, conditionals, procedure calls, value and reference parameter passing, return values, and recursion Interface with I/O devices including LED and sensors via digital input and output, and analog-to-digital conversion Program timers/ counters and interrupts to control real-time applications Design an assembly program

C S 278. Discrete Mathematics for Computer Science
4 Credits (3+2P)
Discrete mathematics required for Computer Science, including the basics of logic, number theory, methods of proof, sequences, mathematical induction, set theory, counting, and functions. Taught with C S 465.
Prerequisite: At least C- in C S 172.
Learning Outcomes
1. Use logic to specify precise meaning of statements, demonstrate the equivalence of statements, and test the validity of arguments Construct and recognize valid proofs using different techniques including the principle of mathematical induction Use summations, formulas for the sum of arithmetic and geometric sequences Explain and apply the concepts of sets and functions Apply counting principles to determine the number of various combinatorial configurations

CCDE-DEVELOPMENTAL ENGLISH (CCDE)

CCDE 105 N. Effective Communication Skills
4 Credits (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 Credits (3+2P)
Instruction and practice in preparation for college-level writing. Students will develop and write short essays. Provides laboratory. May be repeated up to 4 credits. Traditional Grading with RR. Restricted to Community Colleges campuses only.

CCDM-DEVELOPMENTAL MATHEMATICS (CCDM)

CCDM 100 N. Mathematics Preparation for College Success
1-4 Credits
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 Credits (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 Credits (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. Restricted to: Community Colleges only.

CCDM 107 N. Pre-Algebra Fast-Track
1 Credit (1)
Prerequisite(s): Math Placement Exam.

CCDM 108 N. Beginning Algebra Fast-Track
1 Credit (1)
An intensive review of fundamental algebra topics including algebraic expressions, solving linear and quadratic equations, factoring, radicals, exponents. Students must meet eligibility requirements (math placement exam or completion of CCDM 107N). Graded: S/U Grading (S/U, Audit). Restricted to Community Colleges campuses only.
Prerequisite(s): Math Placement Exam; or passing score in CCDM 105 N or CCDM 103 N, or CCDM 107 N.

CCDM 112 N. Developmental Algebra I
4 Credits (3+2P)
Fundamental algebra operations, algebraic expressions, solving linear equations, systems of equations and applications of linear equations. Introduction to exponents and polynomials. Provides laboratory instruction. Completion of CCDM 112N and CCDM 113N is equivalent to completion of CCDM 114N. Graded: Traditional with RR. Traditional Grading with RR. Restricted to Community Colleges campuses only.
Prerequisite(s): Grade of C or better in CCDM 103N or CCDM 105N or adequate placement score.

CCDM 113 N. Developmental Algebra II
4 Credits (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. Restricted to: Community Colleges only.
Prerequisite(s): Grade of C or better in CCDM 112N or consent of instructor.

CCDM 114 N. Algebra Skills
4 Credits (3+2P)
Fundamental algebra operations: algebraic expressions, solving linear and quadratic equations, factoring, radicals, exponents. Provides laboratory and individualized instruction. Completion of CCDM 114N meets basic skills requirement. Graded: Traditional with RR. Traditional Grading with RR. Restricted to Community Colleges campuses only.
Prerequisite(s): C or better in CCDM 103N or CCDM 105N or adequate placement score.
CCDR-DEVELOPMENTAL READING (CCDR)

CCDR 103 N. Comprehensive Reading Development
4 Credits (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. May be repeated up to 4 credits. Traditional Grading with RR. Restricted to Community Colleges campuses only.
Prerequisite(s): Appropriate placement score.

CCDR 105 N. Fundamentals of Academic Reading
3 Credits (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. May be repeated up to 3 credits. Traditional Grading with RR. Restricted to Community Colleges campuses only.
Prerequisite(s): Appropriate placement score.

CCDR 110 N. Effective College Reading
3 Credits (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. May be repeated up to 3 credits. Traditional Grading with RR. Restricted to Community Colleges campuses only.
Prerequisite(s): Appropriate placement score.

CCDS-DEVELOPMENTAL SKILLS (CCDS)

CCDS 109 N. Study Skills for Reading
1-3 Credits
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 Credits
Individualized study skill strategies necessary for success in the math classroom. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.

CCDS 113 N. Study Skills for English
1-3 Credits
Individualized study skill strategies necessary for success in the composition classroom. May be repeated for a maximum of 3 credits.

CCDS 119 N. College Reading and Writing
4 Credits (4)
Instruction and practice in preparation for college-level reading and writing. Students will develop and write essays, work on the writing process, and learn to read and analyze college-level texts. Traditional Grading with RR.
Prerequisite(s): Appropriate placement test score.

Learning Outcomes
1. Practice the reading and writing process through activities such as pre-reading/writing, annotating, drafting, summarizing, peer reviewing, discussing, revising, proofreading, journaling, researching, and citing.
2. Infer and interpret meanings in various texts through activities such as summarizing, annotating, journaling, reflecting, and textual analysis.

CEPY-COUNSELING & EDUCATIONAL PSYCHOLOGY

CEPY 1120G. Human Growth and Behavior
3 Credits (3)
Introduction to the principles of human growth and development throughout the life span.
Learning Outcomes
1. Students will demonstrate an understanding of the scientific study of processes of change and stability throughout the human lifespan (i.e. Human Development).
2. Students will demonstrate a familiarity with the generally recognized stages of human development from conception to death.
3. Students will be able to demonstrate understanding of the normal and exceptional patterns of human development.
4. Students will be able to demonstrate understanding of recent research development regarding the identified stages of human development as they relate to gender and multicultural issues.

CEPY 1150. Career Excellence
1 Credit (1)
Professional career curriculum to assist students in developing an understanding and ability to articulate who they are as emerging professionals through personal assessment activities. The focus will be on providing students with tools and strategies for reflection, planning, and goal-setting. Course does not count toward CEP minor. Spring only course offering. Restricted to: College of Education Majors only majors. Restricted to Las Cruces campus only.

Learning Outcomes
1. Demonstrate an understanding of the relationship between academic and professional career success. Express a familiarity with professionalism and career culture and communicate a comprehension of various professional career skills. Apply material learned to other aspects to professional excellence. Develop a career life plan that will highlight goals, taking into account life circumstances. Become competent in appropriate professional communication.
CEPY 1160. Academic Excellence  
1 Credit (1)  
The course is designed to provide you students with a foundation in their personal academic process. The course will assist students in developing an understanding and ability to articulate who they are as beginning college students through personal assessment activities. The focus will be on providing students with tools and strategies for reflection, planning, and goal-setting. Topics discussed will include time management, study skills, test taking skills, stress management, motivational and academic discipline skills, interpersonal skills and college survival skills. We intend for this to be a supportive, respectful and collaborative environment where everyone can learn and grow. Fall only course offering. Restricted to: College of Education majors.  
Learning Outcomes  
1. Students will be able to demonstrate an understanding of the relationship between time management and academic success. Students will be able to express a familiarity with college culture. Students will be able to communicate a comprehension of study skills and test taking strategies. Students will be able to apply material learned to other aspects to enhance academic excellence. Students will be able to develop an academic life plan that will highlight goals, taking into account life circumstances. Become competent in appropriate academic communication.

CEPY 2110. Learning in the Classroom  
3 Credits (3)  
This class introduces you to the basic principles of learning, including cognition, motivation, and assessment. You will examine the relationships between theory, research, and practice in learning, memory, child development, motivation, and educational assessment for the school setting. This course will provide the student with concepts and principles of educational psychology that will form a framework for thinking about learning and instruction and how theories of learning are connected to classroom situations.  
Learning Outcomes  
1. Define learning and compare and contrast the factors that cognitive, behavioral, and humanistic theories believed to influence the learning process, giving specific examples of how these principles could be used in the classroom.  
2. Observe and reflect upon the teaching learning processes in economically, socially, culturally and educationally diverse classroom populations in order to develop a current understanding of students and families in public and private school.  
3. Discuss how theories of information processing and cognitive theories of learning can impact memory, study strategies, and how certain teaching techniques can help students learn.  
4. Compare teacher-centered and student-centered approaches to learning, and to identify a positive learning environment.  
5. Identify various methods to motivate students and create effective learning environments.  
6. Use major concepts of child and adolescent development, human learning, and social and cultural influences in planning and implementing classroom instruction, strategies, and management.  
7. Evaluate the best means of accommodating instruction to meet individual needs and differences.  
8. Students will examine how learning style, cultural and social issues and learning disabilities impact the learner's effectiveness in the classroom setting.  
9. Explain different types of assessment used to assess learning and provide examples of effective assessment practices.  
10. Discuss the relationship between motivation and classroom management.

CEPY 2120. The Preschool Child  
3 Credits (3)  
Survey of psychological development from conception to age five.  
Learning Outcomes  
1. Demonstrate an understanding of major theories of early childhood development  
2. Demonstrate an understanding of recognized stages of human development from prenatal to preschool years  
3. Explore cultural influences that may create variability in human development  
4. Apply major theories to themselves and reflect on their early childhood development.
CEPY 2130. Adolescence - School Setting
3 Credits (3)
This course is designed to present the student with an introduction to the area of adolescent development with an emphasis on the positive aspects of this life stage. Students will be encouraged to be reflective on the topics presented in class that will include issues on diversity, culture, health, and well-being, emerging adulthood and suggestions for improving the lives of adolescents.

Learning Outcomes
1. Students will become knowledgeable about the historical background of adolescent development.
2. Students will become knowledgeable about the major theories related to adolescence.
3. Students will evaluate different developmental theories and their fit across cultures as you reflect on your personal experiences through discussions and videos you will watch.
4. Students will identify key developmental milestones, conflicts, and concepts of each chapter presented by utilizing critical thinking skills as you complete summary questions.
5. Students will define relevant terms, ideas, and concepts in the study of adolescent development through quizzes and homework assignments.

CEPY 2140. Explorations of Counseling & Community Psychology
3 Credits (3)
An introduction and exploration of various career options and functions within the mental health disciplines to aid in professional development. Emphasis will be placed on depth and scope of the choices available including research, teaching, community work, public policy, and clinical work and prevention (e.g. counseling, psychotherapy, assessment, consultation). May be repeated up to 6 credits.

Learning Outcomes
1. Acquire knowledge of historical and contemporary issues which affect the provision of mental health services by members of diverse mental health disciplines including clinical, counseling, school, and community psychologists, clinical mental health counselors, and others.
2. Acquire knowledge pertaining to education and training requirements for various disciplines.
4. Acquire survey-level knowledge of various inquiry approaches applicable to research pertaining to mental health and well-being—both at the individual and community level.
5. Understand the mental health recovery model and explore the lived experiences of individuals with mental health problems in contemporary society.
6. Understand the principles of sensitivity and respect for diverse populations as integral to professional practice in diverse mental health disciplines and settings, including practice in educational and community settings.

CEPY 2140H. Exploration of CCP
3 Credits (3)
An exploration of careers, activities, & techniques in counseling, school, and community psychology. Taught with CEPY 2140 with differentiated instruction and/or independent project to be determined. Restricted to Las Cruces campus only.

Learning Outcomes
1. Demonstrating knowledge of the basic functions of careers in counseling, community and school psychology.
2. Establishing a familiarity with the educational requirements necessary for a career in counseling, community, and school psychology.
3. Acknowledging and enhancing sensitivity and respect for diverse populations in various counseling areas; including educational and community settings.
4. Beginning to develop the interpersonal skills needed to succeed in the counseling, community and school psychology professions.

CHEF-CULINARY ARTS (CHEF)

CHEF 101. Culinary Arts Kitchen Orientation
3 Credits (3)
Provides students with basic information and skills necessary for success in the Culinary Arts program. Students learn basic kitchen routines, safety and sanitation, professional conduct and deportment, standard kitchen calculations, knife handling, and are introduced to the laboratories for initial cooking experiences. Restricted to Community Colleges campuses only.

CHEF 125. Introductory Cake Decorating
1 Credit (2P)
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 Colleges campuses only.
Prerequisite(s): Consent of instructor.

CHEF 126. Intermediate Cake Decorating
1 Credit (2P)
Introduction to more advanced professional cake decorating techniques used by pastry chefs. Fondant work and more complex decorating schemes are taught. Restricted to Community Colleges campuses only.
Prerequisite(s): CHEF 125.

CHEF 127. Chocolate Work
1 Credit (2P)
Introduction to working with chocolate utilizing a variety of methods. Tempering, forming, molding, and other professional techniques will be taught. Restricted to Community Colleges campuses only.
Prerequisite(s): Consent of Instructor.

CHEF 128. Advanced Chocolate Work
1 Credit (2P)
More advanced treatments of chocolate are explored and professional techniques for the chocolatier are developed. Restricted to Community Colleges campuses only.
Prerequisite(s): CHEF 127.
CHEF 129. Wedding Cake Design and Construction  
1 Credit (2P)  
Basic skills in designing wedding (or other specialty event) cakes. Includes shaping, icing selection, decorating scheme, presentation, transportation, and remote setup. Restricted to Community Colleges campuses only.  
Prerequisite(s): CHEF 125 and CHEF 126.  

CHEF 155. Special Topics  
1-3 Credits (1-3)  
Specific subjects to be announced in the Schedule of Classes. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.  

CHEF 165. Math for Kitchen Operations  
3 Credits (3)  
Fundamental mathematical concepts and computations, including measurement, recipe scaling and conversions, metric unit conversion, ingredient yield calculations, ratios and cost extensions are covered. Examples of basic mathematical calculations use kitchen and food service functions, as well as situations to demonstrate principles.

CHEF 211. Food Production Management I  
3 Credits (2+2P)  
Introduction to kitchen design, workflow, and commercial equipment. Techniques, methods, and application of basic food production principles. Practical experience in cooking processes from a managerial viewpoint. Crosslisted with: HOST 211. Restricted to Community Colleges only.

CHEF 212. Food Production Management II  
3 Credits (2+2P)  
Prerequisite(s): CHEF 211 or consent of instructor.

CHEF 213. Bakery Management I  
3 Credits (2+2P)  

CHEF 214. Bakery Management II  
3 Credits (2+2P)  
Advanced techniques and management of bakery operations are explored. Students learn classical forms and techniques. Modern methods of preparing traditional pastry and baked goods are introduced. Crosslisted with: HOST 218. Restricted to Community Colleges only.  
Prerequisite(s): CHEF 213 or consent of instructor.

CHEF 233. Culinary Arts Fundamentals I  
4 Credits (1+9P)  
Introduction to the basics of culinary arts, including ingredients recognition, cooking methods and techniques, knife usage, preparation of basic stocks, mother sauces, starches and vegetables. Students will participate in laboratory work designed to create an understanding of the professional role of the culinarian. Preparation and production of food products integral to service to guests is incorporated in the course. May be repeated up to 4 credits. Consent of Instructor required. Restricted to: CHEF, HOST, HSMG, HOCH majors. Restricted to Community Colleges campuses only.

CHEF 234. Culinary Arts Fundamentals II  
4 Credits (1+9P)  
Continuation of introductory course focusing on meat cookery, daughter sauces, cold food preparation, poultry and seafood. Safe use of equipment is emphasized while experiencing differing methods of preparation and cooking. Preparation and production of food products integral to service of guests is incorporated in this course. May be repeated up to 4 credits. Restricted to: HOST, HSMG, CHEF majors. Restricted to Community Colleges campuses only.  
Prerequisite(s): CHEF 233 with a grade of "C-" or better.

CHEF 235. Advanced Culinary Arts I  
4 Credits (1+9P)  
Exploration and experience in preparation techniques beyond the basic level. Nutritional components of food are discussed, as in the application of good nutrition practices in recipe design. Students are encouraged to use creative methods to expand the individual’s culinary expressions. Prepares food products for service to guests in both bulk feeding and individual service settings. Plans, prepares, serves and critiques meals provided for students, faculty and staff. May be repeated up to 4 credits.  
Prerequisite(s)/Corequisite(s): CHEF 234 with a grade of "C" or better if course has been previously taken. Restricted to: CHEF majors. Restricted to Community Colleges campuses only.

CHEF 236. Advanced Culinary Arts II  
4 Credits (1+9P)  
Advanced techniques and experimental use of food combinations to enhance the student’s repertoire of skills and abilities. Utilizes knowledge to develop recipes for unique products. Plans, prepares, serves and critiques meals provided for students, faculty and staff. Restricted to: CHEF majors. Restricted to Community Colleges campuses only.  
Prerequisite(s): CHEF 235 with a grade of "C" or better.

CHEF 237. Banquet/Catering Production  
3 Credits (1+6P)  
Planning and implementation of the culinary aspects of catered functions. Development of time schedules, work assignments and service plans for catered events and banquet functions. Production of food items in appropriate quantities for catered events. Costing and control functions are covered. May be repeated up to 6 credits. Restricted to: CHEF, HOST majors. Restricted to Community Colleges campuses only.  
Prerequisite(s): Grade of "C" or above in CHEF 233.

CHEF 240. Baking Fundamentals I  
4 Credits (1+9P)  
Introduction to baking techniques, measurement and use of ingredients; equipment use and chemical reactions inherent in the baking process. Production of simple desserts and baked goods. Introduction to working with bread doughs. Restricted to: HOST, CHEF majors. Restricted to Community Colleges campuses only.  
Corequisite(s): CHEF 233.

CHEF 241. Baking Fundamentals II  
4 Credits (1+9P)  
More advanced baking and bread making techniques are covered in this course with emphasis on the more advanced elements of quantity production. Students work with a variety of products and ingredients. Restricted to: HOST, CHEF majors. Restricted to Community Colleges campuses only.  
Prerequisite(s): grade of "C" or above in CHEF 240.
CHEF 242. Intermediate Baking I
4 Credits (1+9P)
More advanced baking and pastry techniques are covered in this course with emphasis on the basic elements of patisserie production. Focus is on preparing students to work in a pastry kitchen. Restricted to: HOST, CHEF majors. Restricted to Community Colleges campuses only.
Prerequisite(s): Grade of "C" or above in CHEF 241.

CHEF 243. Intermediate Baking II
4 Credits (1+9P)
Continuation of work with basic elements of patisserie products including laminated doughs and filled products. Students prepare creams, custards, fillings and are introduced to cake assembly procedures. Restricted to: CULI majors. Restricted to Community Colleges campuses only.
Prerequisite(s): Grade of "C" or above in CHEF 242.

CHEF 255. Special Topics
3 Credits (3)
Specific subjects to be announced in the Schedule of Classes. May be repeated up to 6 credits. Restricted to: CULI, HOST, HSMG majors. Restricted to Community Colleges campuses only.

CHEF 256. International Cuisine
3 Credits (1+6P)
Exploration into a variety of international cuisines is undertaken, including the cultural and historical backgrounds of the foods being prepared. Students work on developing themed menus and production plans for meals utilizing a single international cuisine. May be repeated up to 6 credits. Restricted to: CHEF, HOST majors. Restricted to Community Colleges campuses only.
Prerequisite(s): Grade of "C" or above in CHEF 233.

CHEF 257. Garde Manger
3 Credits (1+6P)
Traditional garde manger skills are taught, including plated salads, cold foods, entremets, pates, forcemeat, terrines, charcuterie and chaud froid work. The art and craft of food design, preparation and service are emphasized. May be repeated up to 3 credits. Restricted to: CHEF, HOST majors. Restricted to Community Colleges campuses only.
Prerequisite(s): Grade of "C" or above in CHEF 233.

CHEF 260. Nutrition for Chefs
3 Credits (3)
Aspects of basic human nutritional requirements are covered as are the applications of the standards to the cooking and baking. Meeting the USDA nutrient guidelines while preparing good tasting food is discussed, calorie, fat and sodium reduction techniques are explored.

CHEM 1100. General Chemistry I
4 Credits (3+3P)
This course covers qualitative and quantitative areas of non-organic general chemistry for non-science majors and some health professions. Students will learn and apply principles pertaining, but not limited to, atomic and molecular structure, the periodic table, acids and bases, mass relationships, and solutions. The laboratory component introduces students to techniques for obtaining and analyzing experimental observations pertaining to chemistry using diverse methods and equipment.
Prerequisite: CCDM 114N or A S 103 or MATH 1215 or higher.

Learning Outcomes
1. (Lecture) Use the different systems of measurements and perform conversions within the same system of measurement and between different systems of measurements
2. (Lecture) Identify elements from their name or symbol, use the periodic table to describe reactivity patterns of elements and to predict compound formation.
3. (Lecture) Describe the basic structure of an atom using subatomic particles, and apply these concepts to nuclear reactions.
4. (Lecture) Describe ion formation and the difference between covalent and ionic compounds. Name and write formulas for ionic and simple molecular compounds.
5. (Lecture) Write and balance chemical reactions. Use balanced reactions in stoichiometric calculations.
6. (Lecture) Describe the differences between the solid, liquid and gas phases. Use the gas laws in calculations, and apply these laws to everyday situations.
7. (Lecture) Explain different types of energy, and how energy is released or absorbed in a reaction
8. (Lecture) Describe acid and base behavior.
9. (Lecture) Explain the intermolecular attractive forces that determine physical properties; apply this knowledge to qualitatively evaluate these forces and predict the physical properties that result.
10. (Lecture) Explain the intermolecular attractive forces that determine physical properties; apply this knowledge to qualitatively evaluate these forces and predict the physical properties that result
11. (Laboratory) Practice concepts associated with laboratory safety, including the possible consequences of not adhering to appropriate safety guidelines.
12. (Laboratory) Demonstrate the computational skills needed to perform appropriate laboratory-related calculations to include, but not be limited to determining the number of significant figures in numerical value, solving problems using values represented in exponential notation, solving dimensional analysis problems, and manipulating mathematical formulas as needed to determine the value of a variable.
13. (Laboratory) Perform laboratory observations (both qualitative and quantitative) using sensory experience and appropriate measurement instrumentation (both analog and digital).
14. (Laboratory) Record quantitatively measured values to the correct number of significant figures and assign the correct units.
15. (Laboratory) Master basic laboratory techniques including, but not limited to weighing samples (liquid and solid), determining sample volumes, measuring the temperature of samples, heating and cooling a sample or reaction mixture, decantation, filtration, and titration.
16. (Laboratory) Draw appropriate conclusions based on data and analyses.
17. (Laboratory) Present experimental results in laboratory reports of appropriate length, style and depth, or through other modes as required.
18. (Laboratory) Determine chemical formulas and classify different types of analyses.
CHEM 1121. General Supplemental Instruction I
1 Credit (1)
Collaborative workshop for students in General Chemistry I. Course does not count toward departmental degree requirements. May be repeated for a maximum of 2 credits.
Corequisite(s): CHEM 1215G.

CHEM 1122. General Supplemental Instruction II
1 Credit (1)
Collaborative workshop for students in General Chemistry II. Course does not count toward departmental degree requirements. May be repeated for a maximum of 2 credits.
Corequisite(s): CHEM 1225G.

CHEM 1123. Principles of Supplemental Instruction III
1 Credit (1)
Collaborative workshop for students in CHEM 1120G, Principles and Applications of Chemistry. Course does not count toward departmental degree requirements. May be repeated for maximum of 2 credits.
Corequisite(s): CHEM 1120G.

CHEM 1215G. General Chemistry I Lecture and Laboratory for STEM Majors
4 Credits (3+3P)
This course covers descriptive and theoretical chemistry.
Prerequisite: (1) grade of C- or better in MATH 1215 or higher, or a Mathematics Placement Exam Score adequate to enroll in mathematics courses beyond MATH 1215.

Learning Outcomes
1. Use dimensional analysis, the SI system of units and appropriate significant figures to solve quantitative calculations in science.
Understand the differences between physical and chemical changes to matter. Classify types of matter. Understand the scientific method in the context of scientific discoveries. Explain the structure of atoms, isotopes and ions in terms of subatomic particles. Analyze how periodic properties (e.g. electronegativity, atomic and ionic radii, ionization energy, electron affinity, metallic character) and reactivity of elements results from electron configurations of atoms. Understand the creation of different types of compounds (ionic and molecular), comparing and contrasting their structures, naming schemes and formulas. Apply knowledge of electronic structure to determine molecular spatial arrangement and polarity. Understand bulk pure substances, their properties and their states of matter by understanding and identifying intermolecular forces. Apply kinetic molecular theory to relate atomic level behavior to macroscopic properties. Introduce the mole and apply the mole concept to amounts on a macroscopic and a microscopic level. Understand mixtures, solubility by considering intermolecular forces and expressing concentration in molarity. Identify different reaction types. Apply the law of conservation of mass to reactions. Perform stoichiometry on balanced reactions. Laboratory Student Learning Outcomes Demonstrate and apply concepts associated with laboratory safety, including the possible consequences of not adhering to appropriate safety guidelines. Demonstrate the computational skills needed to perform appropriate laboratory related calculations to include, but not be limited to determining the number of significant figures in numerical value with the correct units, solving problems using values represented in exponential notation, solving dimensional analysis problems, and manipulating mathematical formulas as needed to determine the value of a variable. Perform laboratory observations (both qualitative and quantitative) using sensory experience and appropriate measurement instrumentation (both analog and digital). Prepare solutions with an acceptable accuracy to a known concentration using appropriate glassware. Master basic laboratory techniques including, but not limited to weighing samples (liquid and solid), determining sample volumes, measuring the temperature of samples, heating and cooling a sample or reaction mixture, decantation, filtration, and titration. Draw conclusions based on data and analyses from laboratory experiments. Relate laboratory experimental observations, operations, calculations, and findings to theoretical concepts presented in the complementary lecture course.
CHEM 1216. General Chemistry I Lecture and Laboratory for CHEM Majors
4 Credits (3+3P)
As the first of a two-semester sequence, this course teaches fundamental concepts in chemistry, including the electronic structure of atoms, chemical periodicity, nature of chemical bonds, molecular structure, the three phases of matter, etc. Designed for majors in chemical and other physical sciences, including engineering. May be appropriate for the life science major. It is assumed that the students are familiar with college algebra, chemical nomenclature, stoichiometry, and scientific measurements. The laboratory component is designed to complement the theory and concepts presented in lecture, and will introduce students to techniques for obtaining and analyzing experimental observations pertaining to chemistry using diverse methods and equipment.
Prerequisite(s): Eligible to take MATH 1250G and an ACT composite score of 22 or higher.
Learning Outcomes
1. Apply the mole concept to amounts at a microscopic level and use this to perform stoichiometric calculations for reactions in solution, gases and thermochemistry. Calculate solution concentrations in various units. Apply the gas laws and kinetic molecular theory to relate atomic level behavior to macroscopic properties. Explain the electronic structure of atoms, isotypes and ions in terms of its subatomic particles. Analyze how periodic properties (e.g. electronegativity, atomic and ionic radii, ionization energy, electron affinity, metallic character) and reactivity of elements results from electronic configurations of atoms. Understand the nature of chemical bonds (ionic and covalent). Apply knowledge of electronic structure to determine molecular structure and polarity. Understand the formation of different phases of matter and the underlying fundamental intermolecular interactions. Describe physical states and changes, and distinguish these from chemical changes. Describe the energy conversions that occur in chemical reactions and state changes, relating heat of reaction to thermodynamic properties such as enthalpy and internal energy; apply these principles to measure and calculate energy changes in reaction. 1 Apply principles of general chemistry to specific real-world problems in environment, engineering and health-related fields.

CHEM 1225G. General Chemistry II Lecture and Laboratory for STEM Majors
4 Credits (3+3P)
This course is intended to serve as a continuation of general chemistry principles for students enrolled in science, engineering, and certain preprofessional programs. The course includes, but is not limited to a theoretical and quantitative coverage of solutions and their properties, kinetics, chemical equilibrium, acids and bases, entropy and free energy, electrochemistry, and nuclear chemistry. Additional topics may include (as time permits) organic, polymer, atmospheric, and biochemistry. The laboratory component is designed to complement the theory and concepts presented in lecture, and will introduce students to techniques for obtaining and analyzing experimental observations pertaining to chemistry using diverse methods and equipment.
Prerequisite(s): C- or better in CHEM 1215G.
Learning Outcomes
1. Explain the intermolecular attractive forces that determine physical properties and phase transitions, and apply this knowledge to qualitatively evaluate these forces from structure and to predict the physical properties that result. Calculate solution concentrations in various units, explain the effects of temperature, pressure and structure on solubility, and describe the colligative properties of solutions, and determine solution concentrations using colligative property values and vice versa. Describe the dynamic nature of chemical equilibrium, and apply LeChatelier’s Principle to predict the effect of concentration, pressure and temperature changes on equilibrium mixtures as well as describe the equilibrium constant and use it to determine whether equilibrium has been established, and calculate equilibrium constants from equilibrium concentrations and vice versa. Describe the different models of acids and base behavior and the molecular basis for acid strength, as well as apply equilibrium principles to aqueous solutions, including acid/base and solubility reactions, and calculate pH and species concentrations in buffered and unbuffered solutions. Explain titration curves as well as calculate concentrations of reactants. Explain and calculate the thermodynamic functions, enthalpy, entropy and Gibbs free energy, for a chemical system, and relate these functions to equilibrium constants Student Learning Outcomes – Laboratory Demonstrate and apply concepts associated with laboratory safety, including the possible consequences of not adhering to appropriate safety guidelines. Demonstrate the computational skills needed to perform appropriate laboratory related calculations to include, but not be limited to determining the number of significant figures in numerical value with the correct units, solving problems using values represented in exponential notation, solving dimensional analysis problems, and manipulating mathematical formulas as needed to determine the value of a variable. Perform laboratory observations (both qualitative and quantitative) using sensory experience and appropriate measurement instrumentation (both analog and digital). Prepare solutions with an acceptable accuracy to a known concentration using appropriate glassware. Perform basic laboratory operations related to, but not limited to, colligative properties of solutions, chemical equilibria, acid/base titrations, electrochemistry. Draw conclusions based on data and analyses from laboratory experiments. Relate laboratory experimental observations, operations, calculations, and findings to theoretical concepts presented in the complementary lecture course.
CHEM 1226. General Chemistry II Lecture and Laboratory for CHEM Majors
4 Credits (3+3P)
As the second of a two-semester sequence, this course teaches fundamental concepts in chemistry, including solutions, equilibria, electrochemistry, thermodynamics and kinetics. Designed for majors in chemical and other physical sciences, including engineering. May be appropriate for the life science major. It is assumed that the students are familiar with college algebra, chemical nomenclature, stoichiometry, and scientific measurements. The laboratory component is designed to complement the theory and concepts presented in lecture, and will introduce students to techniques for obtaining and analyzing experimental observations pertaining to chemistry using diverse methods and equipment.
Prerequisite(s): C- or better in CHEM 1216.

Learning Outcomes
1. Describe the colligative properties of solutions and explain them using intermolecular forces. Determine solution concentrations using colligative property values and vice versa. Explain rates of reactions, rate laws, and half-life; determine the rate, rate law and rate constant of a reaction and calculate concentration as a function of time and vice versa. Understand the principle of catalysis. Explain the collision model of reaction dynamics, including activation energy, catalysts and temperature; Derive a rate law from a reaction mechanism and evaluate the consistency of a mechanism with a given rate law. Describe the dynamic nature of chemical equilibrium and its relation to reaction rates; apply Le Chatelier's Principle to predict the effect of concentration, pressure and temperature changes on equilibrium mixtures. Describe the equilibrium constant and use it to determine whether equilibrium has been established; calculate equilibrium constants from equilibrium concentrations (including pressures) and vice versa. Describe the different models of acids and base behavior, and the molecular basis for acid strength.

CHEM 2115. Survey of Organic Chemistry and Laboratory
4 Credits (3+3P)
This course is a one-semester survey of organic and biological chemicals. Students will be introduced to nomenclature, molecular structure, properties, and reactions of hydrocarbons, alcohols, carbonyls, organic acids and bases, carbohydrates, lipids, and proteins. The handling of organic chemicals, simple organic reactions, tests for functional groups, and synthesis will be learned in the laboratory component of this course. May be repeated up to 4 credits.
Prerequisite(s): CHEM 1225G.

Learning Outcomes
1. Identify common organic functional groups.
2. Translate between the IUPAC names and structures of simple organic molecules.
3. Predict the products of certain organic chemical reactions from reagents and conditions presented.
4. Predict physical and chemical behavior of organic molecules based on structure.
5. Synthesize several classes of organic compounds in the laboratory that were previously studied in the lecture component of this course.
6. Recognize and name the four basic bioorganic units and certain of their derivatives and macromolecules.
7. Construct 3 dimensional models of organic compounds.
8. Understand and apply safety principles associated with Organic Chemistry laboratory operations and activities.
9. Present experimental results in laboratory reports of appropriate length, style and depth, or through other modes as required.
10. Draw/recognize stereochemistry and explain its relevance to bioorganic molecules.

CHEM 2120. Integrated Organic Chemistry and Biochemistry
3 Credits (3)
This course is a one-semester introduction to Organic Chemistry and Biochemistry designed for students in health and environmental occupations. The course surveys organic compounds in terms of structure, physical, and chemical properties, followed by coverage of the chemistry of specific classes of organic compounds in the biological environment. Students will apply course concepts to everyday organic and biological chemistry problems in preparation for careers in health and environmental fields.
Prerequisite: CHEM 1120G or CHEM 1215G.

Learning Outcomes
1. Identify and name basic organic compounds.
2. Construct/draw organic compounds from the names.
3. Predict the products of certain organic chemical reactions from reagents and conditions presented.
4. Recognize and name the four basic bioorganic units and certain of their derivatives and macromolecules.
5. Compare and contrast the function and location of the four bioorganic units and their macromolecules and cofactors.
6. Draw/recognize stereochemistry and explain its relevance to bioorganic molecules.
7. Discuss the pathways and functions of some of the cellular metabolic processes.
8. Recognize and describe metabolic cellular processes and macromolecular structure with respect to health and/or disease state...
CHEM 2226. General Chemistry III
3 Credits (2+3P)
Quantitative aspects of general chemistry: solid state structure, equilibrium, thermodynamics, and kinetics. Required of chemical science majors who have taken CHEM 1215G/1225G.
Prerequisite: CHEM 1225G.
Learning Outcomes
1. describe the process of scientific inquiry
2. solve problems scientifically
3. communicate scientific information
4. apply quantitative analysis to scientific problems
5. apply scientific thinking to real world problems

CHEM 2991. Introduction to Research
1-3 Credits (3+9P)
Techniques and procedures of chemical research. May be repeated for a maximum of 3 credits.
Prerequisites: 8 credits of chemistry and a 3.0 GPA in chemistry.
Learning Outcomes
1. Varies

CHEM 2996. Special Topics in Chemistry
1-6 Credits (1-6)
Specific subjects in Chemistry. These subjects will be announced in the 'Schedule of Classes'. It may be repeated under different topics for a maximum of 12 credits.
Learning Outcomes
1. Varies

CHIN 1110. Mandarin Chinese I
4 Credits (4)
This is the first semester of a two-semester sequence in first year modern standard Chinese ("Mandarin"). This course is recommended for students who have had little or no experience in the Chinese language. A beginning Mandarin Chinese course is designed to introduce the Mandarin sound system ("pinyin"), basic vocabulary, Chinese characters (either in Simplified or Traditional characters), and basic grammatical concepts and structures. In order to help beginners develop their communicative competence in the four basic skills, the 5Cs (Communication, Cultures, Comparisons, Connections, and Communities) will be integrated consistently into the content and exercises in the course.
Learning Outcomes
1. Approach a novice-mid proficiency (ACTFL) in speaking, listening, reading, writing, as well as to develop their cultural awareness
2. Demonstrate knowledge of the phonetic system in Mandarin Chinese
3. Pronounce Chinese pinyin in correct tones
4. Demonstrate the mastery of the most commonly used characters (approximately 400-500)
5. Understand basic Chinese grammatical concepts
6. Use basic Mandarin vocabulary, introductory phrases and sentences in both oral and written forms
7. Understand greetings in China, countries and nationalities, Chinese family values, hobbies, and being someone's guest in China
8. Apply the language to greet each other, identify countries and nationalities, talk about his/her family, discuss important dates, talk about hobbies, and visit a friend in China
9. Develop basic reading and writing skills in Chinese
10. Develop initial understanding of Chinese culture, compare aspects of different cultures, make connections to their daily life, and build links among communities
CHIN 1120. Mandarin Chinese II
4 Credits (4)
This is the second semester of a two-semester sequence in first year modern standard Chinese ("Mandarin"). This course is designed for students who have taken 1st Semester Mandarin Chinese, and focuses on enhancing pronunciation and expanding the vocabulary and grammar dealing with daily activities. In order to help beginners develop their communicative competence in the four basic skills, the 5Cs (Communication, Cultures, Comparisons, Connections, and Communities) will be integrated consistently into the content and exercises in the course.

Prerequisite(s): C or better in CHIN 1110.

Learning Outcomes
1. Maintain a novice-mid and approach a novice-high proficiency (ACTFL) in speaking, listening, reading and writing, as well as to enhance their cultural awareness
2. Demonstrate continued mastery of the four tones used in Mandarin Chinese
3. Demonstrate continued mastery of the most commonly used characters (approximately 500-600)
4. Apply basic grammatical concepts and structures, and begin exploring intermediate grammatical concepts
5. Demonstrate continued growth in vocabulary and expressions necessary for conversation in and about real life situations
6. Understand basic phone calls, discussion of studies, school life, shopping and transportation
7. Apply the language to make simple phone calls, discuss studies, talk about school life, go shopping and use transportation
8. Continue developing basic reading and writing skills in Chinese
9. Develop further understanding of Chinese culture, compare aspects of different cultures, make connections to their daily life, and build links among communities

CHIN 2110. Mandarin Chinese III
3 Credits (3)
This is the first semester of a two-semester sequence in second year modern standard Chinese ("Mandarin"). This course is designed for students who have taken 1st and 2nd Semester Mandarin Chinese (or equivalence), and have a basic foundation on Chinese phonetics, characters, and grammars. In order to help students develop their communicative competence in the four basic skills, the 5Cs (Communication, Cultures, Comparisons, Connections, and Communities) will be integrated consistently into the content and exercises in the course. Restricted to Las Cruces campus only.

Prerequisite(s): C or better in CHIN 1120.

Learning Outcomes
1. Maintain a novice-high and approach an intermediate-low proficiency (ACTFL) in speaking, listening, reading and writing, as well as to enhance their cultural understanding
2. Pronounce the four tones used in Mandarin Chinese comfortably
3. Demonstrate continued mastery of the most commonly used characters (approximately 600-800)
4. Apply intermediate grammatical concepts and structures
5. Demonstrate continued growth in vocabulary and expressions in a variety for conversation in and about real life situations
6. Understand topics including but not limited to simple weather reports, dinning, directions, birthday party stories, and seeing a doctor
7. Apply the language to talk about weather, order food, ask and give directions, describe birthday parties, and see a doctor (these are suggested topics, no intention to limit the topic range)
8. Continue developing paragraph-length reading and writing skills in Chinese
9. Deepen understanding of Chinese culture, compare aspects of different cultures, make further connections to their daily life, and build stronger links among communities
CHIN 2120. Mandarin Chinese IV
3 Credits (3)
This is the second semester of a two-semester sequence in second year modern standard Chinese (“Mandarin”). This course is designed for students who have taken 1st, 2nd, and 3rd Semester Mandarin Chinese (or equivalence), and have a good foundation on Chinese phonetics, characters, and grammars. In order to help students develop their communicative competence in the four basic skills, the 5Cs (Communication, Cultures, Comparisons, Connections, and Communities) will be integrated consistently into the content and exercises in the course. Restricted to Las Cruces campus only.
Prerequisite(s): C or better in CHIN 2110.

Learning Outcomes
1. Maintain an intermediate-low and approach an intermediate-mid proficiency (ACTFL) in speaking, listening, reading and writing, as well as to strengthen their cultural understanding
2. Pronounce the four tones used in Mandarin Chinese fluently
3. Demonstrate continued mastery of the most commonly used characters (approximately 800-1000)
4. Apply more intermediate grammatical concepts and structures
5. Demonstrate continued growth in vocabulary and expressions in a variety for conversation in and about real life situations as well as simple academic settings
6. Demonstrate language skills that would help them travel or live in China
7. Understand topics including but not limited to dating, renting an apartment, sports, traveling, conversations at an airport
8. Apply the language to extend/decline invitations, rent an apartment, talk about sports, travel, check in and arrive at an airport (these are suggested topics, no intention to limit the topic range)
9. Continue developing multiple-paragraph-length reading and writing skills in Chinese
10. Deepen understanding of Chinese culture, compare aspects of different cultures, make further connections to their daily life, and build stronger links among communities

CHME-CHEMICAL & MATERIALS ENGR (CHME)

CHME 201. Energy Balances & Basic Thermodynamics
3 Credits (3)
Chemical Engineering energy balances; combined energy and material balances including those with chemical reaction, purge and recycle; thermochemistry; application to unit operations. Introduction to the first and second laws of thermodynamics and their applications. May be repeated up to 3 credits.
Prerequisite(s): CHME 102, CHEM 1216 or CHEM 1215G, and MATH 1521G or MATH 1521H.

CHME 294. Communicating in Chemical Engineering
2 Credits (2)
Students will master the fundamentals of communicating as an engineer, with focus on both written and oral communication, both independently and collaboratively, including development of the skills of gathering information and making decisions.
Corequisite(s): ENGL 1110G, COMM 1115G.

CHSS - COMM HEALTH/SOC SRVCS (CHSS)

CHSS 1110. Intro to Health & Community Services
3 Credits (3)
This course offers a holistic and multidisciplinary approach towards health promotion, wellness and a healthy lifestyle. Emphasis is placed on the major problems/issues that have the greatest significance to personal and community health. Topics to be discussed include: nutrition, fitness, stress management, sexuality, drug education and others.

Learning Outcomes
1. Understand basic foundations of community health –history, framework and present progress: Identify key historical advances, people and events in public health; Understand Healthy People 2020 goals and objectives; Understand the levels of prevention (primary, secondary, tertiary) of public health
2. Identify organizations that help shape community health and their role in promoting health: Governmental; Quasi-Governmental; Nongovernmental; Identify local resources/agencies focused on health and human services
3. Conduct research in public health: Identify major sources for public health research; Governmental websites; Journals; Interpret and evaluate public health resources for academic use; Write a basic journal article critique
4. Understand the history and function of the school health program: Identify components of a coordinated school health program; Identify and overcome barriers common to CSHP; Apply the CSHP to contemporary issues in child/adolescent health
CHSS 2510. Service Learning
1-4 Credits (1-4)
Service Learning Experience in Human and Community Service: Exploration of contemporary social, civil, economic and ethical problems that require student participation in collaborative efforts within the community
Prerequisite(s)/Corequisite(s): PHLS 1110G, CHSS 1110, and PHLS 2120. Prerequisite(s): PHLS 2110. Restricted to Community Colleges campuses only.
Learning Outcomes
1. Understand the importance of service learning in community building and civic participation.
2. Students should have completed at least 90 hours of service learning experience with a community agency of their choice.
3. Compile and submit a list of detailed daily service learning activities including contact individuals, meetings attended, presentations, specific tasks accomplished or contributions to agency or community, new skills learned, trainings, and number of hours spent on each activity.
4. Design a service learning project incorporating the key elements of Public Health, and addressing a need in the community.
5. Provide an oral presentation and write a personal reflection of the service learning experience in class.
6. Practice critical thinking, decision making skills, and civic responsibility in promoting better health and general well-being

CHSS 2511. Leadership/Mentorship Training for the CHSS Ambassadors Program
1 Credit (1)
Leadership development for volunteers serving as CHSS ambassadors. Focus on public relations and CHSS undergraduate degree programs.
Graded S/U.
Prerequisite: consent of instructor.
Learning Outcomes
1. Compare and contrast different theories of leadership.
2. Demonstrate skillful communication in a leadership role.
3. Work with a team to develop and manage large-scale events.

CJUS-CRIMINAL JUSTICE

CJUS 1110G. Introduction to Criminal Justice
3 Credits (3)
This course provides an overall exploration of the historical development and structure of the United States criminal justice system, with emphasis on how the varied components of the justice system intertwine to protect and preserve individual rights. The course covers critical analysis of criminal justice processes and the ethical, legal, and political factors affecting the exercise of discretion by criminal justice professionals.
Learning Outcomes
1. Describe the history, structure and function of the criminal justice system in the United States.
2. Discuss the role of law enforcement, court systems, corrections, and security in maintaining social order.
3. Identify and describe crime causation theories, various measures of crime and their reliability and victimization theories.
4. Relate fundamental principles, concepts and terminology used in criminal justice to current events.
5. Apply basic analytical and critical thinking skills in evaluating criminal justice issues, policies, trends and disparities.

CJUS 1120. Criminal Law
3 Credits (3)
This course covers basic principles of substantive criminal law including elements of crimes against persons, property, public order, public morality, defenses to crimes, and parties to crime. May be repeated up to 3 credits.
Learning Outcomes
1. Explain the concepts of substantive criminal liability in the United States, including actus reas, mens rea, causation, concurrence, and parties to crime.
2. Define the differences between criminal law and civil law in the United States.
3. Demonstrate basic knowledge of legal terminology as it relates to criminal law.
4. Identify the elements of crimes against persons, property, public order and the administration of justice, public morality, and the inchoate crimes.
5. Describe the various defenses to crimes.

CJUS 1996. Special Topics in Criminal Justice
1-3 Credits
Specific subjects to be announced in the Schedule of Classes. May be repeated under different topics for a maximum of 6 credits.
Learning Outcomes
1. Varies

CJUS 2120. Criminal Courts and Procedure
3 Credits (3)
This course covers the structures and functions of American trial and appellate courts, including the roles of attorneys, judges, and other court personnel, the formal and informal process of applying constitutional law, rules of evidence, case law and an understanding of the logic used by the courts.
Learning Outcomes
1. Explain the application of the Constitutional Amendments that apply to criminal justice.
2. Explain and describe the dual court system in the U.S. and how courts enforce the rule of law.
3. Identify and list the duties and requirements of the courtroom workgroup.
4. Describe courtroom procedures, rules of the court, and due process of law.
5. Articulate basic knowledge of the U.S. criminal court system.
6. Define legal terms.
7. Explain the use of discretion in criminal procedure.
8. Differentiate the role of courts of limited jurisdiction, courts of general jurisdiction, and the appellate courts in the processing of criminal cases.
CJUS 2140. Criminal Investigations
3 Credits (3)
This course introduces criminal investigations with in the various local, state, and federal law enforcement agencies. Emphasis is given to the theory, techniques, aids, technology, collection, and preservation procedures which insure the evidentiary integrity. Courtroom evidentiary procedures and techniques will be introduced. Community Colleges only. (Note: students completing CJUS 2140 may not take CJUS 321.)

Learning Outcomes
1. Identify developments in investigation technology.
2. Identify common types of criminal investigations and their key components.
3. Apply proper crime scene investigative protocols.
4. Explain proper evidentiary gathering and handing procedures, and utilize various interviewing techniques.
5. Identify and compare different law enforcement agencies and the role they play in criminal investigations.
6. Describe proper collection, evidence preservation, documentation, and court presentation.
7. Develop effective search authorization.

CJUS 2150. Corrections System
3 Credits (3)
This course introduces the corrections system in the United States, including the processing of an offender in the system and the responsibilities and duties of correctional professionals. The course covers the historical development, theory, and practice, as well as the institutional and community-based alternatives available in the corrections process.

Learning Outcomes
1. Describe the purposes of the corrections system and the issues facing the corrections system.
2. Explain the components of the corrections system and describe their functions.
3. Compare and contrast the different forms of correction practices.
4. Explain the goals of corrections, the different factors affecting the sentencing process, the legal rights of prisoners, and the issues concerning prison violence.
5. Explain the impact of reentry into society.
6. Identify the issues concerning capital punishment.
7. Describe the effectiveness of various correction programs on offenders.

CJUS 2160. Field Experience in Criminal Justice
3-6 Credits
This course is designed to provide actual experience working for a criminal justice agency and the opportunity to apply criminal justice concepts and theory to a field situation. Students already working in an agency will complete an approved learning project while on the job. Prerequisites: CJUS 1110G, prior arrangement and consent of instructor and a GPA of 2.0 or better in major.

Learning Outcomes
1. Obtain practical experience by observing, researching, and working in a criminal justice agency.
2. Apply the knowledge of principles, theories, and methods that were learned in the classroom to situation in which field experience will be devoted.
3. Instill an understanding for general and specific problems that criminal justice agencies encounter on a daily basis.
4. Develop a professional work ethic and attitudes, including reliability, professional responsibility, and the ability to work cooperatively with others.

CJUS 2220. The American Law Enforcement System
3 Credits (3)
This course covers the historical and philosophical foundations of law and order, with an in-depth examination of the various local, state, and federal law enforcement agencies and how they interact within the criminal justice system.

Learning Outcomes
1. Discuss, evaluate, and analyze the role of police in the democratic society today, and the historical development of modern day law enforcement.
2. Define and explain the different types of community policing and the valid reasons behind their application within a community.
3. List and discuss the ways to overcome the barriers to change within a police organization, good recruitment, screening, and retention of employees.
4. Analyze and discuss the history of and the different types of police patrol, as well as the use of force and deadly force, and methods used for controlling police behavior.
5. Describe and discuss the different types of police behavior, potential oversight, and remedy and their limitations.
6. List and discuss the benefits of higher and continued education, along with the minimum educational requirements for police officers.
7. Evaluate and discuss the reasons for police stress and the methods of dealing with stressors.
8. Interpret current court cases, both state and federal, that affect police procedures.
COMM-COMMUNICATION (COMM)

COMM 1115G. Introduction to Communication
3 Credits (3)
This survey course introduces the principles of communication in the areas of interpersonal, intercultural, small group, organizational, public speaking, and mass and social media.
Learning Outcomes
1. Describe basic communication terms, forms and concepts.
2. Identify basic communication research methods and theories.
3. Explain the significance of ethics and diversity in communication processes.
4. Apply various concepts and skills in multiple communication contexts

COMM 1130G. Public Speaking
3 Credits (3)
This course introduces the theory and fundamental principles of public speaking, emphasizing audience analysis, reasoning, the use of evidence, and effective delivery. Students will study principles of communication theory and rhetoric and apply them in the analysis, preparation and presentation of speeches, including informative, persuasive, and impromptu speeches.
Learning Outcomes
1. Demonstrate effective speech preparation.
2. Demonstrate effective speech delivery through use of language, nonverbal elements and the creation of presentation aids.
3. Analyze a potential audience and tailor a speech to that audience.
4. Evaluate presentations according to specific criteria.
5. Explain common propaganda techniques and logical fallacies, and identify them in the speeches of others.
6. Recognize diversity and ethical considerations in public speaking.

COMM 2110. Communication Theory
3 Credits (3)
This course provides an exploration of major theories, concepts and methods of research in the study of human communication.
Learning Outcomes
1. Identify, explain, and illustrate key concepts and principles of the major traditions of communication theory.
2. Analyze practical problems and situations using theories.
3. Integrate research correctly and ethically from credible sources to support the primary purpose of communication.

COMM 2111. Introduction to the Communication Major
1 Credit (1)
This is a one-credit course for new Communication Studies majors. It helps them get acquainted with the department, the department head (professor for this course, the professors, other students, and the department student organizations. It also deals with degree mapping and career mapping and any problems the students are having in their first year. Finally, the students learn about the the Communication Studies discipline and various communication careers they can pursue with their degree. The class meets one day each week for one hour. Restricted to: Communication Studies majors. Restricted to Las Cruces campus only.
Learning Outcomes
1. To give you some knowledge about your major and this department.
2. To help you learn more about the study of human communication in general and we approach it in our various courses.
3. To make you comfortable with the department, its professors and graduate students, as well as staff.
4. To assist you in finding important resources for earning your degree in Communication Studies with a high GPA.
5. To engage you and your concerns in earning your degree.
6. To advise you in ways that match your goals with the department goals.

COMM 2996. Special Topics
1-3 Credits
Specific subjects and credits to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits.
Learning Outcomes
1. Varies

COMM 2997. Independent Study
1-3 Credits
Individualized, self-paced projects for students with a special interest in communication topics. May be repeated for a maximum of 6 credits.
Prerequisites: COMM 1115G and sophomore standing.
Learning Outcomes
1. Varies

CSEC - CYBERSECURITY (CSEC)

CSEC 110. Principles of Cybersecurity
3 Credits (3)
Course covers contemporary trends in cybersecurity including understanding characteristics of security vulnerabilities as they relate to hardware, software, data, procedures, and user actions. Restricted to Community Colleges campuses
Learning Outcomes
1. Explain the importance of cybersecurity in the global economy.
2. Explain why cybersecurity is a growing profession.
3. Explain how hackers use unsuspecting individuals to propagate risk
4. Explain why cybersecurity is critical to industry and public safety
5. Explain approach to cybersecurity.
6. Explain the characteristics of cyber warfare.
7. Explain trends in the cyber threat landscape.
8. Explain the framework of enterprise security solutions.
CSEC 275. Introductory to Cryptography
3 Credits (3)
Introduction to the foundation of cryptography, principles behind cryptographic design, and cryptographic applications. Topics include encryption techniques, common cryptographic protocols and security functions.
Prerequisite(s)/Corequisite(s): MATH 1215 or above. Restricted to Las Cruces campus only.
Learning Outcomes
1. Describe the operations and benefits of cryptography
2. Able to understand necessary cryptography encoding
3. Able to use standard tools for penetration testing and compliance
4. Describe the basic need for cryptography and why it is essential for security.

CSEC 280. Introduction to Cyber Defense
3 Credits (3)
Introduction to the foundation of cryptography, principles behind cryptographic design, and cryptographic applications. Topics include encryption techniques, common cryptographic protocols and security functions.
Prerequisite(s)/Corequisite(s): MATH 1215. Restricted to Las Cruces campus only.

CSEC 283. Ethical Hacking and Penetration Testing
3 Credits (3)
Introduces students to the tools and software used in ethical hacking and penetration testing as well as introducing them to some of the vulnerabilities and exploits that exist within the cybersecurity field.
Prerequisite: ET 153 and ET 156.
Prerequisite/Corequisite: ET 283.
Learning Outcomes
1. Identify and describe common threats and vulnerabilities. Describe/demonstrate how to secure a network. Identify and demonstrate common tools used in ethical hacking/penetration testing. Identify and describe legal/ethical issues pertaining to ethical hacking.

CSEC 285. Introduction to Managing Information Security
3 Credits (3)
Managerial aspects of information security and assurance including access control models, information security governance, accountability metrics, legal responsibilities, and information security program assessment.
Prerequisite(s)/Corequisite(s): CTEC 290 or OECS 269. Restricted to Las Cruces campus only.

CSEC 286. Information Security Certification Preparation
4 Credits (4)
Covers the examination objectives and detailed preparation to prepare students to take the CompTia Security+ exam.
Prerequisite: ET 153, ET 156, and ET 283.
Learning Outcomes
1. Identify and describe common threats and vulnerabilities. Identify and demonstrate common security devices/programs. Describe/demonstrate how to secure a network.

CTEC 105. Introduction to Information Technology
3 Credits (3)
Examination of information systems and their impact on commerce, education, and personal activities. Utilization of productivity tools for communication, data analysis, information management, and decision-making. Restricted to Community Colleges campuses only.

CTEC 110. Software Applications for Technicians
1-3 Credits (1-3)
Introduction to software applications for communication, information management, and data analysis. Students will utilize presentation, word processing, spreadsheet, database, and utility software to simulate real-world activities experienced by help desk technicians. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.

CTEC 115. TOPICS IN IT
1-3 Credits (1-3)
Topics to be announced in the Schedule of Classes. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.

CTEC 120. IT Infrastructure Support I
1-3 Credits (1-3)
Introduction to most common types of PC configurations, installations, and failures. This course will explore troubleshooting skills for maintaining and repairing common hardware and software related problems. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.

CTEC 122. IT Infrastructure Support II
1-3 Credits (1-3)
Continuation of CTEC 120. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): CTEC 120 or OECS 185.

CTEC 127. Introduction to Internet of Things
1-3 Credits (1-3)
Exploration of the importance of IoT in society, components of typical IoT devices and future trends. IoT design considerations, constraints, interfacing and key components of networking will also be covered. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.

CTEC 130. Linux Workstation
1-3 Credits (1-3)
Installation, configuration, and maintenance of the Linux operating system. Covers file organization, user management, and system security. Addresses general procedures for working with and modifying the operating system. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.

CTEC 135. Windows Workstation
1-3 Credits (1-3)
Installation, configuration, and maintenance of the Windows operating system. Covers file organization, user management, and system security. Addresses general procedures for working with and modifying the operating system. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.
CTEC 140. Introduction to Database Design
1-3 Credits (1-3)
Introduction to basic relational database concepts including terminology, tables, queries, forms, and reports. The course teaches data modeling concepts, building Entity Relationship Diagrams (ERDs), mapping ERDs, and use of data management system applications. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.

Prerequisite(s): CTEC 140 or OECS 220.

CTEC 145. Introduction to Database Management
1-3 Credits (1-3)
Use of SQL to analyze complex business scenarios as well as to design and create, and manage databases. Course includes exposure to Application Express (APEX) to provide practical, hands-on activities. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.

CTEC 1450. Mobile Application Programming
1-3 Credits (1-3)
Introduction to elements of mobile application coding including concepts, design strategies, and tools needed to create, test, and deploy applications for mobile devices. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.

Prerequisite(s)/Corequisite(s): CTEC 140 or OECS 220.

CTEC 152. JAVA Programming
1-3 Credits (1-3)
Introduction to concepts of programming in the Java language. Topics include data types, control structures, functions, arrays, files, and the mechanics of running, testing, and debugging code. This is a hands-on course that does not require students to have prior programming experience. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.

CTEC 154. C++ Programming
1-3 Credits (1-3)
Introduction to concepts of programming in the C++ language. Topics include data types, control structures, functions, arrays, files, and the mechanics of running, testing, and debugging code. This is a hands-on course that does not require students to have prior programming experience. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.

CTEC 156. Python Programming
1-3 Credits (1-3)
Introduction to concepts of programming in the Python language. Topics include data types, control structures, functions, arrays, files, and the mechanics of running, testing, and debugging code. This is a hands-on course that does not require students to have prior programming experience. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.

CTEC 158. Visual Basic Programming
1-3 Credits (1-3)
Introduction to concepts of programming in the Visual Basic language. Topics include data types, control structures, functions, arrays, files, and the mechanics of running, testing, and debugging code. This is a hands-on course that does not require students to have prior programming experience. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.

CTEC 180. Introduction to Networking
3-4 Credits (3-4)
This course introduces the architecture, structure, functions, components, and models of the Internet and computer networks. Course includes the principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations to build simple LANs, perform basic configurations for routers and switches. May be repeated up to 8 credits. Restricted to Las Cruces campus only.

CTEC 185. Routing and Switching Essentials
3-4 Credits (3-4)
This course covers the architecture, components, and operations of routers and switches in a small network. Students learn how to configure routers and switches for basic functionality. Course demonstrates how to configure and troubleshoot routers and switches to resolve common issues with RIPv1, RIPv2, single area and multi-area OSPF, virtual LANs, and inter-VLAN routing in both IPv4 and IPv6 networks. May be repeated up to 8 credits.

Prerequisite(s)/Corequisite(s): CTEC 180 or OECS 261. Restricted to Las Cruces campus only.

CTEC 220. Internship
1-3 Credits (1-3)
Work experience, directly related to a student's field of study, that provides an opportunity to explore career options while experiencing hands-on application, knowledge, and theory learned in the classroom. May be repeated up to 6 credits. Consent of Instructor required. Graded: S/U Grading (S/U, Audit). Restricted to Las Cruces campus only.

Prerequisite(s): (CTEC 120 or OECS 185) AND (CTEC 130 or OECS 204), AND (CTEC 180 or OECS 261).

CTEC 230. Introduction to Linux Server Administration
1-3 Credits (1-3)
This course addresses the implementation and support needs of IT professionals that are planning to deploy and support Linux Server(s). It provides in-depth, hands-on training for IT professionals responsible for the planning, implementation, management, and support of Linux Server operating system(s). May be repeated up to 6 credits.

Prerequisite(s)/Corequisite(s): CTEC 130 or OECS 204. Restricted to Community Colleges campuses only.

CTEC 235. Introduction to Windows Server Administration
3 Credits (3)
This course addresses the implementation and support needs of IT professionals that are planning to deploy and support Windows Server(s). It provides in-depth, hands-on training for IT professionals responsible for the planning, implementation, management, and support of Windows Server operating system(s).

Prerequisite(s)/Corequisite(s): CTEC 135 or OECS 207. Restricted to Las Cruces campus only.

CTEC 240. Fundamentals of Database Management
3 Credits (3)
Exploration of database management using SQL and PL/SQL to extend and automate SQL in administering database systems. Students will create and work with projects which challenge them to enhance the SQL of a database solution for a business or organization. May be repeated up to 6 credits. Restricted to Las Cruces campus only.

Prerequisite(s): CTEC 145.
CTEC 245. Fundamentals of Cloud Based Data Systems
1-3 Credits (1-3)
Introduction to the techniques and tools required to develop database driven web applications. The course teaches students how to design, develop, and deploy efficient and responsive, database-driven web applications using Oracle Application Express. May be repeated up to 6 credits.
Prerequisite(s)/Corequisite(s): CTEC 240. Restricted to Community Colleges campuses only.

CTEC 255. Special Topics
1-3 Credits (1-3)
Topics to be announced in the Schedule of Classes. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.

CTEC 280. Scaling Networks
3-4 Credits (3-4)
This course covers the architecture, components, and operations of routers and switches in WLANs and complex networks. Students learn how to configure routers and switches for advanced functionality and to resolve common issues with OSPF, EIGRP, and STP in both IPv4 and IPv6 networks. May be repeated up to 8 credits.
Prerequisite(s)/Corequisite(s): CTEC 185 or OECS 262. Restricted to Las Cruces campus only.
Learning Outcomes
1. Configure and troubleshoot DHCP and DNS operations for IPv4 and IPv6
2. Describe the operations and benefits of the Spanning Tree Protocol (STP)
3. Configure and troubleshoot STP operations
4. Describe the operations and benefits of link aggregation and Cisco VLAN Trunk Protocol (VTP)
5. Configure and troubleshoot basic operations of routers in a complex routed network for IPv4 and IPv6
6. Configure and troubleshoot advanced operations of routers and implement RIP OSPF, and EIGRP routing protocols for IPv4 and IPv6
7. Manage Cisco IOS® Software licensing and configuration files

CTEC 285. Connecting Networks
3-4 Credits (3-4)
This course covers WAN technologies and network services required by converged applications in a complex network. Students learn about selection criteria of network devices, VLANs and WAN technologies to meet network requirements to resolve common issues with data link protocols. May be repeated up to 8 credits.
Prerequisite(s)/Corequisite(s): CTEC 280 or OECS 263. Restricted to Las Cruces campus only.

CTEC 290. Network Security
3-4 Credits (3-4)
Fundamentals of design and implementation of network security solutions that will reduce the risk of system vulnerability. Topics include: threats, attacks, vulnerabilities, tools, architecture, design, access management, risk management, and cryptography. May be repeated up to 8 credits.
Prerequisite(s)/Corequisite(s): (CTEC 120 or OECS 185), AND (CTEC 180 or OECS 261). Restricted to Las Cruces campus only.

CTEC 299. Independent Study
1-4 Credits (1-4)
Specific subject to be determined based upon student need. May be repeated up to 8 credits. Restricted to Community Colleges campuses only.
DANC 2990. Fashion Practicum
1-3 Credits (1-3)
Applied field experience in the related areas of apparel design, fashion merchandising, and textile science. May be repeated up to 3 credits. Restricted to: CTFM majors. Restricted to Las Cruces campus only.
Learning Outcomes
1. Gain hands-on knowledge of the fashion industry.
2. Demonstrate the ability to analyze the practices of management, as observed in the industry.
3. Demonstrate an attitude that is appropriate for a prospective manager in the industry.
4. Demonstrate the understanding of, and the ability to use research and problem solving methods to develop, analyze, and present a critical incident analysis.

DANC 1130. Ballet I
1 Credit (1)
This course is the beginning level of ballet technique. Students learn the basic fundamentally and performance skills of ballet techniques, which may include flexibility, strength, body alignment, coordination, range of motion, vocabulary, and musicality. May be repeated for a maximum of 2 credits.
Learning Outcomes
1. Apply fundamental movements of ballet techniques.
2. Enhance flexibility, strength, body alignment, coordination, balance, kinesthetic awareness, range of motion, and musicality.
3. Employ basic theories of classical ballet placement and proper alignment.
4. Develop basic ballet terminology, variations in timing and changes of facing, and barre and center combinations.

DANC 1135. Introduction to Argentine Tango
1 Credit (1)
Introduction to ballroom dance for non dance majors. Students will learn basic ballroom technique and partnering work. May be repeated up to 2 credits. Restricted to Las Cruces campus only.
Learning Outcomes
1. Learn to dance Figures 1-7 in 3 American Style Ballroom dances
2. Develop rhythmic accuracy in movement
3. Develop the skills to adapt to a variety of dance partners
4. Develop adequate social and recreational dance skills
5. Develop proper carriage, poise, and grace that pertain to Ballroom dance
6. Learn to recognize Ballroom music and its application for the appropriate dances
7. Understand different possibilities for dance variations and their applications to a variety of Ballroom dances
8. Understand and appreciate the process of creating original patterns and variations
9. Expand his/her knowledge of dance forms through attending two (2) NMSU Dance Department performances and writing a critique on one of the performances
10. Enjoy the process

DANC 1140. Flamenco I
1 Credit (1)
This course introduces the student to the art of flamenco and its cultural features and significance. Students will learn the fundamentals of this art form and introductory techniques and skills, which may include handwork, footwork, postures, and specific dances. May be repeated for a maximum of 2 credits.
Learning Outcomes
1. Demonstrate a basic level of competency in the principles of alignment, anatomy, coordination, mobility, stability, and stamina.
2. Demonstrate fundamental flamenco techniques relative to spatial awareness, rhythm, phrasing, and sequencing.
3. Demonstrate competency with basic flamenco movement vocabulary.
4. Perform a variety of flamenco dances, poses, steps, hand movements, and combinations.
DANC 1150. Modern Dance I
1 Credit (1)
Modern Dance techniques and styles. Students are introduced to proper warm-up techniques, body alignment, control and flexibility. Students work with various rhythms and combinations of movements. The course emphasizes dance technique and creative experience. The history, terminology and philosophy of Modern Dance are also discussed. May be repeated for a maximum of 2 credits.

Learning Outcomes
1. Use a more developed sense of muscle control and strength, stretch and balance, coordination.
2. Demonstrate and verbalize an increased awareness of Modern Dance techniques
3. Execute dance phrases, combining several movements and in more than one rhythm.
4. Demonstrate an increased awareness of musicality while dancing and use Modern Dance Techniques creatively.

DANC 1155. Introduction to Hip-Hop Dance
1 Credit (1)
This course provides an atmosphere of safety and encouragement in which students can express creativity and individuality through hip-hop dance. No previous dance experience required. May be repeated up to 4 credits. Restricted to Las Cruces campus only.

Learning Outcomes
1. Demonstrate appropriate strength, stamina, balance, body alignment, and flexibility
2. Demonstrate creativity, independent thinking and self-motivation as these pertain to hip-hop dance
3. Apply appropriate integration of cognitive and kinesthetic skills
4. Execute sage and creative hip-hop dance movements

DANC 1185. Beginning Country Western Dance
1 Credit (1)
Beginning Country Western dance, including Country Western two-step, nightclub two-step, polka, and Country Western line dance. May be repeated up to 2 credits. Restricted to Las Cruces campus only.

Learning Outcomes
1. Learn to dance figures in Country Western Dances.
2. Develop a "style."
3. Gain deeper understanding of the Elements of Dance Technique
4. Develop rhythmic accuracy in movement, ability to dance on time discover phrasing
5. Further lead follow skills that will enable you to dance at more advanced levels
6. Learn practice performance dance skills
7. Understand and appreciate the process of creating original amalgamations
8. Expand your knowledge of other dance forms by attending required (2) NMSU Dance Department performances and writing a critique of one (1) performance
9. Enjoy the process!

DANC 1220. Introduction Latin Social Dance
1 Credit (1)
Introduction to Latin social dance for non dance majors. Students will learn basic Latin dance technique and partnering work. May be repeated up to 2 credits. Restricted to Las Cruces campus only.

Learning Outcomes
1. Learn to dance 4 of the American Rhythm Style dances.
2. Develop rhythmic accuracy in movement.
3. Develop the skills to adapt to a variety of dance partners.
4. Develop adequate social and recreational dance skills.
5. Develop Cuban Motion, hip swing, proper carriage, poise, and grace that pertain to Rhythm dance.
6. Learn to recognize Latin/Swing music and its application for the appropriate dances.
7. Understand different possibilities for dance variations and their applications to a variety of Latin dances.
8. Understand and appreciate the process of creating original patterns and variations.
9. Expand his/her knowledge of dance forms through attending two (2) NMSU Dance Department performances and writing a critique on ONE performance.

DANC 1235. Intro to West Coast Sw
1 Credit (1)
Students will learn to dance the smooth style of Swing. The West Coast Swing may be danced to ANY style of music that has a beat (Country, R&B, Hip Hop, Disco, House). Also featured is the Hustle (fast paced and exhilarating). May be repeated up to 4 credits. Restricted to Las Cruces campus only.

Learning Outcomes
1. Learn to dance figures from both West Coast Swing and Hustle
2. Develop a "style" in both West Coast Swing and Hustle.
3. Gain deeper understanding of the Elements of Dance Technique
4. Develop rhythmic accuracy in movement, ability to dance on time discover phrasing
5. Further lead follow skills that will enable you to dance at more advanced levels
6. Learn practice performance dance skills
7. Understand and appreciate the process of creating original amalgamations
8. Expand your knowledge of other dance forms by attending required (2) NMSU Dance Department performances and writing a critique of one (1) performance
9. Enjoy the process!
DANC 1460. Dance for Musical Theater I  
1 Credit (1)  
This course provides students with an understanding of the Tap and Jazz Dance technique for use in Musical Theater and other performance genres at the beginning level. This course is designed for students to gain knowledge and understanding of Tap and Jazz Dance as art forms. May be repeated up to 2 credits.  
Learning Outcomes  
1. An understanding of traditional styles of dance used for musical theater.  
2. An understanding of anatomy, kinesiology, and development of movement principles  
3. Improvement of muscular strength, flexibility, and elasticity  
4. An understanding of motion awareness and movement vocabulary

DANC 2114. Dance Sport I  
1 Credit (1)  
Performance-based, team formation dance in a variety of Latin and ballroom dances. May be repeated up to 4 credits. Consent of Instructor required. Restricted to Las Cruces campus only.  
Learning Outcomes  
1. Practice a variety of Ballroom and Latin dances to be expressed socially, competitively and on stage Adapt and communicate with a variety of dance partners Learn skills for successful partnership Practice advanced level technique in all styles of DanceSport Develop awareness of “what is good dancing” Create original choreography for both stage and competition Self-assess - learn to be your own best teacher Self-coach - learn to coach self through four stages of development Develop musicality skills, including rhythmic accuracy and timing 1 Work as a team to make sure that no one is left behind while furthering your leadership abilities 1 Promote DanceSport in the community and in the world as a healthy and fun lifestyle alternative 1 Develop valuable life skills such as enrollment, registration teamwork 1 Enhance cognitive thinking as described by Robert J. Sternberg’s triarchic theory of intelligence 1 Learn to act and perform as a “professional” dancer 1 Produce creative spring dance concert

DANC 2130. Ballet II  
2 Credits (2)  
Intermediate level of ballet technique; Introduction of more advanced Ballet vocabulary at barre/center work; increase flexibility, strength, body alignment, and coordination for practice of steps/combinations with variations in timing and changes of facing. Restricted to Las Cruces campus only.  
Learning Outcomes  
1. A successful student will be able to understand and execute with accuracy all the steps presented on the take home quizzes and are encouraged and expected to attend at least two semesters of each level in order to advance to the next level of ballet technique

DANC 2130L. Ballet Technique II Lab  
1 Credit (1)  
This course is designed for the acquisition of intermediate level ballet technique and skill development. May be repeated up to 2 credits. Consent of Instructor required. Restricted to Las Cruces campus only.  
Learning Outcomes  
1. An increased level of technical proficiency in ballet  
2. A greater understanding and knowledge of ballet vocabulary  
3. Increased flexibility and range of motion  
4. Increased strength  
5. Increased awareness of body alignment

DANC 2140. Flamenco II  
2 Credits (2)  
The structure of flamenco through choreographies that represent the basic flamenco dance forms: Fandangos de Huelva, Alegrias, Solea “por” Bulerias, and Tientos/Tangos. The course will also cover intermediate flamenco technique including footwork, palmas as (hand claps), braceo (movement of the arms), and floreo (movement of the hands). May be repeated up to 8 credits.  
Prerequisite: DANC 1140.  
Learning Outcomes  
1. Demonstrate the ability to dance a short Fandangos de Huelva  
2. Demonstrate the ability to dance a short Alegrias or Solea por Bulerias  
3. Demonstrate the ability to dance a short Tientos /Tangos  
4. Demonstrate an intermediate level of Pal mas, Brazeo, Floreo, Taconeo

DANC 2140L. Flamenco Dance II Lab  
1 Credit (1)  
This course is designed for the acquisition of intermediate level Flamenco dance technique and skill development. May be repeated up to 2 credits. Consent of Instructor required. Restricted to Las Cruces campus only.  
Prerequisite(s): DANC 1140 or instructor permission.  
Learning Outcomes  
1. Intermediate to advanced understanding of musical structures, enabling the identify of 12-count from 8 count rhythms.  
2. An ability to present the styles of Sevillanas and Tangos as well as other Flamenco Spanish folk dances popular in Spain today.  
3. An ability to utilize and present the arm work (brazeo), hand work (floreo) and hand clapping (palmas) from the various styles (palos) being explored.  
4. An ability to build the footwork (taconeo), marking (marcaje) and turns (vueltas) that dancers create in response to the song (cante) and guitar tones.  
5. An introductory ability to use castanets as the rhythmic accompaniment of their dance performance.
DANC 2142. Classical Spanish II  
2 Credits (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. May be repeated up to 8 credits. Consent of Instructor required. Restricted to Las Cruces campus only.  
Prerequisite(s): DANC 1140.  
Learning Outcomes  
1. Knowledge of basic Classical Spanish vocabulary  
2. Understanding of the basic differences between Classical Spanish dance and Ballet techniques  
3. Increased coordination and rhythmic accuracy  
4. Knowledge of the onomatopoeia of castanets  
5. Ability to perform a Classical Spanish Dance piece with castanets

DANC 2142L. Spanish Dance II Lab  
1 Credit (1P)  
This course is designed for the acquisition of intermediate level Spanish dance technique and skill development. May be repeated up to 2 credits. Restricted to Las Cruces campus only.  
Learning Outcomes  
1. Knowledge of basic Classical Spanish vocabulary  
2. Understanding of the basic differences between Classical Spanish dance and Ballet techniques  
3. Increased coordination and rhythmic accuracy  
4. Knowledge of the onomatopoeia of castanets  
5. Ability to perform a Classical Spanish Dance piece with castanets

DANC 2150. Modern Dance II  
2 Credits (2)  
Modern II is designed to further the student’s abilities in modern dance technique, to enhance efficient use of weight and momentum, to release held patterns in the body’s mechanics, to enrich spatial awareness, and to begin work on performance techniques.  
Learning Outcomes  
1. Improve accuracy in alignment and shape  
2. Improve precision in space, in timing and rhythm, and in focus/intent  
3. Learn combinations and movement dynamics quickly  
4. Begin to integrate performance techniques while working in the classroom setting  
5. Use a concentrated attitude and an open, creative mind to approach the work in an artistic manner unique to your abilities  
6. Listen, see and apply all the information given within one class period and over the semester  
7. Self-awareness and mindfulness: how much space do you take in the class and why?  
8. How aware are you of those around you, and those you are dancing with?  
9. Release of weight to create controlled momentum  
10. Locating center and moving from there

DANC 2150L. Modern Dance Technique II Lab  
1 Credit (1P)  
This course is designed for the acquisition of intermediate level modern dance technique and skill development. May be repeated up to 2 credits. Consent of Instructor required. Restricted to Las Cruces campus only.  
Learning Outcomes  
1. Replication of movement phrases  
2. Understanding of the anatomy and kinesiology principles of movement  
3. Movement initiation and movement motivation  
4. Static and dynamic balance  
5. Modern dance movement vocabulary  
6. Temporal, spatial, effort and motion awareness  
7. Artistic expression by way of movement intent, imagery, and interpretation

DANC 2155. Hip Hop Dance Ensemble I  
1 Credit (1)  
Performance-based instruction for students pursuing a career in hip hop dance. Instruction includes dance repertory and choreography for stage, commercial/industry, and competitive dance areas. May be repeated up to 4 credits. Consent of Instructor required.  
Learning Outcomes  
1. The artistry of the dancer  
2. The art and interpretation of the choreography  
3. An understanding of various hip-hop isolations, footwork, and basic dance movement vocabulary  
4. Increased awareness of stage presence and projection for different avenues of hip hop such as stage, commercial, and competition  
5. An understanding of behind the scene workings of a dance performance  
6. How to critically reflect

DANC 2157. Intermediate Hip-Hop Dance  
2 Credits (2)  
This course is for students who have experience in Hip-Hop dance. The movement material will cover West coast and Southern styles with the inclusion of the history and evolution of Hip-Hop dance. May be repeated up to 8 credits. Restricted to Las Cruces campus only.  
Learning Outcomes  
1. How he/she has developed his/her hip-hop personality  
2. How he/she has improved confidence through this style of dance  
3. How he/she has integrated core initiation with other body parts  
4. How he/she uses space, time, effort and relationship to express movement ideas  
5. How he/she has improved muscular control and strength  
6. How he/she has physically embodied Hip-Hop movement vocabulary
DANC 2250. Contemporary Dance Ensemble I
1 Credit (1)
Performance-based instruction for students pursuing a career in contemporary dance. Instruction includes contemporary dance repertory and choreography for stage, outdoor arenas, and site-specific areas. May be repeated up to 4 credits. Consent of Instructor required. Restricted to Las Cruces campus only.

Learning Outcomes
1. (Performance) An understanding of the artistry of the dancer
2. (Performance) An understanding of the art and interpretation of choreography
3. (Performance) An improvement of movement performance skill
4. (Performance) An understanding of various dance movement vocabulary
5. (Performance) An increased awareness of stage presence and projection
6. (Performance) An understanding of technical stage production
7. (Production) An understanding of costume design and construction
8. (Production) An understanding of behind the scene workings of a dance performance

DANC 2251. Spanish Dance Ensembles I
1 Credit (1)
Performance-based instruction for students pursuing a career in dance with an emphasis in Spanish Dance. Instruction includes dance repertory and choreography for stage, outdoor arenas, and site-specific areas. May be repeated up to 4 credits. Consent of Instructor required. Restricted to Las Cruces campus only.

Learning Outcomes
1. An understanding of the artistry of the dancer
2. An understanding of the art and interpretation of choreography
3. An improvement of movement performance skill
4. An understanding of various dance movement vocabulary
5. An increased awareness of stage presence and projection
6. An understanding of technical stage production
7. An understanding of behind the scene workings of a dance performance
8. An understanding of the marketing and promotional aspects of performance
9. An understanding of costume design and construction

DANC 2265. Principles of Choreography I
3 Credits (3)
Solo dance choreography technique. The course must be passed with a grade of C- or higher. Offered only in Fall semester during even years.

Learning Outcomes
1. ability to create original choreographic material for solo work (289) or group work (389), understanding of how to create a movement theme/motif, and ability to take improvisational material and turn it into choreography

DANC 2270. Improvisation I
2 Credits (2)
Development of movement improvisational skills with complex examination of improvisational structures. Offered only in Fall semester during odd years.

Learning Outcomes
1. An understanding of the movement potential of the body
2. An understanding of the principles of motion
3. An awareness and skill of movement motivation
4. An improvement of static and dynamic balance
5. An understanding of temporal, spatial, effort and motion awareness
6. An understanding of group dynamics
7. An awareness of other media that can motivate movement

DANC 2270. Improvisation I
2 Credits (2)
Bronze level American Rhythm patterns, techniques, and partnering with emphasis on elements of dance. May be repeated up to 6 credits.

Learning Outcomes
1. Learn to dance the Bronze DIVIDA Manual in American Rhythm
2. Develop Bronze level dance technique
3. Gain deeper understanding of the Elements of Dance
4. Develop rhythmic accuracy in movement, ability to dance on time discover phrasing
5. Further develop lead follow skills that will enable you to dance at more advanced levels

DANC 2270. Improvisation I
2 Credits (2)
Modern style of Latin dance that is danced around the globe and is featured in the World DanceSport Championships. Students will learn the Bronze Level figures and techniques in four (4) International Style dances: Rumba, Cha Cha, Samba & Jive. May be repeated up to 8 credits. Restricted to Las Cruces campus only.

Learning Outcomes
1. Learn to dance the Bronze DIVIDA Material for the International Latin Syllabus
2. Develop Bronze level dance technique
3. Gain deeper understanding of the Elements of Dance
4. Develop rhythmic accuracy in movement, ability to dance on time discover phrasing
5. Further develop lead follow skills that will enable you to dance at more advanced levels
DANC 2321. Bronze International Standard
2 Credits (2)
This is the style of Ballroom dance that is performed around the globe and is featured in the World DanceSport Championships. Learn the Bronze Level figures and techniques in five (5) International Style dances: Waltz, Tango, Viennese Waltz, Fox trot & Quickstep. Students will focus on understanding technical elements of dance, memorizing and performing routines. May be repeated up to 4 credits.

Learning Outcomes
1. Learn to dance the Bronze DIVIDA Manual in International Standard Development Bronze level dance technique Gain deeper understanding of the Elements of Dance Develop Smooth accuracy in movement, ability to dance on time discover phrasing Further develop lead follow shifts that will enable you to dance at more advanced levels

DANC 2460. Dance for Musical Theater II
2 Credits (2)
This course provides students with an understanding of the Tap and Jazz Dance technique for use in Musical Theater and other performance genres at the intermediate level. This course is designed for students to gain knowledge and understanding of Tap and Jazz Dance as art forms. May be repeated up to 4 credits. Consent of Instructor required.
Prerequisite(s): DANC 1460 or consent of instructor.

Learning Outcomes
1. An understanding of traditional styles of dance used for musical theater.
2. An understanding of anatomy, kinesiology, and development of movement principles
3. Improvement of muscular strength, flexibility, and elasticity
4. An understanding of motion awareness and movement vocabulary

DAS-DENTAL ASSISTING (DAS)

DAS 101. Introduction to Dental Assisting
2 Credits (2)
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 only.

DAS 111. Bio-Dental Science
4 Credits (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.
Corequisite(s): DAS 113, DAS 115, and DAS 117.
Prerequisite(s)/Corequisite(s): PSYC 1110G, PHLS 1110G, and NUTR 2110. Prerequisite(s): ENGL 1110G, BIOL 1130, and (COMM 1130G or COMM 1115G). Restricted to: OEDA majors. Restricted to Alamogordo, Carlsbad and Dona Ana campuses.

DAS 113. Dental Assisting I
4 Credits (2+6P)
Introduction to chair side assisting procedures, instrumentation, infection control, equipment safety and maintenance, dental office emergencies, and management of pain and anxieties.
Corequisite(s): DAS 111, DAS 115, and DAS 117.
Prerequisite(s)/Corequisite(s): PSYC 1110G, PHLS 1110G, and NUTR 2110. Prerequisite(s): ENGL 1110G, BIOL 1130, and (COMM 1130G or COMM 1115G). Restricted to: OEDA majors. Restricted to Alamogordo, Carlsbad and Dona Ana campuses.

DAS 115. Dental Radiology
3 Credits (2+3P)
Corequisite(s): DAS 111, DAS 113, and DAS 117.
Prerequisite(s)/Corequisite(s): PSYC 1110G, PHLS 1110G, and NUTR 2110. Prerequisite(s): ENGL 1110G, BIOL 1130, and (COMM 1130G or COMM 1115G). Restricted to: OEDA majors. Restricted to Alamogordo, Carlsbad and Dona Ana campuses.

DAS 127. Dental Office Management
2 Credits (2)
This course is the clinical component of the program that combines general practice and experiences in the workplace. Seminar topics focus on the practical experiences and critique of performance. Restricted to Alamogordo, Carlsbad and Dona Ana campuses.
Corequisite(s): DAS 111, DAS 113, DAS 115, and DAS 117.

DAS 129. Preventive Dentistry
2 Credits (2)
Prevention of dental diseases, oral hygiene instruction, fluoride, community dental health, and nutrition. Development, implementation and evaluation of a community dental health project. Restricted to Alamogordo, Carlsbad and Dona Ana campuses.
Corequisite(s): DAS 111, DAS 113, DAS 115, and DAS 117.
DAS 130. Dental Assisting II
4 Credits (2+6P)
Continuation of chair side assisting skills and techniques with a major emphasis on four-handed dentistry. This capstone course includes specialties within dentistry and expanded chair side functions. Restricted to Alamogordo, Carlsbad and Dona Ana campuses.
Prerequisite(s): DAS 111, DAS 113, DAS 115, DAS 117, DAS 123, DAS 125, DAS 127, and DAS 129.

DAS 131. Dental Office Management I
3 Credits (3)
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.
Prerequisite(s)/Corequisite(s): DAS 101, AHS 120, and AHS 202.
Prerequisite(s): ENGL 1110G. Restricted to Alamogordo, Carlsbad and Dona Ana campuses.

DAS 133. Dental Office Management II
3 Credits (3)
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.
Prerequisite(s)/Corequisite(s): AHS 202. Prerequisite(s): ENGL 1110G, DAS 101, and AHS 120. Restricted to Alamogordo, Carlsbad and Dona Ana campuses.

DAS 155. Special Topics
1-6 Credits
Specific subjects to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits.
Prerequisite: consent of instructor.

DHYG - DENTAL HYGIENE/HYGIENIST (DHYG)

DHYG 110. Preclinical Dental Hygiene
3 Credits (3)
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. May be repeated up to 3 credits. Restricted to: DHYG majors. Restricted to Community Colleges campuses only.

DHYG 112. Preclinical Dental Hygiene Lab
3 Credits (12P)
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. May be repeated up to 3 credits. Restricted to: DHYG majors. Restricted to Community Colleges campuses only.

DHYG 114. Oral Histology and Embryology
2 Credits (2)
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. May be repeated up to 2 credits. Restricted to: DHYG majors. Restricted to Community Colleges campuses only.

DHYG 116. Head and Neck Anatomy
3 Credits (3)
Comprehensive study of the anatomy of the head and neck regions, including skeletal, nervous, circulatory, lymphatic, and muscular systems. May be repeated up to 3 credits. Restricted to: DHYG majors. Restricted to Community Colleges campuses only.

DHYG 117. Dental Anatomy
2 Credits (2+1P)
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. May be repeated up to 2 credits. Restricted to: DHYG majors. Restricted to Community Colleges campuses only.

DHYG 118. Dental Radiology
3 Credits (3+4P)
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. May be repeated up to 3 credits. Restricted to: DHYG majors. Restricted to Community Colleges campuses only.

DHYG 120. Dental Hygiene Theory I
3 Credits (3)
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. May be repeated up to 3 credits. Restricted to: DHYG majors. Restricted to Community Colleges campuses only.

DHYG 122. Clinical Dental Hygiene I
3 Credits (16P)
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. May be repeated up to 3 credits. Restricted to: DHYG majors. Restricted to Community Colleges campuses only.

DHYG 124. General and Oral Pathology
3 Credits (3)
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. May be repeated up to 3 credits. Restricted to: DHYG majors. Restricted to Community Colleges campuses only.
DHYG 126. Periodontology
3 Credits (3)
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. May be repeated up to 3 credits. Restricted to: DHYG majors. Restricted to Community Colleges campuses only.

DHYG 132. Clinical Dental Hygiene II
2 Credits (2)
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. May be repeated up to 2 credits. Restricted to: DHYG majors. Restricted to Community Colleges campuses only.

Prerequisite(s): "C" or above in DHYG 120, DHYG 122, DHYG 124, DHYG 126, DHYG 134.

Corequisite(s): DHYG 218.

DHYG 134. Dental Materials
3 Credits (2+2P)
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. May be repeated up to 3 credits. Restricted to: DHYG majors. Restricted to Community Colleges campuses only.

DHYG 210. Dental Hygiene Theory III
2 Credits (2)
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. May be repeated up to 2 credits. Restricted to: DHYG majors. Restricted to Community Colleges campuses only.

DHYG 212. Clinical Dental Hygiene III
4 Credits (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. May be repeated up to 4 credits. Restricted to: DHYG majors. Restricted to Community Colleges campuses only.

DHYG 214. Dental Pharmacology
3 Credits (3)
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. May be repeated up to 3 credits. Restricted to: DHYG majors. Restricted to Community Colleges campuses only.

DHYG 215. Medical and Dental Emergencies
2 Credits (2)
This course provides an overview of medical and dental emergencies encountered most frequently in the dental setting. It also provides the student with knowledge and techniques on how to address those emergencies should they occur. Restricted to: DHYG majors. Restricted to Community Colleges campuses only.

DHYG 217. Research Methodology
2 Credits (2)
This course provides an introduction to the principles and application of research methods in social, behavioral and medical research. Restricted to: DHYG majors. Restricted to Community Colleges campuses only.

DHYG 218. Pain and Anxiety Management
2 Credits (2)
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. May be repeated up to 2 credits. Restricted to: DHYG majors. Restricted to Community Colleges campuses only.

DHYG 219. Pain and Anxiety Management Clinical
1 Credit (4P)
Clinical application of concepts learned in DHYG 218. Emphasis on the administration and techniques of local anesthesia and monitoring nitrous oxide. Restricted to: DHYG majors. Restricted to Community Colleges campuses only.

Prerequisite(s): DHYG 218.

DHYG 220. Dental Hygiene Theory IV
3 Credits (3)
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. May be repeated up to 3 credits. Restricted to: DHYG majors. Restricted to Community Colleges campuses only.

DHYG 222. Clinical Dental Hygiene IV
4 Credits (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. May be repeated up to 4 credits. Restricted to: DHYG majors. Restricted to Community Colleges campuses only.
DHYG 224. Principles of Practice  
2 Credits (2)
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. May be repeated up to 2 credits. Restricted to: DHYG majors. Restricted to Community Colleges campuses only.

DHYG 225. Dental Public Health Education  
3 Credits (3)
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. Restricted to Community Colleges campuses only.

DHYG 255. Special Topics in Dental Hygiene  
1-6 Credits (1-6)
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.

**DMS-DIAGNOSTIC MED SONOGRAPHY (DMS)**

DMS 100. Introduction to Clinical Practicum  
1 Credit (1)
Introduction to working in the medical environment. Includes preparation for clinical internship and observation hours in the ultrasound department. Restricted to: DMS majors. Restricted to Community Colleges campuses only.

DMS 101. Introduction Sonography/Patient Care  
2 Credits (2)
Introduction to the careers in sonography, terminology, medical ethics, scanning planes, applications of ultrasound, professional standards and patient care. May be repeated up to 2 credits. Restricted to: DMS majors. Restricted to Community Colleges campuses only.

DMS 116. Vascular Technology I  
2 Credits (2)
Review of basic ultrasound physics and principles, peripheral vascular anatomy, hemodynamics, Doppler evaluation, peripheral vascular scanning techniques, physiologic testing and the carotid arteries and the peripheral vascular system. Restricted to: DMS majors. Restricted to Community Colleges campuses only.

DMS 116 L. Vascular Technology I Lab  
1 Credit (2P)
Includes protocol development, scanning techniques, recognition of anatomical relationships and the normal ultrasound appearance of the carotid arteries and peripheral vasculature utilizing real-time sonographic equipment including Doppler. Restricted to: DMS majors. Restricted to Community Colleges campuses only.

DMS 130. Pelvic Sonography  
1 Credit (1)
Includes the anatomy, sectional anatomy and normal physiology of the pelvic structures; including the uterus, ovaries, prostate, pelvic muscles, lower GI, appendix and vessels as well as scanning techniques, sonographic appearance and Doppler evaluation of the pelvis. Restricted to: DMS majors. Restricted to Community Colleges campuses only.

DMS 130 L. Pelvic Sonography Lab  
1 Credit (2P)
Includes protocol development, scanning techniques, recognition of anatomical relationships and the normal ultrasound appearance of the pelvic structures including the uterus, ovaries, prostate, lower gastrointestinal system, appendix and pelvic muscles utilizing real-time sonographic equipment including Doppler. Restricted to: DMS majors. Restricted to Community Colleges campuses only.

DMS 140. Abdominal Sonography  
3 Credits (3)
Includes the anatomy, sectional anatomy and normal physiology of prevertebral vessels, liver, biliary system, pancreas, upper gastrointestinal system, kidneys, adrenals, and spleen as well as scanning techniques, sonographic appearance and Doppler evaluation of the deep abdominal organs. Restricted to: DMS majors. Restricted to Community Colleges campuses only.

DMS 140 L. Abdominal Sonography Lab  
1 Credit (4P)
Includes protocol development, scanning techniques, recognition of anatomical relationships and the normal ultrasound appearance of prevertebral vessels, liver, biliary system, pancreas, upper gastrointestinal system, kidneys and spleen utilizing real-time sonographic equipment including Doppler. Restricted to: DMS majors. Restricted to Community Colleges campuses only.

DMS 150. Sonographic Principles and Instrumentation I  
1 Credit (1)
Includes the fundamental properties and mathematical relationships between variables of wave parameters, acoustic variables, attenuation, pulsed wave operation, transducers, system operation, Doppler, and artifacts utilizing real-time sonographic equipment. Restricted to: DMS majors. Restricted to Community Colleges campuses only.

DMS 160. 1st Trimester Obstetric Sonography  
1 Credit (1)
Includes the embryology, anatomy, sectional anatomy, normal physiology, biometrics, assessment, and sonographic appearance of the 1st trimester fetus, placenta, uterus and adnexa as well as scanning techniques according to recognized protocols. Restricted to: DMS majors. Restricted to Community Colleges campuses only.

DMS 165. 2nd/3rd Trimester Obstetric Sonography  
1 Credit (1)
Includes the anatomy, sectional anatomy, normal physiology, biometrics, assessment, and sonographic appearance of the 2nd and 3rd trimester fetus, placenta, uterus, and adnexa as well as scanning techniques according to recognized protocols. Restricted to: DMS majors. Restricted to Community Colleges campuses only.
DMS 170. Clinical Practicum I
2 Credits (8-10P)
Development of technical and professional aspects of diagnostic ultrasound in a hospital or clinical setting at the developmental level. Ongoing reinforcement and broadening of knowledge base related to hospital procedures and policies. Continued observation, assistance and performance of patient care and sonographic duties under direct supervision. Restricted to: DMS majors. Restricted to Community Colleges campuses only.

DMS 180. Clinical Practicum II
5 Credits (30P)
Development of technical and professional aspects of diagnostic ultrasound in a hospital or clinical setting at the beginner level. Ongoing reinforcement and broadening of knowledge base related to hospital procedures and policies. Continue observation, assistance and performance of patient care and sonographic duties under direct supervision. Restricted to: DMS majors. Restricted to Community Colleges campuses only.

DMS 201. Applied Sonographic Procedures
1 Credit (8P)
Advances scanning skills, system optimization, anatomic recognition of abdominal and pelvic structures utilizing real-time sonographic equipment including Doppler. Includes sonographic evaluation of the first trimester pregnancy and normal fetus. Restricted to: DMS majors. Restricted to Las Cruces campus only.

DMS 216. Vascular Technology II
2 Credits (2)
Includes the pathology and pathophysiology of the vascular system, scanning techniques, clinical presentation, ultrasound appearance and Doppler evaluation seen with pathological conditions of the carotid arteries, deep and peripheral vascular systems. Restricted to: DMS majors. Restricted to Community Colleges campuses only.

DMS 216 L. Vascular Technology II Lab
1 Credit (2P)
Includes progressive development of skills following recognized protocols, scanning techniques, recognition of anatomical relationships with differentiation of normal and abnormal ultrasound appearance of the carotid arteries, deep and peripheral vascular systems utilizing real-time sonographic equipment including Doppler. Restricted to: DMS majors. Restricted to Community Colleges campuses only.

DMS 226. Sonographic Case Studies I
1 Credit (1)
Includes integration of didactic knowledge, clinical presentation, laboratory values, sonographic appearance and related medical imaging of a variety of pathological conditions through a variety of case analysis and presentations. Restricted to: DMS majors. Restricted to Community Colleges campuses only.

DMS 227. Sonographic Case Studies II
1 Credit (1)
Continuation of DMS 226, integration of didactic knowledge, clinical presentation, laboratory values, sonographic appearance and related medical imaging of a variety of pathological conditions through a variety of case analysis and presentations. Restricted to: DMS majors. Restricted to Community Colleges campuses only.

DMS 230. Gynecologic Pathology
2 Credits (2)
Includes the pathology and pathophysiology of the female reproductive system, scanning techniques, clinical presentation, ultrasound appearance and Doppler evaluation seen with pathological conditions of the uterus, ovaries, and adnexa. Restricted to: DMS majors. Restricted to Community Colleges campuses only.

DMS 240. Abdominal Pathology I
2 Credits (2)
Includes the pathology and pathophysiology of abdominal structures of the prevertebral vessels, liver, biliary system, pancreas, spleen and gastrointestinal system; scanning techniques, ultrasound appearance, clinical presentation and Doppler evaluation seen with pathological conditions. Restricted to: DMS majors. Restricted to Community Colleges campuses only.

DMS 245. Abdominal Pathology II
2 Credits (2)
Includes the pathology and pathophysiology of abdominal structures of the genitourinary system, spleen, retroperitoneum, adrenal glands, abdominal wall and prostate; scanning techniques, ultrasound appearance, clinical presentation and Doppler evaluation seen with pathological conditions. Restricted to: DMS majors. Restricted to Community Colleges campuses only.

DMS 248. Pediatric Sonography
2 Credits (2)
Includes the anatomy of the brain, skull, spine, hips, and normal developmental changes as well as pathology and pathophysiology of specific conditions that affect the premature infant, newborn and pediatric population across a variety of body systems. Restricted to: DMS majors. Restricted to Community Colleges campuses only.

DMS 250. Sonographic Principles and Instrumentation II
3 Credits (3)
Includes properties of sound and its use in diagnostic imaging, artifacts, system operation, Doppler, basic hemodynamics, image optimization, bio effects, quality assurance, and new technologies in ultrasound imaging. Restricted to: DMS majors. Restricted to Community Colleges campuses only.

DMS 255. Vascular Physics
2 Credits (2)
Includes a review of sound properties and its use in diagnostic imaging, artifacts, system operation, Doppler, image optimization, bio effects, quality assurance, and in-depth application of fluid properties and hemodynamics in vascular ultrasound imaging. Restricted to: DMS majors. Restricted to Community Colleges campuses only.

DMS 260. High Risk Obstetric Sonography
3 Credits (3)
Includes congenital malformations of the developing fetus, high risk pregnancies, multiple gestation, maternal conditions and invasive procedures. Restricted to: DMS majors. Restricted to Community Colleges campuses only.

DMS 270. Clinical Practicum III
5 Credits (20P)
Continued development of technical and professional aspects of diagnostic ultrasound in a hospital or clinical setting at an intermediate level. Ongoing reinforcement and broadening of knowledge base related to hospital procedures and policies. Continued observation, assistance and performance of patient care and sonographic duties under limited supervision. Restricted to: DMS majors. Restricted to Community Colleges campuses only.
DMS 280. Clinical Practicum IV  
5 Credits (20P)
Application of technical and professional aspects of diagnostic ultrasound in a hospital or clinical setting at a proficient level. Ongoing reinforcement and broadening of knowledge base related to hospital procedures and policies. Continued observation, assistance and performance of patient care and sonographic duties under limited supervision. Restricted to: DMS majors. Restricted to Community Colleges campuses only.

DMS 290. Small Parts & Superficial Structures  
2 Credits (2)
Includes anatomy, pathology and pathophysiology, protocol development, scanning techniques, recognition of anatomical structures and the normal and pathological ultrasound appearance of the breast, thyroid, neck, scrotum, non-cardiac chest and musculoskeletal ultrasound. Restricted to: DMS majors. Restricted to Community Colleges campuses only.

DMS 291. Registry Preparation: OB/GYN  
1 Credit (1)
Registry preparation mock examinations over materials covered in Obstetric and Gynecological ultrasound. Students must pass this course with a 74% or better OR pass national certification in OB/GYN Sonography. Restricted to: DMS majors. Restricted to Community Colleges campuses only.

DMS 292. Registry Preparation: Abdomen  
1 Credit (1)
Registry preparation mock examinations over materials covered in abdominal ultrasound including small parts and superficial structures. Students must pass this course with a 74% or better OR pass ARDMS national certification exam in Abdominal Sonography. Restricted to: DMS majors. Restricted to Community Colleges campuses only.

DMS 293. Registry Preparation: Vascular  
1 Credit (1)
Registry preparation mock examinations over materials covered in vascular ultrasound. Students must pass this course with a 74% or better OR pass national certification in Vascular Technology. Restricted to: DMS majors. Restricted to Community Colleges campuses only.

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DRFT—DRAFTING (DRFT)

DRFT 100. Introduction to Architecture, Engineering, & Construction  
3 Credits (3)
Introduction to and exploration of careers in the fields of architecture, engineering, and construction. Specific fields to include: architecture, civil engineering, mechanical engineering, structural engineering, engineering technology, residential construction, commercial construction, geographical information systems (GIS), surveying, sustainable design, and green building. Crosslisted with: ARCH 1310. Restricted to Community Colleges campuses

Learning Outcomes
1. Prepare accurate written technical documents. Produce drawing documents that are technically sound. Develop and practice productive work skills. And Upgrade technical knowledge and skills to keep pace with real-world changes DRFT 100 Course Competencies
   Describe different career options in architecture, engineering, and construction. Define the roles of different design professionals and support staff. Explain related educational and professional licensing requirements. Articulate employer expectations. Explore related courses and programs of study at DACC and NMSU. Develop good workplace skills and professional, productive work habits.

DRFT 101. Introduction to Drafting and Design Technologies  
1 Credit (1)
Professional and student organizations associated with the Drafting and Design Technologies program, degree requirements, employment skills and work habits, and university and college policies and procedures will be explored. Students will be introduced to the current learning management system and career-readiness certification. Restricted to Community Colleges only.

DRFT 105. Technical Drawing for Industry  
3 Credits (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 Credits (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 Credits (2+2P)
Introduction to principles and fundamentals of drafting using both manual drawing techniques and computer-aided drafting (CAD) applications. May be repeated up to 3 credits. Crosslisted with: E T 109 and C E 109. Restricted to Community Colleges campuses only.

DRFT 112. Drafting Concepts/Computer Drafting Fundamentals I  
4 Credits (2+4P)
Basic drafting skills, terminology, and visualization. Introduction to principles and fundamentals of computer-aided drafting. Same as E T 106.

Prerequisites: OECS 207, OECS 125 or consent of instructor.
DRFT 113. Drafting Concepts/Computer Drafting Fundamentals II
4 Credits (2+4P)
DRAFTING for mechanical/industrial applications; machine part detailing, assemblies in orthographic, isometric, auxillary, oblique, and sectional views. Two-dimensional AutoCAD with introduction to 3-D AutoCAD. Same as E T 216. Restricted to: Community Colleges only.
Prerequisite: DRFT 112.

DRFT 114. Introduction to Solid Modeling
3 Credits (2+2P)
2D mechanical drafting and 3D mechanical solid modeling utilizing the latest version of AutoCAD software. Industry dimensioning and annotation standards will be emphasized. 2D multi-view working drawings, 3D solid models, and basic 3D model assemblies will be introduced. Restricted to Community Colleges campuses only.
Prerequisite(s): DRFT 109.

DRFT 115. General Construction Safety
3 Credits (3)
Overview of general construction safety related to building, highway and road construction, and surveying field work for entry-level individuals. Students will also have the opportunity to earn a 10-hour construction industry OSHA card. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.

DRFT 116. Construction Take-Offs and Estimating
3 Credits (2+2P)
Introduction to drafting in the field of survey engineering. Drawings, projects and terminologies related to Point Data, topography, land/ boundary surveys, legal descriptions and plat surveys. Using the current Autodesk software. Crosslisted with: SUR 143. Restricted to: Community Colleges only.
Prerequisite(s): DRFT 109.

DRFT 117. Survey Drafting Applications
3 Credits (2+2P)
Introduction to drafting in the field of survey engineering. Drawings, projects and terminologies related to Point Data, topography, land/ boundary surveys, legal descriptions and plat surveys. Using the current Autodesk software. Crosslisted with: SUR 143. Restricted to: Community Colleges only.
Prerequisite(s): DRFT 109.

DRFT 118. Construction Take-Offs and Estimating
3 Credits (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 115.

DRFT 119. Intermediate Mechanical Drafting/Solid Modeling
3 Credits (2+2P)
Intermediate 3D mechanical parametric solid modeling and assembly creation utilizing the latest version of Autodesk Inventor software. The creation of 2D working drawings from 3D solid models will be emphasized. Geometric Dimensioning and Tolerancing (GD&T), basic material properties, and industry standard fastening and manufacturing methods will be introduced.
Prerequisite(s): DRFT 114. Restricted to Community Colleges campuses only.

DRFT 120. General Building Codes
3 Credits (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 Colleges only.

DRFT 124. Introduction to Geometric Dimensioning and Tolerancing
3 Credits (2+2P)
Introduction to geometric dimensioning and tolerancing (GD&T) for the mechanical CAD drafting, solid modeling, mechanical engineering technology, mechanical engineering, and manufacturing industries. Related industry standard finishes and fasteners will also be introduced and explored.
Prerequisite(s)/Corequisite(s): DRFT 114. Restricted to Community Colleges campuses only.

DRFT 130. General Building Codes
3 Credits (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 Colleges only.

DRFT 135. Electronics Drafting I
3 Credits (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 Credits (2+2P)
Introduction to drafting in the field of Civil Engineering. Drawings, projects, and terminologies related to topographic, contour drawings, plan and profiles, and street/highway layout. Crosslisted with: E T 143. Restricted to Community Colleges only.
Prerequisite(s): DRFT 109.

DRFT 151. Construction Principles and Print Reading
3 Credits (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 180. Residential Drafting
3 Credits (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. Restricted to Community Colleges campuses only.
Prerequisite(s): DRFT 109.

DRFT 181. Commercial Drafting
3 Credits (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. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): DRFT 109.

DRFT 190. Finding and Maintaining Employment
2 Credits (2)
Techniques in self-evaluations, resume writing, application completion, job interviewing, and job retention. Exposure to work ethics, employee attitudes, and employer expectations.

DRFT 204. Geographic Information Systems Technology
3 Credits (2+2P)
The use of digital information for which various digitized data creation methods are captured. Users will capture, store, analyze and manage spatially referenced data in a modeled mapping procedure. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.

DRFT 214. Advanced Solid Modeling
3 Credits (2+2P)
Advanced 3D mechanical parametric solid modeling and assembly creation utilizing the latest version of Solidworks software. The creation of 2D working drawings from 3D solid models and the creation of 3D models for machining/manufacturing will be emphasized. Geometric Dimensioning and Tolerancing (GD&T), material properties, and industry standard fastening and manufacturing methods will be further explored.
Prerequisite(s)/Corequisite(s): DRFT 114. Restricted to Community Colleges campuses only.

DRFT 222. Introduction to Geomatics
3 Credits (2+3P)
Theory and practice of geomatics as applied to plane surveying in the areas of linear measurements, angle measurements, area determination, differential and trigonometric leveling, and topographic mapping. Crosslisted with: SUR 222.
Prerequisite: MATH 1250G or MATH 1430G.

Learning Outcomes
1. Various

DRFT 230. Building Systems Drafting
3 Credits (2+2P)
Development of working drawings for electrical, plumbing, and HVAC systems, for residential and commercial building through the applications of both 2D Drafting and 3D Building Information Modeling (BIM) techniques. Basics of project setup, National CAD Standards, ADA Standards, modern office practice, code analysis, as well as Sustainability and LEED for new construction. Restricted to: Community Colleges only.
Prerequisite(s): DRFT 180 or DRFT 181.

DRFT 231. Construction Methods and Equipment
3 Credits (2+2P)
Introduction to methods and equipment utilized in the construction industry including, common construction equipment, equipment utilization, equipment operating costs, site and earthwork, applicable specifications and testing, and related planning and safety considerations. Restricted to Community Colleges campuses only.
Prerequisite(s): DRFT 151.

DRFT 240. Structural Systems Drafting
3 Credits (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. May be repeated up to 3 credits.
Prerequisite(s)/Corequisite(s): DRFT 180 or DRFT 181. Restricted to Community Colleges campuses only.

DRFT 242. Roadway Development Drafting
3 Credits (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. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): DRFT 143.

DRFT 243. Land Development Drafting
3 Credits (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 Credits (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. May be repeated up to 3 credits.
Prerequisite(s)/Corequisite(s): DRFT 180 or DRFT 181. Restricted to Community Colleges campuses only.

DRFT 254. Spatial Data Processing
3 Credits (2+2P)
Utilizes the tools and technologies of GIS, processing volumes of geodata identifying a numerical, coded or listed map. Involves the analysis of spatial data from various diverse applications and place in a descriptive mapping process. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): DRFT 204.
DRFT 255. Independent Study
1-3 Credits (1-3)
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 258. Introduction to Infraworks
3 Credits (2+2P)
Introduction to the utilization of Infraworks software for the conceptualization, optimization, and visualization of infrastructure projects in the context of the built and natural environment. Restricted to Community Colleges campuses
Prerequisite(s): DRFT 143.

Learning Outcomes
1. Prepare accurate written technical documents, Produce drawing documents that are technically sound, Develop and practice productive work skills, and Upgrade technical knowledge and skills to keep pace with real-world changes DRFT 253 Course Competencies I. Navigate within a 3D drawing/modeling space, Connect drawings to data sources, Stylize data sources, Create models elements, Analyze models, Collaborate on a project with others, Communicate design, and Develop good workplace skills and professional, productive work habits.

DRFT 261. Construction Scheduling and Project Management
3 Credits (2+2P)
Introduction to construction scheduling and project management. Restricted to Community Colleges campuses only.
Prerequisite(s): DRFT 161.

DRFT 265. Advanced Building Information Modeling Applications
3 Credits (2+2P)
Advanced applications of Building Information Modeling (BIM) including the creation of, and practice in collaborative work sets, data and design analyses, energy modeling and analysis, preliminary LEED analysis, construction take-offs & estimation, and construction animation, through use of various BIM and related software. Restricted to: Community Colleges only.
Prerequisite(s): DRFT 165.

DRFT 274. GIS Theory and Analysis
3 Credits (2+2P)
Analyzes the hypothesis in which location and spatial data sufficiently quantifies the appropriate statistical methodology. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): DRFT 254.

DRFT 276. Computer Rendering and Animation I
3 Credits (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 278. Advanced CAD Applications
3 Credits (2+2P)
Introduction to advanced CAD commands, applications, usage techniques, and user customization. the latest version of the National CAD Standards will also be explored. Restricted to: Community Colleges only.
Prerequisite(s): DRFT 109.

DRFT 288. Portfolio Development
3 Credits (2+2P)
Production of a portfolio consisting of previously produced student work related to the student's individualized degree option. Process shall include the compilation and organization of working and presentation drawings, construction documents, BIM Models, and renderings/animations. Students will learn the basics of design layout and online portfolio documentation. Job search and resume preparation activities will also be required. Production of new material and content may also be required. This course is designed as a last semester course in the Drafting & Design curricula. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): Consent of Instructor.

DRFT 290. Special Topics
1-4 Credits (1-4)
Topics subtitled in the Schedule of Classes. May be repeated for a maximum of 12 credits.

DRFT 291. Cooperative Experience
1-6 Credits (1-6)
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. Graded S/U.
Prerequisite: consent of instructor.

DRFT 295. Professional Development and Leadership DAGA
1 Credit (1)
Students gain experience in leadership, team building, performing community service, and membership and/or leadership in a student organization. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.

E E-ELECTRICAL ENGINEERING (E E)

E E 200. Linear Algebra, Probability and Statistics Applications
4 Credits (3+3P)
The theory of linear algebra (vectors and matrices) and probability (random variables and random processes) with application to electrical engineering. Computer programming to solve problems in linear algebra and probability.
Prerequisite: C- or better in ENGR 140 and (MATH 1521G or MATH 1521H or ENGR 190).

Learning Outcomes
1. Perform vector and matrix operations, including matrix inversion, eigen analysis, finding basis and dimension of vector spaces and rank of a matrix, and solving a set of linear equations. Calculate probabilities using probability mass, density, and cumulative distribution functions for single and multiple, discrete and continuous random variables, and relate them to electrical engineering applications. Perform simple parameter estimation, such as finding sample mean and variance, and relate to confidence intervals. Describe random processes in the context of signal processing and communications systems problems. Use MATLAB to solve problems involving linear algebra and probability, including designing and performing simple numerical experiments.
E E 240. Multivariate and Vector Calculus Applications
3 Credits (3)
Vector algebra, cylindrical and spherical coordinates, partial derivatives, multiple integrals. Calculus of vector functions through electrostatic applications. Divergence, gradient, curl, divergence theorem, Stokes’s theorem, Coulomb’s Law, Gauss’s Law, electric field, electric potential. Applications in Matlab.
Prerequisite: C- or better in (MATH 1521G or MATH 1521H or ENGR 190) and ENGR 140.
Learning Outcomes
1. Students will demonstrate conceptual understanding of the fundamental principles and theories in vector calculus. Students will analyze and solve problems using vector calculus in three coordinate systems.

E T-ENGINEERING TECHNOLOGY (E T)

E T 101. Introduction to Engineering Technology and Geomatics
1 Credit (1)
An introduction to geomatics and the various engineering technology 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.
Learning Outcomes
1. Various

E T 104. Soldering Techniques
1 Credit (3P)
Fundamentals of soldering, desoldering, and quality inspection of printed circuit boards.

E T 109. Computer Drafting Fundamentals
3 Credits (3+2P)
Crosslisted with: DRFT 109, C E 109 and SUR 109

E T 110. Introduction to 3-D Modeling (Solid Works)
3 Credits (2+3P)
Introduction to SolidWorks, a 3-D modeling software. The foundation for designing mechanical parts and assemblies.

E T 120. Computation Software
2-3 Credits (2-3)
The use of spreadsheet software in the field of engineering technology.

E T 125. Introduction to Renewable Energy
3 Credits (3)
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 143. Civil/Survey Drafting I
3 Credits (2+2P)
Introduction to drafting in the field of Civil Engineering. Drawings, projects, and terminologies related to topographic mapping, contour drawings, plan, and profiles as street/highway layout.
Prerequisite(s): DRFT 109.
Learning Outcomes
1. Students will develop a basic knowledge of AutoCad Civil 3D software as they relate to the civil drafting process. Students will become familiar with a basic understanding of computers, drafting and trigonometry is required. Use of long-term projects will be utilized to simulate real-world work environments to aid the understanding and applying vocabulary on surveying drafting plans. An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology.

E T 153. Fundamentals of Networking Communications
3 Credits (3)
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.
Learning Outcomes
1. Students will identify network types/protocols utilizing the OSI reference model and compute numbering system network problems. Students will explain issues related to managing and documenting network environments. Students will list, compare, and discuss industry standards for addressing computers on a network. Students will list and distinguish between computer networking historical milestones. Students will identify, compare, and evaluate networking data transport techniques. Students will identify and compare network transmission media and build/evaluate network cabling. Students will discuss IT industry certifications and summarize current technology trends.

E T 154. Construction Methods and Communications
3 Credits (3)
Blueprint reading, specifications, and introduction to materials used in construction.

E T 155. Network Operating Systems I
3 Credits (3+1P)
Introduction to a computer network operating system. May not be used as part of an E T degree program on main campus. Restricted to: Community Colleges campuses only.
Prerequisite(s): E T 120 or E T 122.

E T 156. Introduction to Information Security
2 Credits (2)
This course introduces information security terminology, historical evolution of digital security, types of PC and network system vulnerabilities and types of information loss. In addition, methods of information protection and integrity, intrusion detection, and recovery of data are introduced.
Prerequisite(s)/Corequisite(s): E T 120. Restricted to Community Colleges campuses only.

E T 160. Windows Fundamentals for IET
3 Credits (3)
Fundamental review of the Windows operating system including installation and upgrades as well as managing applications, files, folders, devices and maintenance.
ET 182. Digital Logic
2 Credits (1+2P)
The use of truth tables, Boolean equations, and diagrams to define, simplify, and implement logic-valued functions.

Learning Outcomes
1. Demonstrate ability to convert numerical values to commonly-used digital representations and their use for arithmetic and logical functions. Demonstrate understanding of Boolean logic functions and truth tables. Demonstrate ability to simplify logic expressions. Demonstrate understanding of sequential logic functions, and the ability to integrate with combinational logic to produce a simple state machine. Familiarity with common integrated circuit issues, such as logic voltage levels, propagation delay, and fan-out.

ET 183. Applied DC Circuits
3 Credits (2+2P)
Application of Ohm’s law, Kirchhoff’s laws, Thevenin’s, and Norton’s theorems to the analysis of DC passive circuits. Embedded Lab.
Prerequisite(s)/Corequisite(s): MATH 1220G.

ET 183 L. Applied DC Circuits Lab
1 Credit (2P)
DC applied circuits lab.
Corequisite(s): E T 183.

ET 184. Applied AC Circuits
3 Credits (2+2P)
Application of circuit laws and theorems to analysis of AC passive circuits. Resonant circuit, polyphase circuit and magnetic circuit topics are introduced. Embedded Lab.
Prerequisite(s)/Corequisite(s): MATH 1250G. Prerequisite(s): E T 183.

ET 190. Applied Circuits Laboratory
1 Credit (2P)
Applied Circuits Lab

ET 191. Applied Circuits Laboratory
1 Credit (2P)
Applied Circuits Laboratory

ET 200. Special Topics
1-3 Credits
Directed study or project. May be repeated for a maximum of 6 credits.
Prerequisite: consent of department head.

ET 203. Computational Foundations
3 Credits (3)
Fundamental concepts of various proof techniques. These concepts will be applied to the use of computer algorithms, programming languages and other engineering and technology applications.
Prerequisite(s): MATH 1250G and E T 262.

ET 210. Intermediate 3-D Modeling (Solid Works)
3 Credits (3)
Intermediate 3-D modeling. Applied modeling of techniques to prepare for SolidWorks certification (CSWA).
Prerequisite(s): E T 110.

ET 217. Manufacturing Processes
3 Credits (3)
Introduction to manufacturing and processing, including: casting, forming, and machining. Emphasis on creating products with the appropriate techniques. Crosslisted with: I E 217.
Prerequisite: E T 110 and MATH 1220G.

Learning Outcomes
1. Various

ET 217 L. Manufacturing Processes Lab
1 Credit (3P)
Hands-on laboratory in machine shop to apply topics from E T 217, including: casting, forming, and machining.
Corequisite: E T 217.

Learning Outcomes
1. Various

ET 220. Internship
1-6 Credits
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. May be repeated up to 6 credits. Consent of Instructor required.
Prerequisite(s): E T 283.

ET 230. Introduction to Servo Systems
1 Credit (2P)
Introduction to Servo Systems. Topics include uses of servos in the industry, servo types, lop gains and frequency response, software control systems, damping, feedback, encoders, synchros and resolvers. Restricted to Community Colleges campuses only.
Prerequisite(s): E T 246.

ET 240. Applied Statics
3 Credits (3)
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(s)/Corequisite(s): MATH 1430G or MATH 1511G. Prerequisite(s): PHYS 1230G or PHYS 1310G.

ET 241. Applied Dynamics
3 Credits (3)
The foundation for understanding particles and bodies in motion and the forces involved, including: projectile motion, Newton’s Laws of Motion, conservation of energy, and impulse and momentum.
Prerequisite: E T 240.
Prerequisite/Corequisite: (MATH 1440 or MATH 1521G or MATH 1521H).

Learning Outcomes
1. Various

ET 246. Electronic Devices I
4 Credits (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: E T 190 or E T 184 or ENGR 120.

Learning Outcomes
1. Various
E T 253. Networking Operating Systems II
3 Credits (3+1P)
Introduction to a computer network operating system. May not be used as part of an E T degree program on main campus. Restricted to Community Colleges campuses only.
Prerequisite: E T 120 and E T 153.
Learning Outcomes
1. Identify Linux utilities and terminology. Use the Linux filesystem. Install, administer, and manage a Linux system. Utilize Linux user/group management. Install software packages. Apply data management skills.

E T 254. Concrete Technology
3 Credits (2+2P)
Fundamentals of aggregates, Portland cement, and asphalt used in design and construction.

E T 255. Linux System Administration
3 Credits (3)
Operating systems applications and interfacing with an introduction to systems administration. Topics include Shell Programming, Programming Tools, Database Management, System Backups, Security, Setup and Maintenance of Linux Servers.
Learning Outcomes
1. Describe the key features of the Linux operating system. Plan the Linux Filesystem to match system requirements. Design BASH scripts to optimize common Linux operations. Interpret Linux performance data to solve hardware and software issues. Students will demonstrate the Core Linux System Administration. Students will be able to link the use of shell commands to managing Linux server daemons and software. Students will apply these concepts to build application servers running Linux, Apache, MySQL, and PHP (LAMP); Tomcat, CUPS print servers; and create backup solutions. Students will apply problem analysis, object-oriented structured logic, and development concepts. Students will demonstrate an understanding of theory and hands-on experience administrating a Linux Based server.

E T 256. Networking Operating Systems III
3 Credits (3+1P)
Introduction to a computer network operating system. May not be used as part of an E T degree program on main campus. Restricted to Community Colleges campuses only.
Prerequisite(s): E T 253.

E T 252. Software Technology I
3 Credits (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.
Prerequisite/Corequisite: (E T 182 or ENGR 130) or (MATH 1250G or MATH 1430G).
Learning Outcomes
1. Set up and use a rich programming environment for programming with C. Analyze existing code. Employ effective use of basic programming and basic troubleshooting. Write, debug and test code given software requirements. Apply testing and documentation best practices. Transfer programming knowledge and apply coding knowledge.

E T 272. Electronic Devices II
4 Credits (3+3P)
Operational amplifiers, positive and negative feedback, computer aided circuit analysis. In addition circuits include integrator, differentiators and phase shift networks.
Prerequisite: E T 246.
Prerequisite/Corequisite: MATH 1430G or MATH 1435 or MATH 1511G.
Learning Outcomes
1. Various

E T 273. Advanced Networking Communications
4 Credits (2+4P)
Explores advanced networking communications to include Wireless Networking, Virtualization and Cloud Computing, Subnets and VLANs, Network Risk Management, Network Security Design, Network Performance, and WANS. The course covers the examination objectives and detailed preparation for students to take the CompTIA Network+ exam.
Prerequisite: E T 153.
Learning Outcomes
1. Identify, describe, and apply wireless transmission characteristics and standards. Explain the benefits of cloud virtualization and cloud computing. Explain the purpose of network segmentation and describe how VLANs work and how they are used. Identify basic concepts of network risk management and configure devices for increased security. Identify network design security features and discuss options in network access control. Use tools to evaluate network performance and discuss best practices for incident response and disaster recovery. Explain characteristics of WAN technology and troubleshoot connection methods.

E T 276. Electronic Communications
3 Credits (2+2P)
Antennas, transmission devices, A-M and F-M transmission and detection, pulse systems, microwave systems.
Prerequisite(s): E T 246.

E T 277. Computer Networking I for IET
3 Credits (2+2P)
Computer network design and applications for LAN, TCP/IP networks, routing and switching technologies, VLANs, and the OSI layers from physical to transport.
Prerequisite(s): E T 182.

E T 280. Web Design and Multimedia
3 Credits (3)
Introduction to front-end web development including webpage design, structure, layout, positioning, responsiveness, and foundational layers of how the web works. Video, audio, and other digital presentation tools are covered.
Learning Outcomes

E T 282. Digital Electronics
4 Credits (3+3P)
Applications of digital integrated circuits, multiplexers, counters, arithmetic circuits, and microprocessors.
Prerequisite(s)/Corequisite(s): (E T 190 or E T 184). Prerequisite(s): E T 182.
ECED-EARLY CHILDHOOD EDUCATION (ECED)

ECED 1110. Child Growth, Development, and Learning
3 Credits (3)
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. The course includes knowledge of how young children grow, develop and learn. Major theories of child development are integrated with all domains of development, including biological-physical, social, cultural, emotional, cognitive and language. The adult’s role in supporting each child’s growth, development and learning is emphasized.

Learning Outcomes
1. Incorporate understanding of developmental stages, processes, and theories of growth, development, and learning into developmentally appropriate practice. A.1
2. Demonstrate knowledge of the interaction between maturation and environmental factors that influence physical, social, emotional, cognitive, and cultural domains in the healthy development of each child. A.2
3. Demonstrate knowledge of the significance of individual differences in development and learning.
4. Demonstrate knowledge of how certain differences may be associated with rate of development and developmental patterns associated with developmental delays and/or specific disabilities. A.3
5. Demonstrate knowledge of the similarities between children who are developing typically and those with diverse abilities. A.4
6. Demonstrate knowledge of the many functions that language serves in the cognitive, social, and emotional aspects of development in the formative years. A.7
7. Demonstrate knowledge of the developmental sequence of language and literacy, including the influence of culture and home factors. A.8
8. Demonstrate knowledge of how children acquire and use verbal, non-verbal, and alternative means of communication. A.9
9. Demonstrate knowledge of the relationship among emotions, behaviors, and communication skills to assist children in identifying and expressing their feelings in appropriate ways. A.10
10. Use appropriate guidance to support the development of self-regulatory capacities in young children. A.11
ECED 1115. Health, Safety, and Nutrition
2 Credits (2)
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. It includes information for developing sound health and safety management procedures for indoor and outdoor learning environments for young children. The course examines the many scheduling factors that are important for children's total development, healthy nutrition, physical activity, and rest.

Learning Outcomes
1. Recognize and respond to each child's physical health, intellectual and emotional well-being, and nutritional and safety needs. B.1
2. Articulate an understanding of indoor and outdoor learning environments that provide opportunities for children to put into practice healthy behaviors (physically, socially and emotionally). B.2
3. Use appropriate health appraisal and management procedures and makes referrals when necessary. B.3
4. Recognize signs of emotional distress, child abuse, and neglect in young children and use procedures appropriate to the situation, such as initiating discussions with families, referring to appropriate professionals, and, in cases of suspected abuse or neglect, reporting to designated authorities. B.4
5. Establish an environment that provides opportunities and reinforcement for children's practice of healthy behaviors that promote appropriate nutrition and physical and psychological well-being. B.5
6. Provide a consistent daily schedule for rest/sleep, as developmentally appropriate. B.6
7. Implement health care and educational activities for children and families based on health and nutritional information that is responsive to diverse cultures. B.7
8. Assist young children and their families, as individually appropriate, in developing decision-making and interpersonal skills that enable them to make healthy choices and establish health-promoting behaviors. B.8

ECED 1120. Guiding Young Children
3 Credits (3)
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 Emphasis is placed on helping children become self-responsible, competent, independent, and cooperative learners and including families as part of the guidance approach.

Learning Outcomes
1. Apply knowledge of cultural and linguistic diversity and the significance of socio-cultural and political contexts for development and learning and recognize that children are best understood in the contexts of family, culture and society. A.6
2. Demonstrate knowledge of the many functions that language serves in the cognitive, social, and emotional aspects of development in the formative years. A.7
3. Demonstrate knowledge of the relationship among emotions, behaviors, and communication skills to assist children in identifying and expressing their feelings in appropriate ways. A.10
4. Use appropriate guidance to support the development of self-regulatory capacities in young children. A.11
5. Recognize and respond to each child's physical health, intellectual and emotional well-being, and nutritional and safety needs. B.1
6. Demonstrate knowledge and skill in building positive, reciprocal relationships with families. C.1
7. Demonstrate knowledge of assessment techniques, interpretation of assessment information in the application of this...
Learning Outcomes

1. Demonstrate ability to choose valid tools that are developmentally, culturally, and linguistically appropriate; use the tools correctly, make appropriate referrals; and interpret assessment results, with the goal of obtaining valid, useful information to inform practice and decision making. F.1
2. Demonstrate knowledge of maintaining appropriate records of children’s development and behavior that safeguard confidentiality and privacy. F.2
3. Demonstrate knowledge of the educator’s role as a participating member of the assessment process as described and mandated by state and federal regulations for Individual Family Service Plans (IFSP) and individual education plans (IEP). F.3
4. Demonstrate understanding of the influences of environmental factors, cultural/linguistic differences, and diverse ways of learning on assessment outcomes. F.4 Involve the family and, as appropriate, other team members in assessing the child’s development, strengths, and needs in order to set goals for the child. F.5 Articulate an understanding of the distinctions and definitions of assessment concepts (e.g., screening, diagnostic assessment, standardized, testing, accountability assessment). F.6
5. Apply understanding of assessment concepts toward selection of appropriate formal assessment measures, critiquing the limitations of inappropriate measures, and discussing assessment issues as part of interdisciplinary teams. F.7
6. Articulate an understanding that responsible assessment is legally and ethically grounded and guided by sound professional. It standards is collaborative and open with the goal of supporting diverse children and families. F.8
7. Demonstrate knowledge of assessment techniques, interpretation of assessment information in the Application of this data to curriculum development and/or intervention planning. F.9
8. Demonstrate knowledge of a variety of techniques and procedures to evaluate and modify program goals for young children and their families. F.10
9. Demonstrate knowledge and use of program evaluation to ensure comprehensive quality of the total environment for children, families, and the community. F.11
10. Use both self and collaborative evaluations as part of ongoing program evaluations. F.12
ECED 2110. Professionalism
2 Credits (2)
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.

Learning Outcomes
1. Recognize signs of emotional distress, child abuse, and neglect in young children and use procedures appropriate to the situation, such as initiating discussions with families, referring to appropriate professionals, and, in cases of suspected abuse or neglect, reporting to designated authorities. B.4
2. Demonstrate ability to communicate to families the program’s policies, procedures, and those procedural safeguards that are mandated by state and federal regulations. C.11
3. Use both self and collaborative evaluations as part of ongoing program evaluations. F.12
4. Demonstrate ability to adhere to early childhood professional codes of ethical conduct and issues of confidentiality. G.1
5. Demonstrate awareness of federal, state, and local regulations, and public policies regarding programs and services for children birth through eight years of age. G.2
6. Demonstrate understanding of conditions of children, families, and professionals; the historical and current issues and trends; legal issues; and legislation and other public policies affecting children, families, and programs for young children and the early childhood profession. G.3
7. Demonstrate critical reflection of one’s own professional and educational practices from community, state, national, and global perspectives. G.4
8. Demonstrate understanding of the early childhood profession, its multiple historical, philosophical, and social foundations, and how these foundations influence current thought and practice. G.5
9. Demonstrate knowledge in technology resources to engage in ongoing professional development. G.7

ECED 2115. Introduction to Language, Literacy, and Reading
3 Credits (3)
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. This course provides the foundation for early childhood professionals to become knowledgeable about literacy development in young children. Instructional approaches and theory-based and research based strategies to support the emergent literacy and reading skills of native speakers and English language learners will be presented.

Prerequisite(s): ECED 1110 and (ENGL 1110G or ENGL 1110H, or ENGL 1110M).

Learning Outcomes
1. Demonstrate knowledge of the many functions that language serves in the cognitive, social, and emotional aspects of development in the formative years. A.7
2. Demonstrate knowledge of the developmental sequence of language and literacy, including the influence of culture and home factors. A.8
3. Demonstrate knowledge of how children acquire and use verbal, non-verbal, and alternative means of communication. A.9
4. Develop partnerships with family members to promote early literacy in the home. C.8
5. Establish partnerships with community members in promoting literacy. C.10
6. Demonstrate knowledge of the reading and writing components of emergent literacy at each developmental level. D.4
7. Provide and use anti-bias materials/literature and experiences in all content areas of the curriculum. D.7
8. Create and manage a literacy-rich environment that is responsive to each child’s unique path of development. E.9
9. Use a variety of strategies during adult-child and child-child interactions and facilitate communication and dialogue of expressive language and thought. E.10
10. Demonstrate a variety of developmentally appropriate instructional strategies that facilitate the development of literacy skills. E.11
ECED 2120. Curriculum Development through Play Birth through Age 4 (PreK)
3 Credits (3)
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 in 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 special needs and the development of IFSPs is included. Curriculum development in all areas, including literacy, numeracy, the arts, health, science, social skills, and adaptive learning for children, birth through age four, is emphasized. Consent of instructor required.
Prerequisite(s): ECED 1110 and (ENGL 1110G or ENGL 1110H or ENGL 1110M).
Corequisite(s): ECED 2121.
Learning Outcomes
1. Use appropriate guidance to support the development of self-regulatory capacities in young children. A.11
2. Demonstrate knowledge of relevant content for young children and developmentally appropriate ways of integrating content into teaching and learning experiences for children from birth to four (0-4) years of age. D.1
3. Demonstrate the integration of knowledge of how young children develop and learn with knowledge of the concepts, inquiry tools, and structure of content areas appropriate for different developmental levels. D.2
4. Adapt content to meet the needs of each child, including the development of individualized family service plans (IFSP) or individualized education plans (IEP) for children with diverse abilities through the team process with families and other team members. D.6
5. Demonstrate knowledge of varying program models and learning environments that meet the individual needs of all young children, including those with diverse abilities. E.1
6. Create environments that encourage active involvement, initiative, responsibility, and a growing sense of autonomy through the selection and use of materials and equipment that are suitable to individual learning, developmental levels, diverse abilities, and the language and cultures in New Mexico. E.2
7. Create and manage inclusive learning environments that provide individual and cooperative opportunities for children to construct their own knowledge through various strategies that include decision-making, problem solving, and inquiry experiences. E.4
8. Demonstrate understanding of the influence of the physical setting, schedule, routines, and transitions on children and use these experiences to promote children's development and learning. E.7
9. Plan blocks of uninterrupted time for children to persist at self-chosen activities, both indoors and outdoors. E.6
10. Demonstrate understanding that each child's creative expression is unique and can be encouraged through diverse ways, including creative play. E.5
11. Develop, implement and evaluate an integrated curriculum that focuses on children's development and interests, using their language, home experiences, and cultural values. D.5
12. Provides and uses anti-bias materials and literature, and experiences in all content areas of the curriculum. D.7
13. Create and manage inclusive learning environments that provide individual and cooperative
opportunities for children to construct their own knowledge through various strategies that include decision-making, problem solving, and inquiry experiences. E.4
14. Demonstrate understanding of the influence of the physical setting, schedule, routines, and transitions on children and use these experiences to promote children's development and learning. E.7
15. Demonstrate a variety of developmentally appropriate instructional strategies that facilitate the development of emergent literacy skills. E.11
16. Demonstrate understanding of the influence of the physical setting, schedule, routines, and transitions on children and use these experiences to promote children's development and learning. E.7
17. Use and explain the rationale for developmentally appropriate methods that include play, small group projects, open-ended questioning, group discussion, problem solving, cooperative learning and inquiry experiences to help young children develop intellectual curiosity, solve problems, and make decisions. E.8
18. Demonstrate knowledge of assessment techniques, interpretation of assessment information in the application of this data to curriculum
development.

ECED 2121. Curriculum Development through Play Birth through Age 4 (PreK) Practicum
2 Credits (2)
The beginning practicum course is a co-requisite with the course Curriculum Development through Play – Birth through Age 4. The field based component of this course will provide experiences that address curriculum content that is relevant for children birth through age four in 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 special needs and the development of IFSPs is included. Curriculum development in all areas, including literacy, numeracy, the arts, health, science, social skills, and adaptive learning for children, birth through age four, is emphasized. Consent of instructor required.
Prerequisite(s): ECED 1110 and (ENGL 1110G or ENGL 1110H or ENGL 1110M).
Corequisite(s): ECED 2120.
Learning Outcomes
1. Provide a variety of activities that facilitate development of the whole child in the following areas: Physical/motor, social/emotional, language/cognitive and adaptive/living skills. A.5
2. Develop, implement and evaluate an integrated curriculum that focuses on children's development and interests, using their language, home experiences, and cultural values. D.5
3. Provides and uses anti-bias materials and literature, and experiences in all content areas of the curriculum. D.7
4. Create and manage inclusive learning environments that provide individual and cooperative opportunities for children to construct their own knowledge through various strategies that include decision-making, problem solving, and inquiry experiences. E.4
5. Demonstrate understanding that each child's creative expression is unique and can be encouraged through diverse ways, including creative play. E.5
6. Plan blocks of uninterrupted time for children to persist at self-chosen activities, both indoors and outdoors. E.6
7. Demonstrate understanding of the influence of the physical setting, schedule, routines, and transitions on children and use these experiences to promote children's development and learning. E.7
8. Use and explain the rationale for developmentally appropriate methods that include play, small group projects, open-ended questioning, group discussion, problem solving, cooperative learning and inquiry experiences to help young children develop intellectual curiosity, solve problems, and make decisions. E.8
9. Demonstrate a variety of developmentally appropriate instructional strategies that facilitate the development of emergent literacy skills. E.11
10. Demonstrate understanding that each child's creative expression is unique and can be encouraged through diverse ways, including creative play. E.5
11. Plan blocks of uninterrupted time for children to persist at self-chosen activities, both indoors and outdoors. E.6
12. Demonstrate understanding of the influence of the physical setting, schedule, routines, and transitions on children and use these experiences to promote children's development and learning. E.7
13. Use and explain the rationale for developmentally appropriate methods that include play, small group projects, open-ended questioning, group discussion, problem solving, cooperative learning and inquiry experiences to help young children develop intellectual curiosity, solve problems, and make decisions. E.8
14. Demonstrate a variety of developmentally appropriate instructional strategies that facilitate the development of emergent literacy skills. E.11
15. Demonstrate knowledge of assessment techniques, interpretation of assessment information in the application of this data to curriculum development.
ECED 2130. Curriculum Development and Implementation Age 3 (PreK) through Grade 3
3 Credits (3)
The 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 special needs and the development of IEP’s is included. Consent of instructor required.
Prerequisite(s): ECED 1110 and (ENGL 1110G or ENGL 1110H or ENGL 1110M).
Corequisite(s): ECED 2131.
Learning Outcomes
1. Use appropriate guidance to support the development of self-regulatory capacities in young children. A.11
2. Demonstrate the integration of knowledge of how young children develop and learn with knowledge of the concepts, inquiry tools, and structure of content areas appropriate for different developmental levels. D.2
3. Demonstrate knowledge of what is important in each content area, why it is of value, and how it links with early and later understandings within and across areas. D.3
4. Demonstrate knowledge of the language, reading and writing components of emergent literacy at each developmental level. D.4
5. Adapt content to meet the needs of each child, including the development of individualized family service plans (IFSP) or individualized education plans (IEP) for children with diverse abilities through the team process with families and other team members. D.6
6. Demonstrate knowledge of varying program models and learning environments that meet the individual needs of all young children, including those with diverse abilities. E.1
7. Create environments that encourage active involvement, initiative, responsibility, and a growing sense of autonomy through the selection and use of materials and equipment that are suitable to individual learning, developmental levels, diverse abilities, and the language and cultures in New Mexico. E.2
8. Create and manage inclusive learning environments that provide individual and cooperative opportunities for children to construct their own knowledge through various strategies that include decision-making, problem solving, and inquiry experiences. E.4
9. Demonstrate understanding that each child’s creative expression is unique and can be encouraged through diverse ways, including creative play. E.5
10. Plan blocks of uninterrupted time for children to persist at self-chosen activities, both indoors and outdoors. E.6
11. Demonstrate understanding of the influence of the physical setting, schedule, routines, and transitions on children and use these experiences to promote children’s development and learning. E.7
12. Demonstrate knowledge of developmentally appropriate uses of technology, including assistive technology. E.12
13. Demonstrate knowledge of assessment techniques, interpretation of assessment information in the application of this data to curriculum development of intervention planning. F.9

ECED 2131. Curriculum Development and Implementation Age 3 (PreK) through Grade 3 Practicum
2 Credits (2)
The beginning practicum course is a co-requisite with the course Curriculum Development and Implementation: Age 3 through Grade 3. The field based component of this course will provide experiences that address 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 special needs and the development of IEPs is included. Consent of instructor required. Corequisite(s): ECED 2130
Prerequisite(s): ECED 1110 and (ENGL 1110G or ENGL 1110H or ENGL 1110M).
Learning Outcomes
1. Provide a variety of activities that facilitate development of the whole child in the following areas: Physical/motor, social/emotional, language/cognitive and adaptive/living skills. A.5
2. Develop, implement and evaluate an integrated curriculum that focuses on children’s development and interests, using their language, home experiences, and cultural values. D.5
3. Provides and uses anti-bias materials and literature, and experiences in all content areas of the curriculum. D.7
4. Create and manage inclusive learning environments that provide individual and cooperative opportunities
5. for children to construct their own knowledge through various strategies that include decision-making, problem solving, and inquiry experiences. E.4
6. Demonstrate understanding that each child’s creative expression is unique and can be encouraged
7. through diverse ways, including creative play. E.5
8. Plan blocks of uninterrupted time for children to persist at self-chosen activities, both indoors and outdoors. E.6
9. Demonstrate understanding of the influence of the physical setting, schedule, routines, and transitions on children and use these experiences to promote children’s development and learning. E.7
10. Use and explain the rationale for developmentally appropriate methods that include play, small group projects, open-ended questioning, group discussion, problem solving, cooperative learning and inquiry experiences to help young children develop intellectual curiosity, solve problems, and make decisions. E.8
ECED 2140. Effective Program Development for Diverse Learners and their Families  
3 Credits (3)  
This course addresses the role of a director/administrator in the implementation of family-centered programming that includes individually appropriate and culturally responsive curriculum in a healthy and safe learning environment for all children and their families.  
Learning Outcomes  
1. Describe important aspects of leadership that an administrator in an early childhood setting must demonstrate.  
2. Identify and describe ways in which classrooms can have a multicultural environment.  
3. Observe a classroom and identify, using photographs good practice with classroom environment.  
4. Describe important aspects of a good early childhood curriculum.  
5. Describe how culture and socioeconomic factors influence classroom environment.  

ECED 2141. Effective Program Development for Diverse Learners and their Families Practicum  
2 Credits (2)  
Provides opportunities for students to apply knowledge gained from Curriculum for Diverse Learners and their Families in a practicum setting. Consent of instructor required. Restricted to ECED majors.  
Corequisite(s): ECED 2140.  
Learning Outcomes  
1. Describe the requirements to maintain and enhance the physical and mental health, safety, and nutrition components of a program: Demonstrate knowledge of facility management to include evaluation, maintenance, security, and meeting applicable codes; Demonstrate knowledge of planning for appropriate indoor and outdoor environments; Identify ways to support early childhood educators in the selection of appropriate materials and equipment for the environment; Demonstrate knowledge of the impact of the environment on children's learning and development.  
2. Demonstrate knowledge of early care and education curriculum that is individually, culturally, linguistically, and developmentally responsive: Describe a variety of curriculum goals and teaching strategies; Describe the importance of ongoing curriculum assessment and planning, and collaboration with teachers, families and community entities; Identify ways to support early childhood educators in curriculum assessment and planning.  
3. Demonstrate knowledge of family/community involvement in effective program development: Describe the importance of supporting families as partners in early care and education program development; Describe both informal and formal communication systems with families that encourage information sharing and joint decision making; Identify strategies for resolving conflicts and supporting families with diverse backgrounds and parenting expectations; Identify the range of family needs including transitional periods; Identify within the community the network to support families with their special needs; Describe a “family friendly” inclusive philosophy.  
4. Demonstrate knowledge of a director's role as an educational leader in an inclusive setting: Describe what a director does in supporting the instructional component of the program for children, staff, and families; Identify resources that a director might use to keep current with information relating to the instructional component of the program; Describe ways to involve teachers in instructional decision making.  

ECED 2215. Program Management  
3 Credits (3)  
This course emphasizes the technical knowledge necessary to develop and maintain an effective early care and education program. It focuses on sound financial management and vision, the laws and legal issues that affect programs, and state and national standards such as accreditation. Consent of instructor required.  

ECED 2280. Professional Relationships  
3 Credits (3)  
This course addresses staff relations that will foster diverse professional relationships with families, communities and boards. Topics of staff recruitment, retention, support and supervision will lay the foundation for positive personnel, family and community relationships. Consent of instructor required.  
Corequisite(s): ECED 2281.  
Learning Outcomes  
1. Interview an administrator and write a paper describing personnel management, staff support, supervision, and professional development.  
2. Identify and describe ethical and legal requirements in maintaining a professional relationship with subordinates, the community, clients, and fellow administrators.  
3. Identify and describe ethical and legal requirements in maintaining a professional relationship with subordinates, the community, clients, and fellow administrators.  
4. Identify and describe technologies which may be used in an early childhood setting.  
5. Identify and describe legal and ethical considerations in the employment of others.
ECED 2281. Professional Relationships Practicum

2 Credits (2)

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. Restricted to ECED majors.

Corequisite(s): ECED 2280.

Learning Outcomes

1. Demonstrate knowledge of personnel management, staff support, supervision, and professional development within a diverse and inclusive organization: Describe methods for recruiting and retaining a diverse staff; Describe job descriptions for each position; Review a sampling of personnel policies and procedures; Review a variety of staff handbooks; Explain why on-going system of supervision should include regular meetings for professional goal setting, self-assessment, and feedback; Review program needs to effectively manage the work of the program including scheduling, covering ratios, initial orientation, in-service, staff meeting, etc.
2. Demonstrate an awareness of appropriate communication and collaboration skills: Improve written and oral communication skills; Describe strategies for resolving conflicts; Explain how to promote consensus building as a decision making process.
3. Demonstrate knowledge that promotes effective professional relationships with families, communities, and board members: Describe methods for demonstrating respect, understanding, and appreciation for all people; Identify the aspects of culture that facilitate relationship building among people; Describe how to build a common vision and develop long range program plans with parents, staff, board, and the community; Communicate program goals to visitors, prospective parents, volunteers, and board members; Describe how public relations and marketing strategies can impact programs; Review assessment tools that identify needs for early care, education and family support; Develop a personal professional development plan; Describe methods to work effectively with a board and advisory group.
4. Demonstrate knowledge of technology uses and skill acquisition: Describe how to use technology resources to engage in ongoing professional development and lifelong learning; Describe how you will use technology to communicate and collaborate in your leadership role.

ECON-ECONOMICS (ECON)

ECON 1110G. Survey of Economics

3 Credits (3)

This course will develop students’ economics literacy and teaches students how economics relates to the everyday life of individuals, businesses and society in general. The course will also introduce students to the roles different levels of governments play in influencing the economy. At the conclusion of the course, students will be able to identify economic causes for various political and social problems at national and international levels, and have a better understanding of everyday economic issues that are reported in media and public forums.

Learning Outcomes

1. Gain and demonstrate a contextual understanding of economic terms and concepts.
2. Recognize and analyze common economic issues which relate to individual markets and the aggregate economy.
3. Learn basic economic principles that influence global trading and challenges relating to globalization.
4. Outline the implications of various economic policies on individuals and on economies.
5. Demonstrate ability to use diagrams and graphs to explain economic principles, policies and their applications.
6. Appreciate and understand how individual decisions and actions, as a member of society, affect economies locally, nationally and internationally.
7. Explain the roles of governments in influencing buyer and seller behavior in the market and how government failure occurs when intervention fails to improve or actually worsens economic outcomes.
8. Be able to apply course concepts to interpret, evaluate and think critically about economic events and policies, especially as regularly reported in the media and other public forums.

ECON 2110G. Macroeconomic Principles

3 Credits (3)

Macroeconomics is the study of national and global economies. Topics include output, unemployment and inflation; and how they are affected by financial systems, fiscal and monetary policies.

Learning Outcomes

1. Explain the concepts of opportunity cost, comparative advantage and exchange.
2. Demonstrate knowledge of the laws of supply and demand and equilibrium and use supply and demand curves to analyze responses of markets to external events.
3. Explain the circular flow model and use the concepts of aggregate demand and aggregate supply to analyze the response of the economy to disturbances.
4. Explain the concepts of gross domestic product, inflation and unemployment and how they are measured.
5. Describe the determinants of the demand for money, the supply of money and interest rates and the role of financial institutions in the economy.
6. Define fiscal policy and monetary policies and how these affect the economy.
7. Students will be able to identify the causes of prosperity, growth, and economic change over time and explain the mechanisms through which these causes operate in the economy.
ECON 2110H. Principles of Macroeconomics Honors
3 Credits (3)
Macroeconomic theory and public policy designed: national income concepts, unemployment, inflation, economic growth and international payment problems. Must be a Crimson Scholar.
Prerequisite(s): MATH 1220G.
Learning Outcomes
1. Explain the concepts of opportunity cost, comparative advantage and exchange.
2. Demonstrate knowledge of the laws of supply and demand and equilibrium and use supply and demand curves to analyze responses of markets to external events.
3. Explain the circular flow model and use the concepts of aggregate demand and aggregate supply to analyze the response of the economy to disturbances.
4. Explain the concepts of gross domestic product, inflation and unemployment and how they are measured.
5. Describe the determinants of the demand for money, the supply of money and interest rates and the role of financial institutions in the economy.
6. Define fiscal policy and monetary policies and how these affect the economy.
7. Students will be able to identify the causes of prosperity, growth, and economic change over time and explain the mechanisms through which these causes operate in the economy.

ECON 2120G. Microeconomics Principles
3 Credits (3)
This course will provide a broad overview of microeconomics. Microeconomics is the study of issues specific to households, firms, or industries with an emphasis on the role of markets. Topics discussed will include household and firm behavior, demand and supply, government intervention, market structures, and the efficient allocation of resources.
Learning Outcomes
1. Explain the concept of opportunity cost.
2. Demonstrate knowledge of the laws of supply and demand and equilibrium.
3. Use supply and demand curves to analyze responses of markets to external events.
4. Use supply and demand analysis to examine the impact of government intervention.
5. Explain and calculate price elasticity of demand and other elasticities.
6. Demonstrate an understanding of producer choice, including cost and break-even analysis.
7. Compare and contrast the following market structures: perfect competition, monopoly, monopolistic competition, and oligopoly.

EDLT-EDUCATIONAL TECHNOLOGY
EDLT 2110. Integrating Technology with Teaching
3 Credits (3)
Considers impact of technology on communication and knowledge development; engages students in the design of technology-integrated lessons with a constructivist approach.
Learning Outcomes
1. Students will demonstrate a sound understanding of technology operations and concepts.
2. Students will plan and design effective learning environments and experiences supported by technology.
3. Students will implement curriculum plans that include methods and strategies for applying technology to maximize learning.
4. Students will apply technology to facilitate a variety of effective assessment and evaluation strategies.
5. Students will use technology to enhance their productivity and professional practice.
6. Students will better understand the social, ethical, legal, and human issues surrounding the use of technology on PreK-12 schools and apply that knowledge into future practice.
EDUC-EDUCATION (EDUC)

EDUC 1110. Freshman Orientation
1 Credit (1)
Introduction to the university and to the College of Education. Discussion of planning for individualized education program and field experience. Restricted to Las Cruces campus only.

Learning Outcomes
1. Demonstrates knowledge of and uses theories, approaches, methods, and techniques for teaching, reading, writing, and other academic skills in English and the native language.
2. Demonstrates knowledge of and applies management techniques appropriate to classrooms containing students who have varying levels of proficiency and academic experience in both languages.
3. Community/Family Involvement
4. The bilingual teacher.
5. Recognizes the importance of parental and community involvement for facilitating the learner's successful integration to his/her school environment.
6. Demonstrates knowledge of the teaching and learning patterns of the students' home environment and incorporates these into the instructional areas of program.
7. Assessment
8. The bilingual teacher.
9. Assesses oral and written language proficiency in academic areas in both languages utilizing the results for instructional placement, prescription, and evaluation.
10. Evaluates the growth of the learner's native and second language in the context of the curriculum.
11. Continuously assesses and adjusts her or his own language use in the classroom in order to maximize learner comprehension and verbal participation.

EDUC 1120. Introduction to Education
2 Credits (2)
Introduction to the historical, philosophical, sociological foundations of education, current trends, and issues in education; especially as it relates to a multicultural environment. Students will use those foundations to develop effective strategies related to problems, issues and responsibilities in the field of education. Restricted to Las Cruces campus only.

Learning Outcomes
1. Describe the teaching and learning of various American education settings including early childhood, elementary, middle school, high school, and special education.
2. Describe how teachers use educational theory and the results of research of students' learning.
3. Explain the techniques for establishing a positive and supportive environment in the classroom.
4. Identify and describe instructional strategies supported by current research to promote thinking skills of all learners.
5. Recognize the teachers' role and responsibilities in an increasingly diverse, multicultural society.

EDUC 1140. Math for Paraprofessionals
3 Credits (3)
Applied math skills for paraprofessionals working with children.
Prerequisite: CCDM 103 N.

Learning Outcomes
1. Students will plan developmentally appropriate math activities for young children.
2. Students will plan adaptations to math activities for children with diverse abilities.
3. Students will demonstrate understanding of recent research in methods of teaching mathematics.
4. Students will demonstrate understanding of early childhood theories as they relate to the teaching of mathematics.
5. Students will demonstrate understanding of unique needs of children from diverse economic or cultural backgrounds.

EDUC 1150. Math for Paraprofessionals II
3 Credits (3)
Applied math skills for paraprofessionals working under the direction of a teacher.
Prerequisite(s): EDUC 1140.

Learning Outcomes
1. Students will plan developmentally appropriate math activities for young children.
2. Students will plan adaptations to math activities for children with diverse abilities.
3. Students will demonstrate understanding of recent research in methods of teaching mathematics.
4. Students will demonstrate understanding of early childhood theories as they relate to the teaching of mathematics.
5. Students will demonstrate understanding of unique needs of children from diverse economic or cultural backgrounds.
EDUC 1185. Introduction to Secondary Education and Youth
3 Credits (3)
Introductory course for students considering a career in secondary education. Includes historical, philosophical, and sociological foundations, program organization, critical dispositions, and understanding the context of schools and youth. Practicum required. Restricted to: Secondary Ed majors. Traditional Grading with RR.
Learning Outcomes
1. Articulate the attributes of an education professional entering the field.
2. Differentiate and summarize the major educational philosophies and historical events that have influenced the progression of educational practice.
3. Describe the role of law in education with emphasis on the rights and responsibilities of teachers and learners.
4. Develop a preliminary personal philosophy of teaching and learning.
5. Discuss the characteristics and roles of the teacher, the student, and the school in today's education.
6. Identify effective teaching methods, instructional strategies and learning styles.
7. Evaluate the Lesson Planning Process using various lesson planning templates, formats, and rubrics.
8. Explain classroom management techniques.
9. Identify different types of diversity in the classroom environment.
10. Describe how learning differences are manifested in schools.
11. Describe how teachers use multiple methods of assessment to engage learners in their own growth, to monitor learner progress.
12. Describe how teachers use multiple methods of assessment to modify instruction and inform decision making.
13. Identify the role of Standards and High Stakes Testing in the life of an educational professional.
14. Complete 24 hours internship in a classroom, preferably a bilingual classroom.
15. Document and reflect on your observations throughout your internship.
16. Construct an individualized map to teacher licensure in the State of New Mexico.

EDUC 1995. Field Experience I
1 Credit (1)
Introduction to public school teaching, school visits, classroom observations and discussion seminar.
Learning Outcomes
1. Demonstrate an understanding of personal attitudes and motivations for entering the field of education.
2. Identify effective teaching strategies that enhance student learning outcomes.
3. Identify classroom management techniques and learning styles.
4. Develop observational skills and reflective thinking skills.
5. Evaluate instructional methods that enhance upper level thinking skills in children.

EDUC 1996. Special Topics in Education
1 Credit (1)
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.
Learning Outcomes
1. Varies

EDUC 1998. Internship I
3 Credits (3)
Supervised experience in elementary education settings.
Learning Outcomes
1. Varies

EDUC 2710. Pre-Teacher Preparation
3 Credits (3)
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.
Learning Outcomes
1. Investigate the process and requirements of the Teacher Education Program
2. Read critically about teacher's experiences and write brief reactions
3. Discuss philosophies of education and draft a written personal philosophy of education
4. Discuss the nature of education for students with diverse languages, cultures and abilities
5. Draft personal position statements concerning education for students with disabilities and diverse cultures

EDUC 2998. Internship II
3 Credits (3)
Supervised experience in junior high settings.
Prerequisite: must be a co-op student.
Learning Outcomes
1. Varies
ELAD-EDUCATIONAL LEADERSHIP ADMINISTRATION

ELAD 2210. Leadership and Change in Education
3 Credits (3)
This course will introduce students to the challenges and key strategies in initiating, implementing, and sustaining educational change and reform. In the first part of the course, participants will learn about the challenges of educational change in the United States and the role that they as school leaders play in facilitating change and reform. The course continues with an examination of how culture, micro-politics, and power structures support or impede national and global change initiatives. The last part of the course offers suggestions for change agents including community organizing, culture building, and embracing sustainable leadership practices. Participants will learn how to apply the change theories and concepts introduced in the course to practice through course readings, online discussions with the instructor and colleagues, group work, active examination of daily practice in schools, and personal reflection.

Learning Outcomes
1. Students will be able to communicate in clear manners that articulate, convey and deepen the understandings others have of issues affecting their communities.
2. Students will be able to collaborate on democratic processes.
3. Students will be able to communicate engage in critical social analysis and how the status quo fits into a larger movement for social change.

ELAD 2340. Multicultural Leadership in Education
3 Credits (3)
Introduction to the social and cultural constructions of gender, class, and race. Students will critically apply theoretical constructs to everyday life and discuss the intersection of gender and race with class inequality in national and global contexts. Using a social justice framework, readings, and assignments integrate a variety of racial/ethnic groups while considering the effects of historically uneven resource distribution, unearned privilege, forms of domination and subordination, immigration status, and cultural representation and ideologies. Participants will learn how to apply the change theories and concepts introduced in the course to practice through course readings, online discussions with the instructor and colleagues, group work, active examination of daily practice in schools, and personal reflection.

Learning Outcomes
1. Students will develop awareness of their own social identities.
2. Students will recognize differences among various communities, perspectives, and world-views.
3. Students will describe how privilege and biases impact our communities and systems.
4. Students will create meaningful peer-to-peer relationships.
5. Students will understand the impact of their actions on community members.
6. Students will identify their leadership skills to shape social change on and off campus.
7. Students will act on opportunities to promote social change.
8. Students will use academic resources including advising, computers, printing, library, and space.

ELT - ELECTRONICS TECHNOLOGY (ELT)

ELT 103. Math Study Skills for Electronics
1 Credit (1)
Covers specific math study skills and critical thinking processes to reinforce practical applications of math and its use with electronics. The student will be introduced to electronic mathematical formulas during the problem-solving steps required for circuit analysis. May be repeated up to 4 credits.
Prerequisite(s)/Corequisite(s): E T 183 OR E T 184. Restricted to Community Colleges only.

ELT 105. Basic Electricity and Electronics
4 Credits (3+3P)
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 Credits (3+3P)
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. Crosslisted with: AERT123. Restricted to: Community Colleges only.

ELT 120. Mathematics for Electronics
4 Credits (4)
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 1215 or higher. Restricted to: Community Colleges only. Crosslisted with: AERT 124

ELT 135. Electronics II
4 Credits (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, photovoltaic effects, gates and timing circuits. Restricted to Community Colleges campuses only.
Prerequisite(s): ELT 110 and ELT 120.
ELT 215. Electronics CAD and PCB Design
3 Credits (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 Credits (3+3P)
Number systems, codes, Boolean algebra, logic gates, Karnaugh maps, combination circuits, flip-flops, and digital troubleshooting techniques. Restricted to: Community Colleges only.
Prerequisite(s): ELT 110 and (ELT 120 or MATH 1215).

ELT 175. Soldering Practices
3 Credits (2+2P)
Methods and techniques of hand soldering in the production of high quality and reliable soldering connections. Restricted to: Community Colleges only.

ELT 205. Semiconductor Devices
4 Credits (3+3P)
Analysis and trouble shooting of linear electronic circuits including amplifiers, op-amps, power supplies, and oscillators. Restricted to: Community Colleges only.
Prerequisite(s): ELT 110 and ELT 135.

ELT 215. Microprocessor Applications I
4 Credits (3+3P)
Fundamentals of microprocessor architecture and assembly language with an emphasis on hardware interfacing applications.
Prerequisite(s)/Corequisite(s): ELT 235. Prerequisite(s): ELT 160. Restricted to: Community Colleges only.

ELT 220. Electronic Communication Systems
4 Credits (3+2P)
Principles and applications of circuits and devices used in the transmission, reception, and processing of RF, microwave, digital and telecommunications systems.
Prerequisite(s)/Corequisite(s): ELT 205. Prerequisite(s): ELT 135. Restricted to: Community Colleges only.

ELT 221. Cooperative Experience I
1-6 Credits
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 Credits
Continuation of ELT 221. Maximum of 6 credits. Graded S/U.
Prerequisite: consent of instructor.

ELT 225. Computer Applications for Technicians
3 Credits (2+2P)
An overview of computer hardware, software applications, operating systems, high level programming languages and networking systems.

ELT 230. Microprocessor Applications II
4 Credits (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 Credits (2+2P)
Sequential logic circuits, latches, counters, shift-registers, fault analysis and troubleshooting of digital ICs, multiplexers, timers, encoders/decoders, arithmetic circuits, pulse shaping, and memory devices. Restricted to: Community Colleges only.
Prerequisite(s): ELT 160.

ELT 240. Introduction to Photonics
4 Credits (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 245. Radar: Principles and Applications
3 Credits (3)
Explores the principles of operation for microwave radar applications and supporting subsystems.
Prerequisite: E T 246.

Learning Outcomes
1. Students will analyze the various factors that comprise the Radar Equation and apply the equation in calculations for various scenarios. Students will explain the principles of Moving Target Indication, Pulse Doppler, Phased Array, and Synthetic Aperture Radars, and their advantages and disadvantages. Students will analyze and calculate the effects of clutter and environmental noise, earth surface scattering, and atmospheric attenuation, diffraction, and refraction on radar propagation. Students will analyze the performance of supporting radar subsystems, including transmitters, receivers, antennas, tracking servos, and signal processing. Students will explain the kinds of information that can be obtained from radar signals and perform calculations associated with range determination, target motion resolution, and error. Students will explain the use of telemetry, and correlate test radar and telemetry measurements. Students will explain and compare radar countermeasures and analyze their effect on radar return cross-sections.

ELT 250. Electronics Systems Analysis
2 Credits (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 260. Instrumentation Control and Signal Conditioning
4 Credits (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 Credits
Topic to be announced in the Schedule of Classes.

ELT 270. Biomedical Equipment Instrumentation
4 Credits (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.
Prerequisite(s)/Corequisite(s): ELT 260. Prerequisite(s): ELT 205. Restricted to: Community Colleges only.
ELWK - ELECTRICAL LINEWORKER

ELWK 130. Introduction to Electrical Power Systems
2 Credits (2)
An overview of electrical power systems, equipment, safety practices, first aid and CPR. May be repeated up to 2 credits. Students must be accepted into the electrical lineman program before enrolling in this course. Restricted to: OEET majors. Restricted to Community Colleges campuses only.
Corequisite(s): OEET 110,OEET 131.

ELWK 131. Electrical Lineworker Lab I
6 Credits (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. May be repeated up to 6 credits. Students must be accepted into the electrical lineman program before enrolling in this course. Restricted to: OEET majors. Restricted to Community Colleges campuses only.
Corequisite(s): OEET 110,OEET 130.

ELWK 140. Electrical Power Systems II
3 Credits (2+2P)
Theory of power generation and distribution with emphasis on three phase systems to include transformers, voltage regulators, surge arrestors. Includes troubleshooting. May be repeated up to 3 credits. Students must be accepted into the electrical lineman program before enrolling in this course. Restricted to: OEET majors. Restricted to Community Colleges campuses only.
Corequisite(s): OEET 141.

ELWK 141. Electrical Lineworker II
6 Credits (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. May be repeated up to 6 credits. Students must be accepted into the electrical lineman program before enrolling in this course. Restricted to: OEET majors. Restricted to Community Colleges campuses only.
Corequisite(s): OEET 140.

ELWK 221. Cooperative Experience I
1–4 Credits (1–4)
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. May be repeated up to 4 credits. Consent of Instructor required. Graded: S/U Grading (S/U, Audit). Restricted to Community Colleges campuses only.
Prerequisite(s): Consent of instructor.

ENGL-ENGLISH (ENGL)

ENGL 1105M. Intermediate ESL Composition and Grammar Review
3 Credits (3)
Development of fluent academic writing skills, with an emphasis on grammar review for editing purposes. May be repeated up to 3 credits. Restricted to Las Cruces campus only.
Prerequisite(s): Placement based on English language screening test, and either a minimum TOEFL score of 500 or consent of instructor.

ENGL 1110G. Composition I
4 Credits (4)
In this course, students will read, write, and think about a variety of issues and texts. They will develop reading and writing skills that will help with the writing required in their fields of study and other personal and professional contexts. Students will learn to analyze rhetorical situations in terms of audience, contexts, purpose, mediums, and technologies and apply this knowledge to their reading and writing. They will also gain an understanding of how writing and other modes of communication work together for rhetorical purposes. Students will learn to analyze the rhetorical context of any writing task and compose with purpose, audience, and genre in mind. Students will reflect on their own writing processes, learn to workshop drafts with other writers, and practice techniques for writing, revising, and editing.
Prerequisite: ACT standard score in English of 16 or higher, or an Accuplacer score 250 or higher, or an SAT score of 400 or higher or CCDE 1110 N.
Learning Outcomes
1. Analyze communication through reading and writing skills.
2. Employ writing processes such as planning, organizing, composing, and revising.
3. Express a primary purpose and organize supporting points logically.
4. Use and document research evidence appropriate for college-level writing.
5. Employ academic writing styles appropriate for different genres and audiences.
6. Identify and correct grammatical and mechanical errors in their writing.

ENGL 1110H. Composition I Honors
4 Credits (4)
In this course, students will read, write, and think about a variety of issues and texts. They will develop reading and writing skills that will help with the writing required in their fields of study and other personal and professional contexts. Students will learn to analyze rhetorical situations in terms of audience, contexts, purpose, mediums, and technologies and apply this knowledge to their reading and writing. They will also gain an understanding of how writing and other modes of communication work together for rhetorical purposes. Students will learn to analyze the rhetorical context of any writing task and compose with purpose, audience, and genre in mind. Students will reflect on their own writing processes, learn to workshop drafts with other writers, and practice techniques for writing, revising, and editing. Individualized assignments and independent study.
Prerequisite: ACT standard English score of 25 or higher, or an SAT score of 550 or higher.
Learning Outcomes
1. Analyze communication through reading and writing skills.
2. Employ writing processes such as planning, organizing, composing, and revising.
3. Express a primary purpose and organize supporting points logically.
4. Use and document research evidence appropriate for college-level writing.
5. Employ academic writing styles appropriate for different genres and audiences.
6. Identify and correct grammatical and mechanical errors in their writing.
ENGL 1110M. Composition I Multilingual
4 Credits (4)
In this course, students will read, write, and think about a variety of issues and texts. They will develop reading and writing skills that will help with the writing required in their fields of study and other personal and professional contexts. Students will learn to analyze rhetorical situations in terms of audience, contexts, purpose, mediums, and technologies and apply this knowledge to their reading and writing. They will also gain an understanding of how writing and other modes of communication work together for rhetorical purposes. Students will learn to analyze the rhetorical context of any writing task and compose with purpose, audience, and genre in mind. Students will reflect on their own writing processes, learn to workshop drafts with other writers, and practice techniques for writing, revising, and editing. For international and multilingual students. Your instructor and classmates will serve as your readers and will give you helpful and constructive criticism, which will in turn assist you in becoming a more fluent and engaging communicator in English. Restricted to Las Cruces campus only.
Prerequisite(s): CBT/PB score of 500, or IBT score of 61, or SPCD 110, or consent of instructor.
Learning Outcomes
1. Analyze communication through reading and writing skills.
2. Employ writing processes such as planning, organizing, composing, and revising.
3. Express a primary purpose and organize supporting points logically.
4. Use and document research evidence appropriate for college-level writing.
5. Employ academic writing styles appropriate for different genres and audiences.
6. Identify and correct grammatical and mechanical errors in their writing.

ENGL 1120. Composition II
2 Credits (2)
In this course, students will explore argument in multiple genres. Research and writing practices emphasize summary, analysis, evaluation, and integration of secondary sources. Students will analyze rhetorical situations in terms of audience, contexts, purpose, mediums, and technologies and apply this knowledge to their reading, writing, and research. Students will sharpen their understanding of how writing and other modes of communication work together for rhetorical purposes. The emphasis of this course will be on research methods.
Prerequisite: successful completion of ENGL 1110G or ENGL 1110H or ENGL 1110M.
Learning Outcomes
1. Analyze the rhetorical situation for purpose, main ideas, support, audience, and organizational strategies in a variety of genres.
2. Employ writing processes such as planning, organizing, composing, and revising.
3. Use a variety of research methods to gather appropriate, credible information.
4. Evaluate sources, claims, and evidence for their relevance, credibility, and purpose.
5. Quote, paraphrase, and summarize sources ethically, citing and documenting them appropriately.
6. Integrate information from sources to effectively support claims as well as other purposes (to provide background information, evidence/examples, illustrate an alternative view, etc.).
7. Use an appropriate voice (including syntax and word choice).

ENGL 1410G. Introduction to Literature
3 Credits (3)
In this course, students will examine a variety of literary genres, including fiction, poetry, and drama. Students will identify common literary elements in each genre, understanding how specific elements influence meaning.
Learning Outcomes
1. Identify, define, and understand basic literary conventions and themes in fiction, poetry and drama.
2. Write reasonable, well-supported analyses of literature that ethically integrate evidence from texts.

ENGL 2130G. Advanced Composition
3 Credits (3)
This course is for students who are striving for fluency, maturity, clarity and significance in their writing. It is an intermediate writing course that builds on and refines writing skills acquired in previous courses. It focuses on non-fiction writing for the professions, business, science, technical fields, academe and/or the popular press. Short works of master writers are studied for ideas, style and structure.
Learning Outcomes
1. Students will examine and apply different writing styles and modes used by masters of personal essay and keep a reading response journal of assigned readings as demonstrated by scoring a 70% in faculty designed assignments.
2. Students will develop a sense of audience by discussing their papers with each other in small groups during class or by reading each other's papers and participating in positive, helpful peer reviews as demonstrated by scoring a 70% in faculty designed assignments.

ENGL 2210G. Professional & Technical Communication
3 Credits (3)
Professional and Technical Communication will introduce students to the different types of documents and correspondence that they will create in their professional careers. This course emphasizes the importance of audience, document design, and the use of technology in designing, developing, and delivering documents. This course will provide students with experience in professional correspondence and communicating technical information to a non-technical audience.
Prerequisite(s): Grade of C- or better in ENGL 1110G or ENGL 1110H or ENGL 1110M.
Learning Outcomes
1. Choose professional communication appropriate for audiences and situations.
2. Write in different genres of professional communication.
3. Identify the purpose of a work-related communication and assess the audiences' information.
4. Identify needs and organizational constraints.
5. Employ appropriate design/visuals to support and enhance various texts.
6. Demonstrate effective collaboration and presentation skills.
7. Integrate research and information from credible sources into professional communication.
ENGL 2210H. Professional and Technical Communication Honors
3 Credits (3)
Professional and Technical Communication writing for Crimson Scholars/Honors students will introduce students to the different types of documents and correspondence that they will create in their professional careers. This course emphasizes the importance of audience, document design, and the use of technology in designing, developing, and delivering documents. This course will provide students with experience in professional correspondence and communicating technical information to a non-technical audience. 3.5 GPA is also required. Restricted to Las Cruces campus only.
Prerequisite(s): grade of C- or better in ENGL 1110G or the equivalent; approval of the honors college.
Learning Outcomes
1. Choose professional communication appropriate for audiences and situations.
2. Write in different genres of professional communication.
3. Identify the purpose of a work-related communication and assess the audiences' informational needs and organizational constraints.
4. Employ appropriate design/visuals to support and enhance various texts.
5. Demonstrate effective collaboration and presentation skills.
6. Integrate research and information from credible sources into professional communication.

ENGL 2210M. Professional and Technical Communication for Multilingual Students
3 Credits (3)
Professional and Technical Communication will introduce students to the different types of documents and correspondence that they will create in their professional careers. This course emphasizes the importance of audience, document design, and the use of technology in designing, developing, and delivering documents. This course will provide students with experience in professional correspondence and communicating technical information to a non-technical audience. NMSU specific description: In this course, students will explore the unique advantages and challenges of being multilingual writers. This course is designed for international and domestic multilingual students.
Prerequisite: Grade of C- or better in ENGL 1110G or ENGL 1110H or ENGL 1110M.
Learning Outcomes
1. Choose professional communication appropriate for audiences and situations.
2. Write in different genres of professional communication.
3. Identify the purpose of a work-related communication and assess the audiences' informational needs and organizational constraints.
4. Employ appropriate design/visuals to support and enhance various texts.
5. Demonstrate effective collaboration and presentation skills.
6. Integrate research and information from credible sources into professional communication.

ENGL 2215G. Advanced Technical and Professional Communication
3 Credits (3)
Theory and practice of writing in technical and professional fields, individualized to each student’s field. Emphasizes efficient writing processes and effective written products. May be repeated up to 3 credits. Restricted to Las Cruces campus only.
Prerequisite(s): Junior or above standing, or consent of instructor.
Learning Outcomes
1. To complicate the definition of “technical and scientific communication” and its relationship(s) to studying and practicing "rhetoric."
2. To complicate our relationship to concepts like "science," "knowledge, "objectivity," neutrality, "clarity," etc.
3. To use a community-based approach to study and practice technical and scientific documents within various discourse communities.
4. To study and practice different genres (i.e. memos, letters, e-mails, reports, proposals, and instruction sets) attending to issues of audience and purpose within discourse communities.
5. To practice some mindful reading strategies that allow you to attend to the use of language and its material and discursive effects in different situations.
6. To examine the material effects of producing, circulating, and consuming technical and scientific texts on the bodies of people within different contexts.
7. To complicate our understanding of "ethics," "responsibility," and "accountability" toward ourselves and others.
8. To work collaboratively and individually to research, to analyze, and to write about public debates regarding the conduct of science and technology.
9. To understand and use basic principles of document design attending to issues of usability and accessibility.
10. To articulate the relationship between technical and scientific communication and issues of inclusion and social justice in the world.
ENGL 2221G. Writing in the Humanities and Social Science
3 Credits (3)
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. May be repeated up to 3 credits.
Prerequisite(s): Grade of C- or better in ENGL 1110G or ENGL 1110H, or ENGL 1110M.
Learning Outcomes
1. Develop the ability to interpret and respond to humanities and social sciences texts
2. Analyze and evaluate cultural artifacts such as texts, images, and practices as a means of academic inquiry
3. Critique arguments offered in the readings to determine the underlying methodology as well as underlying values
4. Construct a rhetorical argument with evidence appropriate for an explicit audience and purpose
5. Use written, visual, or oral strategies to persuade, inform, or engage, considering situation, audience, purpose, aesthetics, and diverse points of view
6. Practice effective research strategies, and integrate research correctly and ethically from credible sources
7. Understand and apply components of the writing process such as planning, collaborating, organizing, composing, revising, and editing

ENGL 2280. History of Argument
3 Credits (3)
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. Prerequisite(s): ENGL 1110G, or ENGL 1110GH, or ENGL 1110M.
Learning Outcomes
1. Understand how rhetoric, argument, and persuasion work. Become familiar with the key terms and various contexts in which rhetoric, argument, and persuasion function and the contingencies that influence their use and effectiveness;
2. be familiar with the broad history and major figures of western rhetoric;
3. apply a number of approaches used to analyze and construct/deconstruct rhetorical arguments, including (but not limited to) Aristotelian appeals and commonplaces, stasis theory, toulmin analysis, pentadic/dramatistic analysis, fallacy analysis, and rogerian analysis;
4. complete an analysis as well as design and present a project regarding a contemporary issue or concern about which you feel deep passion and commitment; and
5. Improve general critical thinking and communication skills, both oral and written.

ENGL 2310G. Introduction to Creative Writing
3 Credits (3)
This course will introduce students to the basic elements of creative writing, including short fiction, poetry, and creative nonfiction. Students will read and study published works as models, but the focus of this "workshop" course is on students revising and reflecting on their own writing. Throughout this course, students will be expected to read poetry, fiction, and nonfiction closely, and analyze the craft features employed. They will be expected to write frequently in each of these genres.
Prerequisite(s): ENGL 1110G or ENGL 1110H or ENGL 1110M.
Learning Outcomes
1. Participate in a constructive conversation and community about creative writing.
2. Read and critically engage with a variety of texts.
3. Compose creative works in various genres of creative writing.
4. Provide respectful, honest, and critical feedback to peers about their work.
5. Revise creative work based on peer feedback and critique.
6. Develop thoughtful workshop reflection on students' own writing and writing process.
7. Evaluate and engage with publication process.

ENGL 2381. Script Development and Storyboarding
3 Credits (3)
Examines effective writing principles for creating storyboards that communicate the overall picture of a project, timing, scene complexity, emotion and resource requirements. Crosslisted with: FDMA 2381.
Learning Outcomes
1. develop a story idea into a complete storyboard
2. describe and visualize the creative aspects of a media project from conception to completion
3. deliver a scene in the professional script format
4. the ability to conceive, illustrate and plan a visual project
5. proficiency in oral, written, and visual communication via storyboarding, script writing and verbal presentations
ENGL 2382. Narrative: Principles of Story Across the Media
3 Credits (3)
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: FDMA 2382
Learning Outcomes
1. Identify use the building blocks of storytelling: plot, theme, character, imagery, symbolism and point of view
2. Develop these building blocks into a cohesive narrative within a written document
3. Effectively communicate in different written formats
4. Create design documents for varied genres of media: narrative short, documentary, animation, commercial/industrial video, computer game
5. Describe how a written narrative can be translated into a visual medium

ENGL 2520G. Film as Literature
3 Credits (3+3P)
The purpose of this course is to teach students how to analyze film as a visual text. Students will learn to analyze films, film techniques, eras, and genres. Students will also identify significant trends and developments in film-making, examining the ways in which film reflects and creates cultural trends and values.
Learning Outcomes
1. Develop an understanding of the cultural, historical, and technical contexts for various films.
2. Identify, define, and analyze basic film techniques used in different genres and time periods.
3. Analyze how film uses literature by studying different sources of adaptation.
4. Demonstrate an understanding of film in its various aspects by writing film analysis, reviews, and/or other projects.

ENGL 2521. The Bible as Literature
3 Credits (3)
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.
Learning Outcomes
1. Develop and articulate historically informed and textually supported arguments regarding the form and meaning of biblical texts
2. Express arguments and explication in clear, organized,
3. Understand the Jewish and Christian scriptures as cultural artifacts, using some fundamental techniques of literary analysis and interpretation, especially thematic interpretation, stylistic analysis, narrative analysis, poetics, and the rhetorical analysis of figurative language.
4. Use socio-historically informed interpretive methods focused on these fundamental contextual questions: 1) who probably wrote and edited these texts, 2) why and how they most likely did so, 3) how their earliest audiences probably responded to them, and 4) why and how they were later combined to form the canonical Jewish and Christian bibles read today.
5. Know in detail substantial selections of representative, influential, and historically informative biblical texts
6. Distinguish literary critical and historical analysis of the Bible from those based on faith, tradition, authority, and theology
7. Recognize, understand, and analyze the forms, genres, and techniques used by biblical authors
8. Become familiar with and be able to use essential knowledge of the historical, cultural, and geographical contexts of Biblical writing
9. Learn how evaluate texts as historical documents, as well as how doing so relates to and differs from literary critical analysis and interpretation
10. Become familiar with common and influential scholarly, critical, and aesthetic ways of reading Biblical texts from a contemporary perspective
11. Understand the cultural influence of the Bible and its relevance for other areas of scholarly and artistic work

ENGL 2610. American Literature I
3 Credits (3)
This course surveys American literature from the colonial period to the mid-nineteenth century. This course provides students with the contexts and documents necessary to understand the origins of American Literature and the aesthetic, cultural, and ideological debates central to early American culture.
Learning Outcomes
1. Recognize the traditions of American literature and their connection to issues of culture, race, class, and gender.
2. Demonstrate familiarity with a variety of major works by American authors.
3. Explore the various influences and sources of American literature.
4. Apply effective analytic and interpretive strategies to American literary works using academic conventions of citation and style.
ENGL 2620. American Literature II  
3 Credits (3)  
This course surveys American literature from the mid-nineteenth-century to the contemporary period. This course provides students with the contexts and documents necessary to understand American literature and the aesthetic, cultural, and ideological debates central to American culture.  
Learning Outcomes  
1. Recognize the traditions of American literature and their connection to issues of culture, race, class, and gender.  
2. Demonstrate familiarity with a variety of major works by American authors.  
3. Explore the various influences and sources of American literature.  
4. Apply effective analytic and interpretive strategies to American literary works using academic conventions of citation and style.  

ENGL 2630. British Literature I  
3 Credits (3)  
This course offers a study of British literature from its origins in Old English to the 18th century. This survey covers specific literary works—essays, short stories, novels, poems, and plays—as well as the social, cultural, and intellectual currents that influenced the literature.  
Learning Outcomes  
1. Read and discuss representative works of British writers from its origins in Old English to the 18th century to understand cultural and historical movements which influenced those writers and their works.  
2. Identify the characteristics of various British literary genres, such as the essay, novel, short story, poetry, and dramatic literature.  
3. Apply effective analytic and interpretive strategies to British literary works using academic conventions of citation and style.  

ENGL 2640. British Literature II  
3 Credits (3)  
This course offers a study of British literature from the 18th century to the present. This survey covers specific literary works—essays, short stories, novels, poems, and plays—as well as the social, cultural, and intellectual currents that influenced the literature.  
Learning Outcomes  
1. Read and discuss representative works of British writers from the 18th century to the present to understand cultural and historical movements, which influenced those writers and their works.  
2. Identify the characteristics of various British literary genres, such as the essay, novel, short story, poetry, and dramatic literature.  
3. Apply effective analytic and interpretive strategies to British literary works using academic conventions of citation and style.  

ENGL 2650G. World Literature I  
3 Credits (3)  
In this course, students will read representative world masterpieces from ancient, medieval and Renaissance literature. Students will broaden their understanding of literature and their knowledge of other cultures through exploration of how literature represents individuals, ideas and customs of the world cultures. The course focuses strongly on examining the ways literature and culture intersect and define each other.  
Learning Outcomes  
1. Identify and comprehend key authors and literary works from ancient periods to the Enlightenment.  
2. Understand each text's historical and cultural context.  
3. Identify and analyze a variety of literary forms, including poetry, plays, and philosophical and religious texts.  
4. Compare works from different cultures and historical periods examining genre, style, and content or theme.  
5. Analyze how literary works reflect historical, national, cultural, and ethnic differences.  

ENGL 2996. Special Topics  
1-3 Credits  
Emphasis on a literary and/or writing subject chosen for the semester. Repeatable for an unlimited credit under different subtitles.  
Learning Outcomes  
1. Varies  

ENGR-ENGINEERING (ENGR)  

ENGR 100G. Introduction to Engineering  
3 Credits (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. May be repeated up to 3 credits.  
Prerequisite(s)/Corequisite(s): MATH 1220G or above.  
Learning Outcomes  
1. Analyze the engineering road maps and have a solid curriculum plan for each semester including summers.  
2. Discuss the importance of information on engineering student organizations.  
3. Demonstrate an understanding of the design process from initial conception to final solution through the application of critical thinking while learning important team building skills approaches to problem solving.  
4. Identify the different engineering fields, the engineering profession, career paths open to engineers, and the process to professional licensure.  
5. Apply clear communication and critical thinking skills by collecting, organizing, and analyzing data in a complete, clearly written, and oral presentation of their work.  
6. Make use of basic knowledge and skills in Microsoft Excel to complete engineering assignments.  
7. Identify, compute, and apply how dimensions, length, time, mass, force, temperature, electric current, energy and power, and related parameters are related to the different fields of engineering.  
8. recognize ethical and professional responsibilities in engineering situations and make informed judgements.
ENGR 100GH. Introduction to Engineering Honors
3 Credits (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. May be repeated up to 3 credits. Crosslisted with: ENGR 100.
Prerequisite(s)/Corequisite(s): MATH 1220G or above.
Learning Outcomes
1. Analyze the engineering road maps and have a solid curriculum plan for each semester including summers.
2. Discuss the importance of information on engineering student organizations.
3. Demonstrate an understanding of the design process from initial conception to final solution through the application of critical thinking while learning important team building skills approaches to problem solving.
4. Identify the different engineering fields, the engineering profession, career paths open to engineers, and the process to professional licensure.
5. Apply clear communication and critical thinking skills by collecting, organizing, and analyzing data in a complete, clearly written, and oral presentation of their work.
6. Make use of basic knowledge and skills in Microsoft Excel to complete engineering assignments.
7. Identify, compute, and apply how dimensions, length, time, mass, force, temperature, electric current, energy and power, and related parameters are related to the different fields of engineering.
8. recognize ethical and professional responsibilities in engineering situations and make informed judgements.

ENGR 110. Introduction to Engineering Design
3 Credits (2+3P)
Sketching and orthographic projection. Covers detail and assembly working drawings, dimensioning, tolerance specification, and design project
Learning Outcomes
1. Students will learn the fundamentals of part modeling and assemblies using modeling techniques in the SolidWorks solid modeling software.
2. They will learn how to put these parts and assemblies into production drawings using proper Geometric Dimensioning.

ENGR 111. Mathematics for Engineering Applications
3 Credits (3)
An introduction to engineering mathematics and basic programming skills needed to perform elementary data manipulation and analysis. Consent of Instructor required.
Prerequisite(s)/Corequisite(s): MATH 1250G. Prerequisite(s): MATH 1220G.

ENGR 120. DC Circuit Analysis
4 Credits (3+3P)
This course provides an introduction DC circuit analysis using Ohm's law, Kirchhoff laws, Thevenin's and Norton's theorems.
Prerequisite: MATH 1250G or MATH 1430G.
Learning Outcomes
1. Analyze and design DC circuits, including ideal op-amps, using concepts of voltage, current, power, Kirchhoff's laws, and network theorems. Design simple systems involving dc circuits Work and learn in teams.

ENGR 130. Digital Logic
4 Credits (3+3P)
This course introduces logic design and the basic building blocks used in digital systems, as well as introducing applications of digital integrated circuits. Topics include Numbering systems (binary & hexadecimal), Boolean algebra and digital logic theory, simple logic circuits, combinational logic, and sequential logic, and applications such as ALU (Arithmetic Logic Units), multiplexers, encoders, counters, and registers. These basic logic units are the main parts of microprocessors. Includes hands-on labs and software designs.
Prerequisite/Corequisite: ENGR 120.
Learning Outcomes
1. Demonstrate ability to convert numerical values to the commonly used digital representations and their use for arithmetic and logical functions. Formulate and solve problems related to Boolean logic functions and truth tables and using them to simplify logic expressions. Formulate and solve problems related to sequential logic functions, and the ability to integrate with combinational logic to produce a simple state machine. Formulate and solve problems related to common integrated circuit issues, such as logic voltage levels, propagation delay, and fan-out.

ENGR 140. Arduino Programming
4 Credits (3+3P)
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.
Prerequisite: MATH 1250G or MATH 1430G.
Prerequisite/Corequisite: E T 182 or ENGR 130.
Learning Outcomes
1. Set up and use a rich programming environment for programming with Arduino hardware Analyze existing code Employ effective use of basic programming and basic troubleshooting. Write, debug and test code given software requirements Apply testing and documentation best practices Transfer programming knowledge and apply coding knowledge
ENGR 190. Introduction to Engineering Mathematics
4 Credits (4)
Engineering applications involving involved Math topics most heavily used in first and second-year engineering courses. Topics include engineering applications of algebra, trigonometry, vectors, complex numbers, sinusoids and signals, systems of equations and matrices, derivatives, integrals and differential equations.
Prerequisite: MATH 1250G or higher.
Learning Outcomes
1. Ability to solve systems of linear equations by use of matrices Ability to use complex numbers and periodic function to solve engineering problems
2. Ability to solve problems using various coordinate system Write and Solve problems with 2-D 3D vectors Write and Solve problems with derivatives Write and solve problems with integrals

ENGR 198. Special Topics in Engineering
1-3 Credits
Directed individual study of topics in engineering. Written reports covering work required. May be repeated for a maximum of 6 credits.
Restricted to engineering majors. Graded S/U.
Prerequisite: consent of academic dean.

ENGR 230. AC Circuit Analysis
4 Credits (3+3P)
This course provides an introduction to Circuit analysis techniques, RLC transients, phasors, filter response, and an introduction to discrete electronic devices.
Prerequisite: ENGR 120 and (MATH 1521G or MATH 1521H or MATH 1440 or ENGR 190).
Learning Outcomes
1. Analyze and design AC circuits, including ideal op-amps, using concepts of voltage, current, power, Kirchhoff's laws, and network theorems. Design simple systems involving AC circuits
2. Work and learn in teams.

ENGR 233. Engineering Mechanics I
3 Credits (3)
Engineering mechanics using vector methods. Force systems, resultants, equilibrium, distributed forces, area moments, and friction.
Prerequisite(s)/Corequisite(s): PHYS 1310G. Prerequisite: MATH 1521G or MATH 1521H or ENGR 190.
Learning Outcomes
1. Have an understanding of the force systems, resultants, equilibrium, distributed forces, area moments, and friction; Be able to apply the acquired knowledge to formulate, solve and interpret solutions of engineering mechanics problems

ENGR 234. Engineering Mechanics II
3 Credits (3)
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, C E 233, or ENGR 233.
Learning Outcomes
1. Have a good understanding of the kinetics of particles, kinematics and kinetics rigid bodies, energy and momentum principles, and kinetics of rigid bodies. Be able to apply the acquired knowledge to formulate, solve and interpret solutions of engineering mechanics problems

ENTR-ENTREPRENEURSHIP

ENTR 1110. Entrepreneurship
3 Credits (3)
Introduces students to the concept of entrepreneurship and to the process of business startups.
Prerequisite(s): BUSA 1110.
Learning Outcomes
1. Identify the unique characteristics of an entrepreneur.
2. Identify opportunities and conduct needs analysis.
3. Develop value proposition/market fit for proposed products and services.
4. Develop an appropriate business model.
5. Identify availability of necessary resources.

ENVS-ENVIRONMENTAL SCIENCE

ENVS 1110G. Environmental Science I
4 Credits (3+2P)
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.
Learning Outcomes
1. Students will learn to critically analyze cause-and-effect relationships in the environment
2. Students will integrate and synthesize knowledge and draw appropriate conclusions based on the scientific method

ENVS 2111. Environmental Engineering and Science
3 Credits (3)
Principles in environmental engineering and science: physical chemical systems and biological processes as applied to pollution control. Crosslisted with: C E 256
Prerequisite: CHEM 1215G and MATH 1511G or ENGR 190.
Learning Outcomes
1. To understand the nature of water quality parameters in the context of Civil Engineering and Environmental Science (Water Treatment/ Wastewater Treatment/Environmental Science) To learn to apply engineering and scientific solutions to water quality problems To understand environmental regulations and their consequences on the design of pollution control systems

ENVS 2111L. Environmental Science Laboratory
1 Credit (1)
Laboratory experiments associated with the material presented in ENVS 2111. Same as C E 256 L.
Corequisite(s): ENVS 2111.
Learning Outcomes
1. List typical analyses commonly performed to evaluate physical, chemical, and microbiological parameters used to describe water quality.
2. Follow experimental procedures listed in the class laboratory manual, or other publications such as Standards Methods, to perform common water quality analyses.
3. Evaluate, analyze, and discuss experimental results and present the conclusions in the form of a professional report
EPWS-ETMLGY/PLNT PTHLGY/WD SCI (EPWS)

EPWS 1110. Applied Biology
3 Credits (3)
Introduction to applied biology and ecology focusing on insects, plants and pathogens in natural areas, crops and urban settings. EPWS 1110L is strongly recommended to take in the same semester. May be repeated up to 3 credits. Restricted to Las Cruces campus only.

Learning Outcomes
1. Students will learn about the Department of Entomology Plant Pathology and Weed Science and will have the opportunity to meet the Las Cruces-based faculty in the department.
2. By the end of this course students will have gained a broad understanding of the pests in a wide range of systems, their interactions with other organisms, and the methods available to minimize the influence of pests on target commodities.

EPWS 1110L. Applied Biology Lab
1 Credit (1)
Study of applied biology and ecology of insects, plants and pathogens in natural areas, crops, and urban settings. EPWS 1110 strongly recommended to take in the same semester. May be repeated up to 1 credits. Restricted to Las Cruces campus only.

Learning Outcomes
1. Students will learn about the Department of Entomology Plant Pathology and Weed Science and will have the opportunity to meet the Las Cruces-based faculty in the department.
2. By the end of this course students will have gained a broad understanding of the pests in a wide range of systems, their interactions with other organisms, and the methods available to minimize the influence of pests on target commodities.

EPWS 2996. Special Topics
1-4 Credits
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.

Learning Outcomes
1. Varies

FCSC-FAMILY AND CONSUMER SCIENCES

FCSC 2250. Overview of Family and Consumer Sciences Teaching
3 Credits (3)
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.

Learning Outcomes
1. Explain the foci of FCS—past, present and future.
2. Begin to develop a professional role in FCS.
3. Formulate a personal philosophy of FCS, and of teaching.
4. Explain the teaching process.
5. Give examples of roles, responsibilities and qualities of effective and ethical teachers.
6. Assess the characteristics, backgrounds, and needs of learner audiences.
7. Explain various learning theories/principles.
8. Illustrate how various input factors influence teaching decisions.
9. Plan a researched based student-centered lesson with a learning activity in a FCS content area.
10. Give examples of ways to evaluate learner growth.
11. Present a FCS content-based lesson effectively to learners using PowerPoint presentation software and a selected teaching method.
12. Evaluate one’s own teaching and the teaching of others.
13. Exhibit increased confidence in one’s abilities as a teacher/educator.
14. Exhibit excitement about assuming the teacher/educator role.
FCSC 2330. Housing and Interior Design
3 Credits (3)
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. Restricted to Las Cruces campus only.

Learning Outcomes
1. Differentiate between different architectural designs (i.e., Cape Cod, contemporary, craftsman, ranch, southern colonial, Spanish, Victorian, pueblo, New Mexican territorial, and territorial revival) and be able to identify historical, cultural, demographic, geographical, and environmental influences on style and aesthetics.
2. Analyze the fundamentals of housing for all families and cultures and understand the role housing plays in the ecological model of human ecology.
3. Define elements of design as related to housing and interiors (i.e., color, form, line, space texture).
4. Define principles of design as related to housing and interiors (i.e., balance emphasis, harmony, proportion, unity).
5. Compare and contrast the different periods of interior design from the 20th century to the present.
6. Analyze the influence of historical and cultural factors in the development of current interior trends.
7. Select and arrange interiors that are functional and aesthetically pleasing to designated interior design situations.
8. Identify, describe and make application of textiles as related to various furniture and interior design styles.
9. Design a three-dimensional tiny house or an interior space, using all concepts learned.

FCST 2110. Infancy and Early Childhood in the Family
3 Credits (3)
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. Restricted to Las Cruces campus only.

Learning Outcomes
1. Evaluate how genes and the environment interact to impact human development. Describe the major events during the three periods of prenatal development. Assess the effects of environmental influences on the developing fetus. Outline the stages of birth and medical interventions that may be used. Discuss the capacities of the newborn baby. Evaluate how individuals and couples change during the transition to parenthood. Analyze the physical, cognitive, and social-emotional development of the child from birth through age 5. Formulate ways that parents and professionals can promote the development of the child from birth to age 5.

FCST 2135. Adolescent Development and the Family
3 Credits (3)
Research and theory relevant to the physical, mental, social, and emotional development of the children ages 12 to 18. Attitudes, knowledge, and skills related to working with adolescents in the family system. Observation in a variety of settings may be required. Restricted to Las Cruces campus only.

Learning Outcomes
1. Compare adolescents of today with adolescents of the past.
2. Describe the physical, cognitive, and psychosocial development of the adolescent in the family system and evaluate individual differences in development.
3. Compare and contrast ways in which culture impacts adolescent development.
4. Assess effective parenting strategies with adolescents.
5. Analyze the influence of family, peers, school, and work on adolescent development.

FCST 2140. Adult Development and Aging
3 Credits (3)
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. Restricted to Las Cruces campus only.

Learning Outcomes
1. Compare and contrast theories of adult development and aging and apply theories to adult behavior.
2. Distinguish the similarities and differences of physical, emotional, cognitive, and psychosocial aspects of adult development.
3. Describe multicultural factors that impact attitudes toward aging and coping with aging family members.
4. Evaluate ways in which special issues (including but limited to Alzheimer's Disease, heart disease, end of life issues) impact aging.
5. Devise a conceptualization of one's own perspective in dealing with aging and aging family members.
FDMA-FILM & DIGITAL MEDIA ARTS

FDMA 1110. Film History
3 Credits (3)
This course surveys the history of cinema - investigating the process by which the original "cinema of attractions" evolved into a globally dominant form of visual storytelling. We will explore the development of cinema both as an art form and as an industry, and consider the technological, economic, cultural factors, and key international movements that shape it.

**Learning Outcomes**
1. Develop appreciation for the history of cinema.
2. Develop knowledge of the key eras in the history of US cinema.
3. Learn the characteristics of major movements in international cinema.
4. Explain technological innovations that were necessary for, and integral to, the advancement of cinema.
5. Recognize the various elements that go into telling a story in cinema.

FDMA 1120. Desktop Publishing
3 Credits (2+2P)
This course is designed to teach introductory skills for designing and creating publications and presentations with layout software. The course will focus on graphics and typographic design, fonts, and other skills for print and web publishing.

**Learning Outcomes**
1. Demonstrate knowledge of fundamental features and navigation of desktop publishing software.
2. Combine text and images for effective communication.
3. Develop a balanced composition through use of color, contrast, and alignment.
4. Place images within a composition and wrap around text.
5. Produce documents with professional layout and typography skills.
6. Create attractive and effective designs.
7. Combine knowledge of typography, images, and design principles to produce professional print and web media.
8. Create or add to a professional design portfolio for future use.

FDMA 1210. Digital Video Production I
3 Credits (2+4P)
An introduction to digital video production. Students learn camera operation, lights and audio equipment. Hands-on production is completed in the studio and on location.

**Learning Outcomes**
1. Plan and produce a digital video project
2. Apply post-production workflow
3. Work in team and as individual to complete digital video projects.

FDMA 1220. Introduction to Digital Video Editing
3 Credits (3)
In this course, students learn the basics of the post-production process for non-linear video editing. Students work with multiple video formats and create short movies for multiple distribution platforms. Skills include media management and professional terminology. Sections on the Main Campus will be restricted to CMI students.

**Learning Outcomes**
1. Define concepts related to digital video editing.
2. Use non-linear video editing software for editing a short film
3. Enhance storytelling through the use of continuity, timing, cutaways, intercutting, compositing, transitioning, jump cutting, montaging and animating.
4. Use text, titles, transitions, video effects, sound effects, dialogue, and visual assets for digital video editing.

FDMA 1260. Introduction to Digital Media
1-3 Credits (1-3)
Explores concepts of how text, graphics, sound, images and video come together in a digital media program and researching new trends and current issues related to media applications and design. Students will be involved in teamwork, communication and workplace interaction simulation. May be repeated up to 12 credits. Restricted to Community Colleges campuses only.

**Learning Outcomes**
1. Describe and identify the principal components and terminology of digital media.
2. Analyze and examine the use of digital media as a communication tool
3. Plan and implement a digital media project
5. Create projects using a variety of digital media tools
6. Demonstrate a working knowledge of copyright and usage rights
7. Present completed projects in a professional manner for critique.

FDMA 1360. Web Design I
3 Credits (2+2P)
This course provides an introduction to web development techniques, theory, and design. Students will learn HTML, CSS application, and strategies for effective site navigation and design, along with industry standard web editing software to develop various websites. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.

**Prerequisite(s):** ARTS 1520 OR FDMA 1515.

**Learning Outcomes**
1. Acquire and utilize web design terminology.
2. Create basic web pages using HTML.
3. Demonstrate how to use industry-standard, web editing software.
4. Design professional pages that are easy to navigate and quick to load.
5. Develop a basic comprehension of CSS
6. Prepare and export a variety of graphics to be used online.
7. Compare and contrast designing for web media vs. print media.
8. Analyze the importance of web presence in today's business/social climate
FDMA 1410. Audio Production I
3 Credits (2+2P)
Students will learn about and apply essential tools and techniques in analog and digital audio production. Topics include acoustic science, microphones, recording and mixing techniques, analog and digital audio hardware and software, including, multi-track, computer-based recording and editing systems. Restricted to: Community Colleges only.
Prerequisite(s): FDMA 1210 and FDMA 2410.
Learning Outcomes
1. Apply tools and techniques in analog and digital audio production
2. Illustrate the fundamentals of acoustic science.
3. Model professional behavior used in audio recording.

FDMA 1415. Principles of Sound
3 Credits (2+2P)
The creation of a professional quality original media soundtrack is possible for relatively low production/post production cost. This class is designed to give the student an overview of creating sound for a variety of digital media. Topics include acoustic principles, sound design, audio hardware, recording techniques; and editing, processing, and multi-track mixing using software applications. Restricted to: Community Colleges only.
Prerequisite(s)/Corequisite(s): FDMA 1220.
Learning Outcomes
1. Record and edit wild sound effects and synced dialogue
2. Discover, upload, and edit on-line music, ambience and sound effect loops
3. Implement audio design theories
4. Create an aesthetic soundtrack which incorporates multiple elements and dimensions
5. Design, edit, process, mix and master a synced multi-track soundtrack
6. Demonstrate capable use of digital audio production and post-production workflow
7. Produce short audio projects which meet media industry technical standards

FDMA 1510. Introduction to 3D Animation
3 Credits (3)
This course provides an overview of 3D animation production processes. 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. Students will review and critique other’s animation, as well as plan and produce original animation for review by classmates and as part of a CGI demo reel.
Prerequisite(s): FDMA 2382 or FDMA 2381 or consent of instructor.
Learning Outcomes
1. Demonstrate a fundamental understanding of 3D animation history and principles.
2. Analyze animation work of other artists.
3. Appropriately utilize the various media technologies for digital 3D animation.
4. Demonstrate and apply basic techniques of digital 3D animation.
5. Demonstrate and apply basic processes of creating CGI for a narrative.
6. Apply some basic strategies for developing and creating a story visually, and create original animations.
7. Present original animations to instructor and classmates for critique.
8. Create a CGI demo reel of work completed during the course.

FDMA 1515. Introduction to Digital Image Editing - Photoshop
3 Credits (2+2P)
In this course, students will learn how to use the tools in Adobe Photoshop to create new images and edit existing images. Tools used will include selections, layers, and adjustments, among other pixel editing tools. Basic composition and output will be emphasized in all projects. May be repeated for a maximum of 6 credits.
Learning Outcomes
1. Make and refine selections
2. Adjust color and tone in an image
3. Eliminate unwanted objects in an image
4. Apply layers to organize and create effects
5. Create brushes, styles and vector shapes
6. Prepare image for print and screen output
7. Apply masking and layers to non-destructively edit an image
8. Effectively utilize blending modes and layer styles
9. Apply adjustment layers
10. Apply design principles including typography

FDMA 1531. Evolution of Electronic Games
3 Credits (2+2P)
Focus on the evolution of video games and how they have shaped mainstream entertainment. May be repeated up to 6 credits.
FDMA 1535. Introduction to Illustrator
3 Credits (2+2P)
Students receive instruction on vector graphics creation using vector illustration software. The students will create professional-quality artwork for print publishing and multimedia graphics. Instruction includes creating and manipulating basic shapes, drawing with the pen tool, using various brushes, working with type and preparing graphics for web, print, and digital publication. May be repeated for a maximum of 6 credits.
Learning Outcomes
1. Apply a variety of shape blending options
2. Create and apply new gradients
3. Apply Gradient Meshes and Envelopes
4. Create symbols, brushes and vector shapes
5. Apply Pathfinder and other effects
6. Effectively utilize the pen tool to draw and edit shapes
7. Effectively utilize Vector tools
8. Prepare image for print and screen output
9. Apply clipping masks
10. Prepare image for use in another program
11. Apply design principles including typography

FDMA 1536. Advanced Computer Illustration
3 Credits (2+2P)
Advanced techniques in 2D vector drawing and fundamentals of 3D illustration for use in print, web, and multimedia applications. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): FDMA 1535.
Learning Outcomes
1. Demonstrate proficiency in using advanced features of Illustrator.
2. Identify and create different illustrator/art styles using advanced techniques for shading, perspective, light, reflection.
3. Produce high quality digital imagery incorporating basic principles of composition.
4. Create a series of illustrations demonstrating a design competency in layout foundation and illustrative moods or client/project based solutions.
5. Create high quality portfolio pieces that demonstrate an advanced knowledge of design, composition and Illustrator techniques.
6. The students will produce finished printed portfolio pieces demonstrating a comprehensive knowledge of typographical, design, illustrative and layout skills

FDMA 1545. Introduction to Photography & Digital Imaging
3 Credits (2+2P)
This course is a study of the principles and techniques of photography using digital equipment, and discusses how digital cameras, imaging editing, and technology have changed the world of photography. Students will learn about studies in resolution, lighting, software, editing, printing, and web applications. They will gain fundamental knowledge in the rapidly expanding technology of photography and imaging, and be able to incorporate the knowledge into all areas of digital graphics.
Learning Outcomes
1. Exhibit proper usage of the principles and techniques of photography using digital equipment.
2. Utilize features and techniques of a digital camera with proper use of lenses, settings, and flashes.
3. Create photo collections that represent proper use of technical skills.
4. Demonstrate proficiency in planning, lighting, capturing, and distributing photographic projects which show ability to create photographs artistically and to tell a story or express an idea.
5. Utilize appropriate software to create original projects.
6. Demonstrate knowledge in post-production of photos as to sizing, sampling, resolution, and exporting.
7. Produce original projects which respect intellectual property of others.
8. Create a digital portfolio of work completed during the course.

FDMA 1555. Introduction to the Creative Media Industry
3 Credits (3)
This class is an introductory course for students who are beginning their understanding of Media and how it affects them and our society. It offers a broad-stroked view of the entire industry including Marketing, Production, History, Jobs, Design, Architecture, New Media Literacy, and industry standards. Students will listen to experts in the field, get involved in open discussions about the industry and use new information to complete hands-on individual & group assignments.
Learning Outcomes
1. The basic philosophies and methods that guide people working in the Creative Media industry.
2. Knowledge of a wide variety of different jobs, qualifications and paradigms used in the industry.
3. Marketing, Production, Budgets, History, New Media, Inspiration and other aspects of the industry.
4. An accurate view of the Creative Media field.
FDMA 1535. Principles of Design
3 Credits (2+2P)
This course will explore how we see and use visuals to communicate information. Students will develop critical thinking skills in applying concepts of basic design principles. Students will apply the concepts with hands-on and analysis assignments. These concepts will then be applied to design for advertising, print, digital media, and web design. The business of design will also be covered with emphasis on client relations and networking. Restricted to: Community Colleges only. Prerequisite(s): FDMA 1535

Learning Outcomes
1. Practice Creativity
2. Plan a Design project
3. Demonstrate the effective use of Emphasis Contrast
4. Demonstrate the effective use of Balance and Alignment
5. Demonstrate the effective use of Harmony and Repetition
6. Demonstrate the effective use of Flow, Movement, and Rhythm
7. Demonstrate the effective use of Simplicity and Economy
8. Effectively apply basic color theory
9. Demonstrate the effective use of Typography principles
10. Apply design principles to Screen Print Projects
11. Develop client relations

FDMA 1710. 2D Animation
3 Credits (2+2P)
Concepts and techniques in storyboarding and creating interactive 2D animations for web, multimedia and video. Prerequisite(s): FDMA 1535.

Learning Outcomes
1. Be able to correctly storyboard an animation scene
2. Define and demonstrate basic animation terminology and principles.
3. Produce a complete hand drawn animation using industry standard software and processes.

FDMA 1715. 2-D COMPOSING & FX
3 Credits (3)
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, shading, and digital effects so that it can achieve a dynamic, professionally rendered look. Restricted to Las Cruces campus only.

Learning Outcomes
1. The goal of this class is for students to learn how to use advanced compositing and effects tools in order to achieve a more dynamic and professional visual look for their animations or motion graphics.
2. By the end of the class, you should be proficient animation compositors that can assemble and
3. Synthesize a basic animation into a rendered, visually sophisticated piece.
4. Students who pass this class will have a basic to intermediate knowledge of Adobe After Effects

FDMA 1720. 3-D Character Design
3 Credits (2+4P)
Focus on designing a character and then taking that design and building it in 3D using intermediate modeling techniques. May be repeated for a maximum of 6 credits. Prerequisite(s): FDMA 1510 or FDMA 2530.

Learning Outcomes
1. Translate concept art into a low and high resolution 3D model using proper modeling techniques
2. Use Polygon modeling techniques to create a 3D character
3. Use UVs and utilize Adobe Photoshop to texture a model.

FDMA 1996. Selected Topics
1-4 Credits (1-4)
Specific titles to be announced in the Schedule of Classes. May be repeated for a maximum of 18 credits. Restricted to Community Colleges campuses only.

Learning Outcomes
1. Varies

FDMA 2111. Environmental Scene Design
3 Credits (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(s): FDMA 1510 or FDMA 2530.

FDMA 2120. Film Crew I/ Introduction to Film and Media Workflow
9 Credits (9)
An introduction to the film industry. This class teaches film production processes, film crew hierarchy, film production set-safety and etiquette and provides hands-on training in industry standard film production equipment. Students complete the semester by participating as a below-the-line crew member on a short film. Restricted to: Community Colleges only.

Learning Outcomes
1. Explain film production processes; Interpret call sheets and deal memos, model basic on-set protocols and professional behavior
2. Assist producers and directors in completing a professional film project
3. Work effectively in production crew positions in a group environment.
4. Recognize and articulate specific film production structure, from original concept to final release

FDMA 2125. Film Crew II
9 Credits (9)
The second course designed to train students to become working members of film crews. It will be taught by working film professionals. Content will be lecture and hands-on. Students complete the semester by working as part of an actual film crew as below-the-line and above-the-line crew members. Restricted to: Community Colleges only. Prerequisite(s): FDMA 2120.

Learning Outcomes
1. Understand film production processes used to produce a film
2. Manage craft area job functions
3. Model on-set protocols and professional behaviors
4. Assist producers and directors in completing a professional film project
FDMA 2150. Desktop Publishing II
3 Credits (2+2P)
This class will enhance and build upon student layout/design skills developed in the Introduction to Desktop Publishing course, incorporating intermediate to advanced concepts in typography and layout design. Upon completion of this course, students will be able to use page layout software to prepare a variety of documents for presentation and critique, including newsletters, instructional flyers, and other complex design/typographic pieces. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): FDMA 1120.
Learning Outcomes
1. Build upon knowledge of design and design terminology.
2. Exhibit intermediate to advanced design principles using type, layout, and color.
3. Demonstrate skill in intermediate to advanced concepts and features of page layout software.
4. Exhibit knowledge of styles, tables, images and clipping paths and interactive documents as well as printing preparations and procedures.
5. Create layouts for print, web, and other media that demonstrate an intermediate to advanced knowledge in typography and layout design.
6. Format and produce newsletters and instructional flyers, as well as larger, complex projects such as packaging mechanicals, multiple master page documents, and books.
7. Assess works of graphic design for quality and effectiveness.
8. Utilize produced material to create or add to a design portfolio for future use.

FDMA 2210. Digital Video Production II
3 Credits (2+2P)
Advanced techniques of the tools and application of professional filmmaking. May be repeated for a maximum of 6 credits.
Prerequisite: FDMA 1210.
Learning Outcomes
1. Demonstrate the ability to produce and manage a video project: Produce a script, storyboard, and production schedule for a video project designed for a specific audience.
2. Demonstrate proficiency in producing quality digital video footage and audio tracks: Shoot to the script and storyboard using a variety of camera and lighting techniques; Produce a finished complex sound track including narration, music, and sound effect.
3. Demonstrate ability to produce and edit a professional quality video project: Integrate all production aspects of the project including video, audio, graphics, titles, transitions, and effects. Guide the project through the final production stages.
4. Develop competency in digital video distribution using various formats and techniques: Distribute project in various formats which could include DVD and web posting.

FDMA 2211. Digital Design Studio
1-3 Credits
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. May be repeated for a maximum of 6 credits.
Prerequisite(s): FDMA 1220.
Learning Outcomes
1. Demonstrate competency in the use of InDesign software.
2. Create appropriate visual solutions based on target marketing information.
3. Demonstrate competency in the design and production of advertising and promotional materials.
4. Present ideas and concepts effectively and competently.
5. Visually demonstrate design solutions to be used in a portfolio.

FDMA 2241. Advanced Camera Techniques
3 Credits (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(s): FDMA 1210.
Learning Outcomes
1. Students knowledge of high-end video camera operation and features.
2. Students must know all the working features of the video production equipment being used during the course in order to achieve the desired footage as required by the instructor.
3. Demonstrate proficiency in producing quality digital video footage.
4. Individuals must acquire the knowledge of different shooting styles in different productions situations and use those acquired skills to produce the appropriate video footage.
5. Using the proper lighting in different on location shooting styles.
6. Skill of each individual utilizing the usage of high-end camera equipment such as dollies, cranes and Steadicam.
7. Each individual must work as a team player to create professional style video footage.

FDMA 2285. Digital Video Production and Editing II
3 Credits (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. Restricted to Community Colleges campuses only. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): FDMA 1220.
Learning Outcomes
1. Intermediate to advanced video editing create short films and training videos, create TV quality commercials, direct a news broadcast, and work as a mentor to students on digital media equipment.

FDMA 2287. Digital Design Studio
1-3 Credits
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. May be repeated for a maximum of 6 credits.
Prerequisite(s): FDMA 1630 or ARTS 1712.
Learning Outcomes
1. Demonstrate competency in the use of InDesign software.
2. Create appropriate visual solutions based on target marketing information.
3. Demonstrate competency in the design and production of advertising and promotional materials.
4. Present ideas and concepts effectively and competently.
5. Visually demonstrate design solutions to be used in a portfolio.
FDMA 2310. History of Cinema I
3 Credits (3)
This course surveys the history of cinema - investigating the process by which the original "cinema of attractions" evolved into a globally dominant form of visual storytelling. We will explore the development of cinema both as an art form and as an industry, and consider the technological, economic, cultural factors, as well as many key international movements that helped shape it. Restricted to: G-CMI, DFM, ANVE majors.

Learning Outcomes
1. Gain a greater appreciation for the history of cinema
2. Develop knowledge of the key eras in the history of U.S. cinema
3. Learn the characteristics of major movements in international cinema
4. Understand the various elements that go into telling a story in cinema: screenplay, narrative devices, director, producer, talent, production design, cinematography, editing, sound design
5. Learn how major genres in U.S. cinema have evolved in the past 100+ years
6. Gain a basic understanding of the operations and organization of the Hollywood film industry, from the studio system until today
7. Gain an awareness of the shifts in the film industry that present new opportunities for independent filmmakers
8. Understand the importance of learning about the history of cinema to the process of becoming a filmmaker
9. Strengthen public speaking skills

FDMA 2311. History of Animation
3 Credits (3)
Explores the history of Animation as an art form and industry through readings, screenings, lecture and periodic guest speakers. Restricted to: G-CMI, ANVE, DFM majors. Restricted to Las Cruces campus only.

Learning Outcomes
1. To expand your knowledge of the history of animation and its evolution to the modern day.
2. To expand your ability to view animation critically and to understand its early connections to cartooning as well as its ongoing cultural presence and relevance.
3. To expand your comfort with accessing information and completing assignments both online and independently. Canvas will be utilized for many of our readings and for some response assignments.

FDMA 2312. History of Media Design
3 Credits (3)
An introduction to the principles of design history and theory within a chronological framework of historical and emerging media.

Learning Outcomes
1. Introduction to visual communication: Defines design media; Discuss universal design principles and strengthen student basic design skills.
2. Historical technological development and design: Prehistoric communication; Beginnings of alphabet and written language; Movable type and the printing press; Industrial revolution; Digital Age; Designers and Trends; Personalities and their influence and contributions
3. Identify design styles and discuss the relevance of how design influences: Idea generation; Trend sources; Influences or appropriation; Propaganda and advertising.

FDMA 2325. Advanced Photoshop
3 Credits (2+2P)
This course expands on the Photoshop skill set to develop proficiency with selections, masking, channels, filters, color correction, painting tools, vector integration, video, special effects, and compositing techniques. The focus is on the core image-editing tools of Photoshop that can be universally applied to photography, print, film or the web. The material is covered in production-oriented projects and students develop work suitable for portfolios. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.

Prerequisite(s): FDMA 1515.

Learning Outcomes
1. Create effects using advanced blending techniques
2. Effectively utilize advanced masking techniques
3. Refine Selections with advanced techniques
4. Assess Adjust color in an image
5. Utilize advanced photo enhancement techniques
6. Alter images using Photoshop painting techniques
7. Create brush presets
8. Create vector elements with paths
9. 1 Add manipulate type on a path
10. 1 Create advanced special effects
11. 1 Apply vanishing point warping
12. 1 Create a video clip
13. 1 Apply color adjustments to video

FDMA 2326. Digital Photography and Imaging II
3 Credits (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. Restricted to: Alamogordo campus, Carlsbad campus, Dona Ana campus.

Prerequisite(s): FDMA 1545.

Learning Outcomes
1. Apply proper exposure techniques.
2. Practice effective composition techniques.
3. Demonstrate knowledge of working with Camera RAW files.
4. Demonstrate proper image adjustment and correction techniques.
5. Successfully apply the basics of HDR digital photography.
6. Apply techniques for modifying light.
FDMA 2360. Web Design II
3 Credits (2+2P)
In this course, students will refine their skills in coding and web graphic design as well as be introduced to methods in constructing sites that adhere to the standards of responsive web design. Students will expand their knowledge of HTML and CSS using a code editor, and they will both analyze existing websites and also construct an interactive website. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): FDMA 1360.
Learning Outcomes
1. Plan and produce web design mockups.
2. Demonstrate a proficiency in HTML/CSS coding.
3. Utilize basic web scripts.
4. Integrate animation into web design.
5. Create fully functional websites using one or more web editors.
6. Make a website "live."
7. Evaluate web designs for aesthetics and functionality.
8. Demonstrate the utilization of responsive design.

FDMA 2365. Web Design for Small Business
3 Credits (2+2P)
Technology and techniques for designing and building a web presence for small business. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): FDMA 1360.
Learning Outcomes
1. Learning advanced tools and techniques for creating and maintaining complex Business web sites. We will be using CSS, PHP, HTML, Photoshop, and Wordpress.
2. design a complete and fully functional online web business.
3. understand and develop a plan to better manage a web store/business.
4. review basic design guidelines in preparing a variety of web applications for business.
5. develop technical skills in using various web based solutions.
6. reinforce your knowledge of web design software.
7. introduce alternate sources of data, communication and financial solutions.

FDMA 2370. Advanced Web Techniques
3 Credits (2+2P)
Creating and managing complex web sites using advanced techniques and tools. May be repeated for a maximum of 6 credits. Restricted to: Community Colleges only.
Prerequisite(s): FDMA 1515 and FDMA 2360.
Learning Outcomes
1. Create webpages using Hypertext Markup Language (HTML) elements and tags
2. Format webpages using Cascading Style Sheets (CSS)
3. Validate webpage code
4. Apply industry-standard webpage design and organization principles
5. Publish a website

FDMA 2381. Storyboarding
3 Credits (3)
Examines effective writing principles to create storyboards that communicate the overall picture of a project, timing, scene complexity, emotion and resource requirements. Further, the purpose of this course is to introduce students to the principles of visual storytelling—in film--through the use of the storyboard. In other words, to show how storyboards are critical "architectural component" of the filmmaking process, used as a blueprint (or guide) to communicate the complex elements of a film story. Crosslisted with: ENGL 2381. Restricted to: DFM,ANVE, G-CMI majors. Restricted to Las Cruces campus only.
Learning Outcomes
1. Learn to conceive and draw original images.
2. Learn to use images to tell a story.
3. Design, develop, and order images (shots) into storyboarded scenes.
4. Understand how storyboarded sequences are a tool in the process of filmmaking.
5. Understand how the storyboard image is translated from the written page.
6. Build scenes from the scripted sequences into a storyboard.

FDMA 2382. Principles of Story Across the Media
3 Credits (3)
The purpose of this course is to help students understand the basic elements of narrative structure (e.g. character, dramatic conflict, theme, etc.) and how these elements may be used effectively in media expression. Crosslisted with: ENGL 2382. Restricted to: G-CMI, DFM, ANVE majors. Restricted to Las Cruces campus only.
Learning Outcomes
1. Identify the elements of storytelling in scripted text or improvised performance
2. Understand how these elements work together across different media
3. Apply these elements of storytelling in original work
4. Appreciate and master these elements for independent or collaborative work

FDMA 2410. Audio Production II
3 Credits (2+2P)
Students will use skills developed in the Audio Production I course to produce audio projects utilizing a variety of analog and digital audio hardware and software, including continued use of multi-track, computer-based recording and editing systems, as well as exploring more advanced audio techniques and concepts. Restricted to: Community Colleges only.
Learning Outcomes
1. Apply analog and digital audio hardware and software in audio recording.
2. Apply common professional set-up practices of audio production facilities.
3. Produce audio projects, sync sound recordings, and audio dialogue replacement (ADR) demonstrating technical expertise.
4. Perform an audio mix and master for a final professional product.
5. Analyze and compare existing audio productions for quality.
FDMA 2510. Introduction to Sound Design for Film  
3 Credits (3)  
This course is an introduction to the principles, techniques and applications of sound design and film scoring. Students learn how sound affects storytelling in a film, examine the role of sound from the script to screen, and the professional process of creating a soundtrack. Students learn how to use sound equipment in a production environment and execute basic techniques used to develop a soundtrack. Crosslisted with: FDMA 1415.  
Prerequisite(s)/Corequisite(s): FDMA 2382. Restricted to: DFM,ANVE majors. Restricted to Las Cruces campus only.  
Learning Outcomes  
1. Compare the properties and propagation of sound and importance of sound to the storytelling aspect of filmmaking  
2. Learn the process of designing a soundtrack for film and recording live audio dialogue for use in post-production editing  
3. Learn methods of capturing sound including live audio recording, dialogue recording, foley, orchestration and audio dialogue replacement  
4. Design a soundtrack for motion media project.

FDMA 2520. Introduction to Cinematography  
3 Credits (3)  
The Director of Photography (or Cinematographer), in close collaboration with the Director and Production Designer, helps determine the look of a film. This course is designed to introduce students to the technical and aesthetic fundamentals of creating, developing, and collaborating on the visual elements of storytelling, using camera framing, lensing, and lighting fundamentals such as shadows, light and color. May be repeated up to 6 credits. only. Prerequisite(s)/Corequisite(s): FDMA 2382 (Las Cruces Campus) or FDMA 1210 (Community College Campus(es))  
Learning Outcomes  
1. Define and explain the fundamental concepts of cinematography, such as exposure, lighting solutions, and color temperature.  
2. Understand how cinematography brings the Director’s vision to reality.  
3. Demonstrate proficiency in plotting and executing interior and exterior lighting solutions.

FDMA 2530. Introduction to 3D Modeling  
3 Credits (3)  
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. May be repeated for a maximum of 6 credits.  
Learning Outcomes  
1. Identify the role of a 3D modeler in a production pipeline within various fields of digital animation.  
2. Apply techniques in modeling mechanical and organic objects.  
3. Utilize tools available in professional 3D modeling software.  
4. Create simple animations and renders.  
5. Present original animations to instructor and classmates for critique.  
6. Create a demo reel of work completed during the course.

FDMA 2535. Digital Illustration  
3 Credits (3)  
Introductory course examining traditional artistic expressions and translating visual art experiences into a digital art medium to enhance visual storytelling. Students acquire basic principles of drawing and painting through hands-on experience manipulating tonal value, composition, form development, light and shadow, color theory, rendering realism, and graphic design. Restricted to: DFM,ANVE majors. Restricted to Las Cruces campus only.  
Learning Outcomes  
1. Be familiar with the CMI computer system, facilities, equipment and policies.  
2. Appropriately utilize the various media technologies available at CMI for digital illustration.  
3. Understand the different roles and areas of digital illustration.  
4. Understand and apply some basic techniques of digital illustration.  
5. Understand and apply some basic processes of creating pleasing images based on knowledge of traditional art principles.  
6. Begin to apply some basic strategies for developing and creating aesthetically pleasing images.

FDMA 2550. Creative Media Studio  
3 Credits (2+2P)  
A studio environment where students specialize in creating film-festival quality and portfolio-ready projects under the supervision of faculty. May be repeated for a maximum of 6 credits.  
Prerequisite(s): FDMA 1210 and FDMA 1220 or FDMA 2530.  
Learning Outcomes  
1. Students will work together to create portfolio-quality work in a studio environment.  
2. Through classroom discussion and reporting the students will collaborate to produce a professional quality “vertical slice” game concept within a defined timeline and financial budget.

FDMA 2710. Beginning 2-D Animation  
3 Credits (3)  
Students will learn the basics of digital 2D animation by working through a variety of exercises, creating an original storyboard, and animating five or more shots utilizing industry standard software. Restricted to: DFM,ANVE majors. Restricted to Las Cruces campus only.  
Learning Outcomes  
1. The student will demonstrate an overall knowledge of computers as a tool of the animation artist and be able to produce simple animations using the techniques learned in class.  
2. Use major software tools with ease  
3. Manage time lines through key frames  
4. Build storyboards  
5. Demonstrate knowledge of 2-D and animation terminology  
6. Produce actions, set environments and constraints for 2-D animation  
7. Render full animation.

FDMA 2715. Special Effects  
3 Credits (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(s): FDMA 2530 or FDMA 2765.
FDMA 2720. 3-D Animation
3 Credits (3)
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): FDMA 1510, FDMA 2710 or consent of instructor.
Learning Outcomes
1. Clearly describe the role of an animator in cinema, gaming and related fields.
2. Recognize leading animators and their methods.
3. Demonstrate knowledge of advances in contemporary animation.
4. Utilize current industry standard animation tools.
5. Apply fundamental animation processes and techniques.

FDMA 2725. Rigging for 3D Animation
3 Credits (3)
This course will introduce principles and practices of current 3D animation rigging. 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, body and facial rigging. Restricted to: DFM, ANVE majors.
Prerequisite(s): FDMA 1510.
Learning Outcomes
1. Understand what Rigging is and the role it plays in the world of cinema and video games.
2. Be familiar with industry professionals and their techniques and approaches to rigging.
3. Understand and be able to apply the fundamentals of rigging to industry standard applications.
4. Demonstrate ability to rig basic to intermediate machines, bipeds and quadrupeds.

FDMA 2730. Advanced Character Animation
3 Credits (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. Restricted to: Community Colleges only.
Prerequisite(s): FDMA 2530.
Learning Outcomes
1. Create skeletal riggings for use with a 3D model.
2. Attach riggings to a 3D model using Smooth and rigid binding and refine the bindings so that they are properly weighted.
3. Animate a 3D model using skeletal and vertex animation techniques.

FDMA 2735. Advanced 3D Animation Workshop A
3 Credits (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. May be repeated for a maximum of 9 credits. Consent of instructor required.
Corequisite(s): FDMA 2740.
Learning Outcomes
1. Define the duties and skills sets required for a career in 3D Modeling.
2. Understand the Maya interface, the uses for all of the major modes and menus of the interface and be able to describe how to access the tools, actions and the options of those tools and actions.
3. Complete and compile a multi shot animated short.

FDMA 2740. Advanced 3D Animation Workshop B
3 Credits (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. May be repeated for a maximum of 9 credits. Consent of instructor is required.
Corequisite(s): FDMA 2735.
Learning Outcomes
1. Define the duties and skills sets required for a career in 3D Modeling.
2. Understand the Maya interface, the uses for all of the major modes and menus of the interface and be able to describe how to access the tools, actions and the options of those tools and actions.
3. Complete and compile a multi shot animated short.

FDMA 2745. Light, Shade, Render
3 Credits (3)
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. Restricted to: DFM,ANVE majors. Restricted to Las Cruces campus only.
Prerequisite(s): FDMA 1510, FDMA 2530, or Consent of Instructor.
Learning Outcomes
1. Understand the role of lighting and surfacing to tell a story.
2. Be familiar with leading lighting artist and their approaches.
3. Utilize the software implemented in the entertainment industry.
4. Understand and apply fundamental lighting and rendering techniques.
5. Demonstrate ability to create successfully rendered scenes from concept through production.
FDMA 2750. Digital Sculpting  
3 Credits (3)  
Introduce students to the 3D Sculpting programs which are the industry standard sculpting programs. Students will learn how to create complex high polygon sculpts and normal maps and transfer the models into 3D studio Max and Autodesk Maya. May be repeated up to 6 credits. Restricted to: Community Colleges only.  
Prerequisite(s): FDMA 2530.  
Learning Outcomes  
1. Demonstrate communication skills through written critiques and explanations  
2. Students will demonstrate visual communication skills through critiques, written explanations, and storyboarding  
3. Demonstrate a working knowledge of Zbrush's interface  
4. Demonstrate a working knowledge of Zpheres and how they are best used to create sculpts  
5. Demonstrate a working knowledge of painting a mesh using Spotlight  
6. Demonstrate a working knowledge of retopologizing and exporting the mesh  
7. Demonstrate a working knowledge of integrating the full Zbrush pipeline into Unity and Unreal

FDMA 2755. Drawing for Animation  
3 Credits (3)  
Introductory study of the human and animal form in relation to animation. Students learn fundamentals and exaggeration of the figure, as related to proportion, rhythm, mechanics, and motion. Areas of focus are: basic form, proportion, shape, contour, gesture, anatomy, portraiture, perspective, clothing effects and drawing from observation. Restricted to: CMT, DFM, ANVE majors.  
Learning Outcomes  
1. Students will have an opportunity to gain hands on experience using industry standard state of the art animation software.  
2. Understand what the basics of drawing the human form.  
3. Have a general understanding of human anatomy as needed for the artist.  
4. Be able to design the human form from imagination.

FDMA 2770. Critical Game Studies  
3 Credits (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. Restricted to: Community Colleges only.

FDMA 2775. Game Tools and Techniques  
3 Credits (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(s): FDMA 2770.  
Learning Outcomes  
1. Students will develop rapid prototyping techniques.  
2. Through classroom exercises the students will gain competency in industry-standard game creation engines and tools, and learn to work together in groups to create rapid prototypes.  
3. This includes creating art, sound and music, and creating basic scripts within an engine.

FDMA 2785. Level Design Concepts  
3 Credits (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(s): FDMA 2770  
Learning Outcomes  
1. Students will develop level design skills.  
2. Through classroom exercises the students will gain a comfortable competency with designing levels both on paper and digitally.  
3. This includes creating first person shooter levels, third person levels, multiplayer level design, and more.

FDMA 2993. Workshops (Advanced Photography)  
1 Credit (1)  
This is a series of 1-credit workshops offering specialized and intense advanced skill training and upgrading applications of photography for commercial purposes and training in photographic skills and styles presented by a variety of professional lecturers. May be repeated up to 7 credits. Restricted to Community Colleges only.  
Prerequisite(s): FDMA 1545.  
Learning Outcomes  
1. Varies

FDMA 2994. Portfolio Design & Development  
1-3 Credits  
Personalized design and creation of the student's professional portfolio including hard-copy, demo reel, and online. May be repeated up to 6 credits. Consent of Instructor required. Restricted to Community Colleges campuses only.  
Learning Outcomes  
1. Varies

FDMA 2995. Film Crew Cooperative Experience  
3-6 Credits (3-6)  
Industry production experience in specific craft areas for film crew technicians who have successfully completed two semesters of FTTP. Restricted to: Dona Ana campus, Carlsbad campus.  
Prerequisite(s): FDMA 2125.  
Learning Outcomes  
1. Varies

FDMA 2996. Special Topics  
1-4 Credits  
Specific topics to be announced in the Schedule of Classes. May be repeated for a maximum of 18 credits.  
Learning Outcomes  
1. Varies

FDMA 2997. Independent Study  
1-3 Credits  
Individual studies directed by consenting faculty with prior approval of department head. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.  
Prerequisite(s): Minimum GPA of 3.0 and sophomore standing.  
Learning Outcomes  
1. Varies
FDMA 2998. Internship
1-3 Credits
Work experience that directly relates to a student's major field of study that provides the student an opportunity to explore career paths and apply knowledge and theory learned in the classroom. Internships may be paid or unpaid. Students are supervised/evaluated by both the employer and the instructor. May be repeated up to 9 credits. Consent of Instructor required. Graded: S/U Grading (S/U, Audit). Restricted to Community Colleges campuses only. Consent of instructor required.

Learning Outcomes
1. Varies

FIRE-FIRE INVESTIGATION (FIRE)

FIRE 101. Firefighter I
8 Credits (6+6P)
This course will train the student to the Firefighter I level as outlined in NFPA 1001, Standard for Firefighter Professional Qualifications. Firefighter I certification issued through the New Mexico Firefighter’s Training Academy upon successful completion (IFSAC accredited). May be repeated up to 8 credits. Consent of Instructor required.
Prerequisite(s)/Corequisite(s): OSEM 103 and FIRE 115. Restricted to Community Colleges campuses only.

FIRE 102. Fire Fighter I and II
12 Credits (12)
This course will train the student as outlined in NFPA 1001, Fire Fighter Professional Qualifications. Firefighter I & II Certification issued through the New Mexico Firefighter’s Training Academy (NMFTA) upon successful completion [International Fire Service Accreditation Congress (IFSAC) & Pro Board accredited]. Consent of Instructor required.
Prerequisite(s)/Corequisite(s): FIRE 115, FIRE 252, OSEM 103. Restricted to Dona Ana campus only.

FIRE 104. Firefighter II
8 Credits (6+6P)
This course will train the student to the Firefighter II level as outlined in NFPA 1001, Standard for Firefighter Professional Qualifications. Firefighter II certification issued through the New Mexico Firefighter’s Training Academy upon successful completion (IFSAC accredited). May be repeated up to 8 credits. Consent of Instructor required.
Prerequisite(s)/Corequisite(s): FIRE 252. Prerequisite(s): FIRE 101. Restricted to Community Colleges campuses only.

FIRE 112. Principles of Emergency Services
3 Credits (3)
This course provides an overview to fire protection and emergency services including career opportunities in fire protection and related fields. The organization and function of public and private fire protection services is studied including how fire departments fit as part of local government. An overview of laws and regulations affecting the fire service is explored along with specific fire protection functions and responsibilities including basic fire chemistry and physics, introduction to fire strategy and tactics and life safety initiatives. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.

FIRE 114. Fire Behavior and Combustion
3 Credits (3)
This course explores the theories and fundamentals of how and why fires start, spread, and are controlled. Restricted to: Community colleges only.

FIRE 115. Hazardous Materials Awareness and Operations
3 Credits (3)
This course will train the student to the Hazardous Materials Awareness and Operations level as outlined in NFPA 472, Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents and OSHA 1910.120. Hazardous Materials Awareness and Operations certification issued through the New Mexico Firefighter’s Training Academy upon successful completion (IFSAC accredited). May be repeated up to 3 credits. Restricted to Community Colleges campuses only.
Prerequisite(s)/Corequisite(s): FIRE 128.

FIRE 120. Fire Protection Hydraulics and Water Supply
3 Credits (3)
This course will train students on skill requirements for becoming a safe and effective fire apparatus driver/operator. The focus will be on pump operation, construction, testing, and mathematical calculation required for effective pump operation and fire control. Responsibilities of the driver/operator will be taught and assessed consistent with applicable NFPA standards and the New Mexico Firefighters’ Training Academy (NMFTA) guidelines. Students who meet all course requirements will be eligible for International Fire Service Accreditation Congress (IFSAC) certification through the NMFTA. Consent of Instructor required. Restricted to Community Colleges campuses
Prerequisite(s)/Corequisite(s): FIRE 128.

FIRE 126. Fire Prevention
3 Credits (3)
This course will educate students about the principles and techniques of fire prevention and life-safety inspection and code compliance in accordance to NFPA 1031, Standard for Professional Qualifications for Fire Inspector and Plan Examiner, Level I. Students who meet all course requirements will be eligible for International Fire Service Accreditation Congress (IFSAC) certification through the New Mexico Firefighters’ Training Academy (NMFTA). Restricted to Community Colleges campuses only.

FIRE 128. Apparatus and Equipment
2 Credits (2)
The course will train students on attitude and skill requirements for becoming a safe and effective fire apparatus driver/operator. The focus will be on apparatus inspection, operation, maintenance, and specific. Responsibilities of the driver/operator will be taught and assessed consistent with applicable NFPA standards and the New Mexico Firefighters’ Training Academy (NMFTA) guidelines. Students pursuing certification must posses a current and valid New Mexico driver’s license. Students who meet all course requirements will be eligible for International Fire Service Accreditation Congress (IFSAC) certification through the NMFTA. Restricted to Community Colleges campuses only.

FIRE 130. Principles of Fire and Emergency Services Safety and Survival
3 Credits (3)
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 only.

FIRE 200. Special Topics
1-12 Credits (1-12)
Specific subjects to be announced in the Schedule of Classes. Course may be repeated for credit as topics change. May be repeated up to 12 credits. Consent of Instructor required. Restricted to Community Colleges campuses only.
FIRE 201. Independent Study  
1-3 Credits  
Research on an approved topic to meet graduation requirements. Meets or exceeds NFPA standards. May be repeated for total of 9 credits.  
Prerequisite: consent of instructor.

FIRE 202. Wildland Fire Control  
1-3 Credits  
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. Restricted to: Community Colleges Only.

FIRE 203. Fire and Emergency Services Administration  
3 Credits (3)  
This course will provide students entry-level training in company operations and administration at the first-line supervisory level. The student will learn how to effectively manage human resources and community/public relations. Students will learn about fire department organization and administration; including budgets, reports, and planning. Students will learn the process involved in fire inspection, investigation, public education, emergency service delivery, and safety, per NFPA Standard 1021, Fire Officer Professional Qualifications. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.

3 Credits (3)  
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 only.

FIRE 220. Cooperative Experience I  
1-3 Credits  
Supervised cooperative work program. Student is employed in an approved occupation and rated by the employer and instructor. May be repeated for a maximum of 6 credits. Graded S/U.  
Prerequisite: consent of instructor.

FIRE 221. Cooperative Experience II  
3 Credits (3)  
Apply advanced firefighting knowledge and skills while working with fire protection agencies. Meets or exceeds NFPA standards. Consent of instructor required. Graded: S/U. Restricted to: Community Colleges only.  
Prerequisite(s): FIRE 220.

FIRE 223. Fire Investigations I  
3 Credits (3)  
This course meets the requirements set forth in NFPA 1033 Professional Qualifications for Fire Investigator. This course will give a comprehensive understanding of the principles of fire investigation, scene examination, documentation, evidence collection/preservation, interview techniques, and post-incident investigations. Student who meet all course requirements are eligible for International Fire Service Accreditation Congress (IFSAC) certification through New Mexico Firefighters’ Training Academy (NMFTA). Restricted to Community Colleges campuses only.

FIRE 224. Strategy and Tactics  
3 Credits (3)  
Provides an in-depth analysis of the principles of fire control through utilization of personnel, equipment and extinguishing agents on the fire ground. Covers the development of systematic action plans for emergency situations. Includes recognizing and prioritizing emergency scene needs and developing related strategies, tactics and contingencies. Educates students on how resources should be deployed to implement those plans. Restricted to Community Colleges campuses only.

FIRE 225. Fire Protection Systems  
3 Credits (3)  
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 only.

FIRE 230. Fire Service Instructor  
3 Credits (3)  
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 Credits (3)  
Application of knowledge, skills and abilities in a fire service department, as a firefighter intern and integrated member of a fire affiliated agency. Restricted to majors.  
Prerequisites: FIRE 101, FIRE 102, FIRE 115, FIRE 202 and EMT-B and consent of instructor.

FIRE 233. Practical Approach to Terrorism  
3 Credits (3)  
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 252. Vehicle Extrication  
2 Credits (1+2P)  
This course will train the student to the Vehicle & Machinery Extrication level I as outlined in NFPA 1006, Standard for Technical Rescuer Professional Qualifications. Vehicle & Machinery Extrication certification issued through the New Mexico Firefighter’s Training Academy upon successful completion (IFSAC accredited). May be repeated up to 2 credits. Restricted to Community Colleges campuses only.
FREN-FRENCH (FREN)

FREN 1110. French I
4 Credits (4)
Intended for students with no previous exposure to French, this course develops basic listening, speaking, reading, and writing skills aiming toward the ACTFL novice-high level. This is an introductory course designed to teach the student to communicate in French in everyday situations and to develop an understanding of French and Francophone cultures through the identification of cultural products and practices, of cultural perspectives, and the ability to function at a survival level in an authentic cultural content. This course will also develop the student’s sense of personal and social responsibility through the identification of social issues.

Learning Outcomes
1. Students can communicate and exchange information about familiar topics using phrases and simple sentences, sometimes supported by memorized language.
2. Students can usually handle short social interactions in everyday situations by asking and answering simple questions.
3. Students can write short messages and notes on familiar topics related to everyday life.
4. Students can often understand words, phrases, and simple sentences related to everyday life.
5. Students can recognize pieces of information and sometimes understand the main topic of what is being said.
6. Students can understand familiar words, phrases, and sentences within short and simple texts related to everyday life.
7. Students can sometimes understand the main idea of what they have read.
8. Students can identify beliefs, behaviors and cultural artifacts of the French-speaking world.
9. In English, students will engage with social issues confronting the French-speaking world to develop their sense of personal and social responsibility.

FREN 1120. French II
4 Credits (4)
A continuation of French 1, students will develop a broader foundation in skills gained during the first semester, including understanding, speaking, reading and writing French aiming toward the ACTFL intermediate-low level. This course is designed to increase student fluency in French as applied to everyday situations. Students will also learn to recognize and understand various French and Francophone products, practices, and perspectives, identifying common cultural patterns, describing basic cultural viewpoints, and further developing their sense of personal and social responsibility through the investigation of cultural issues.

Prerequisite(s): C or better in FREN 1110.

Learning Outcomes
1. Students can participate in conversations on a number of familiar topics using simple sentences.
2. Students can handle short social interactions in everyday situations by asking and answering simple questions.
3. Students can write briefly about most familiar topics and present information using a series of simple sentences.
4. Students can understand the main idea in short, simple messages and presentations on familiar topics.
5. Students can understand the main idea of simple conversations that they overhear.
6. Students can understand the main idea of short and simple texts when the topic is familiar.
7. Students can describe and make comparisons between decisions about beliefs, behaviors and cultural artifacts of the French-speaking world.
8. Students will engage with social issues confronting the French-speaking world to continue to develop their sense of personal and social responsibility.
FREN 2110. French III  
3 Credits (3)
In this third semester course, students will continue to develop a broader foundation in skills gained during the first year, including understanding, speaking, reading and writing French aiming toward the ACTFL intermediate-mid level. This course is designed to teach the student to communicate in a more sustained way in areas of personal interest and in everyday situations. Students will engage in and analyze various French and Francophone products, practices, and perspectives, as well as continue to develop their sense of personal and social responsibility through comparison and contrast of cultural perspectives.
**Prerequisite(s):** C or better in FREN 1120.

**Learning Outcomes**
1. Students can participate in conversations on familiar topics using sentences and series of sentences.
2. Students can engage in short social interactions in everyday situations by asking and answering a variety of questions. Students can usually say what they want to say about themselves and their everyday life.
3. Students can write on a wide variety of familiar topics using connected sentences.
4. Students can understand the main idea in messages and presentations on a variety of topics related to everyday life and personal interests and studies.
5. Students can understand the main idea of conversations that they overhear.
6. Students can understand the main idea of texts related to everyday life and personal interests or studies.
7. Students can analyze beliefs, behaviors and cultural artifacts of the French-speaking world, and discuss the nature and value of French and Francophone products, practices, and perspectives.
8. Students will engage with social issues confronting the French-speaking world to continue to develop their sense of personal and social responsibility.

FREN 2120. French IV  
3 Credits (3)
In this fourth semester course, students will continue to broaden and refine skills gained during previous semesters, including understanding, speaking, reading and writing French aiming at the ACTFL intermediate-high level. This course is designed to teach the student to communicate in a more sustained way in situations that go beyond the everyday. Students will evaluate various French and Francophone products, practices, and create ways to demonstrate their sense of personal and social responsibility through participation in cultural interaction.
**Prerequisite(s):** C or better in FREN 2110.

**Learning Outcomes**
1. Students can participate with ease and confidence in conversations on familiar topics. They can usually describe people, places, and things. They can usually talk about events and experiences in various time frames.
2. Students can handle social interactions in everyday situations, sometimes even when there is an unexpected complication.
3. Students can write about topics related to school, work, and community in a generally organized way. They can write some simple paragraphs about events and experiences in various time frames.
4. Students can easily understand the main idea in messages and presentations on a variety of topics related to everyday life and personal interests and studies.
5. Students can usually understand a few details of what I overhear in conversations, even when something unexpected is expressed. The student can sometimes follow what they hear about events and experiences in various time frames.
6. Students can understand the main idea of texts with topics related to everyday life, personal interests, and studies, as well as sometimes follow stories and descriptions about events and experiences in various time frames.
7. Students can analyze beliefs, behaviors and cultural artifacts of the French-speaking world, and recognize and discuss the representations and controversies of French and Francophone products, practices, and perspectives.
FSTE 2110G. Food Science I
4 Credits (3+2P)
The scientific study of the principles involved in the preparation and evaluation of foods. May be repeated up to 4 credits.

Learning Outcomes
1. Explain basic scientific principles involved in the preparation of high quality food products.
2. Utilize scientific inquiry in the experimental investigation of factors influencing the chemical, physical and sensory properties of food products.
3. Apply basic scientific principles, procedures, techniques and standards in the preparation of all types of high quality food products.
4. Use basic methods of quantitative analysis to critically evaluate quality characteristics of food.
5. Use sensory science techniques and terminology to critically evaluate acceptability and quality characteristics of food.
6. Describe high quality characteristics of a variety of food products using appropriate terminology.
7. Apply principles of sanitation and safety to food preparation.

FSTE 2120. ACES in the Hole Foods II
4 Credits (8P)
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. Student must also have a Food Handler Card to enroll in this course.

Prerequisite(s): FSTE 1120.

Learning Outcomes
1. Apply basic scientific principles, procedures, techniques and standards in the production of food products.
2. Apply principles of sanitation and safety to the production of food products.
3. Assist in the development and evaluation of new and/or existing food products made for human consumption.
4. Prepare a resume and portfolio

FSTE 2130G. Survey of Food and Agricultural Issues
3 Credits (3)
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. Crosslisted with AEEC 2130G.

Learning Outcomes
1. Understand of global agriculture including production techniques used in various geographical regions, consumption trends, and political and social constraints.
2. Synthesis information about agricultural issues and make informed arguments
3. Articulately discuss modern issues in agriculture
4. Write coherent arguments relative to personal beliefs regarding agricultural issues

FSTE 2996. Special Topics
1-4 Credits
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.

Learning Outcomes
1. Varies

FWCE-FISH,WILDLF,CONSERV ECOL (FWCE)

FWCE 1110G. Introduction to Natural Resources Management
4 Credits (3+2P)
This class covers historical and current issues affecting the management of renewable natural resources with an emphasis on water, soil, rangeland, forest, fish, and wildlife resources. An emphasis is placed on the scientific method and critical thinking. In the laboratory students collect and analyze field data on topics covered above and write up each unit as a laboratory report.

Learning Outcomes
1. Students should be able to recall, describe and explain the laws, treaties and acts that have led to our current management of natural resources in the United States.
2. Students should recognize or explain what ecological processes are, the importance of ecological processes in maintaining ecosystem function and how human activities change ecological processes and the ecosystems dependent on those processes.
3. In each of the six course and lab modules (water quality, soils, forestry, rangelands, wildlife and fisheries) students should be able to recall, describe and explain basic terminology, fundamental ecological principles and management techniques and challenges.
4. Students should be able to interpret data presented graphically and in tables from class exercises and lectures.
5. Students should be able to solve problems scientifically through field data collection, laboratory analyses and the use of quantitative methods (basic statistics, tables and graphs).
6. Students should be able to communicate results from laboratory exercises (6 lab modules) orally and in writing.
7. Students will learn to apply scientific thinking to real world problems through in class discussion and short essays
8. based on material from case studies presented in class and guest speakers.

FWCE 1120. Contemporary Issues in Wildlife and Natural Resources Management
3 Credits (3)
Ecological, socioeconomic, and political issues surrounding the management of our natural resources with an emphasis on fish and wildlife resources.
FWCE 2110. Principles of Fish and Wildlife Management  
3 Credits (3)  
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.  
**Prerequisite(s):** FWCE 1110G.  

**Learning Outcomes**  
1. The goal of this course is to provide a firm foundation in the principles of wildlife and fisheries management.  
2. Material will include a background in biological principles geared towards animal populations, characteristics and management of the habitats utilized by fish and wildlife, techniques used to study and manage animals and their habitats, and aspects of the human dimension involved in wildlife and fisheries issues.  
3. This course serves as a core requirement for degrees offered in the Department of Fish, Wildlife and Conservation Ecology and as a required course for degrees in other departments such as Rangeland Resources.

FYEX 1110. First-year Seminar  
1-3 Credits  
This course is designed to help students achieve greater success in college and in life. Students will learn many proven strategies for creating greater academic, professional, and personal success. Topics may include career exploration, time management, study and test-taking strategies to adapt to different learning environments, interpersonal relationships, wellness management, financial literacy, and campus and community resources.  

**Learning Outcomes**  
1. Recognize the ways in which s/he is responsible for her/his own experience in education.  
2. Identify, locate, and utilize available campus resources essential for academic success.  
3. Create long-and short-term goals associated with student success and career planning.  
4. Implement time management techniques to organize the semester’s workload.  
5. Develop strategies to use individual strengths to succeed and reflect upon coursework and course progress in multiple classes to alter academic behaviors and create deeper meaning and learning.  
6. Apply the skills essential for analyzing and solving problems in her/his academic, professional, and personal life, which may include financial literacy and wellness management.  
7. Develop and apply essential skills such as reading, taking notes, studying, memorizing, taking tests, and self-management skills necessary for college success.  
8. Identify and revise self-defeating patterns of behavior, thought, and emotion as well as unconscious limiting beliefs.  
9. Develop supportive relationships with members of the campus community.  
10. Develop essential reading, writing, and critical thinking skills used in study and in research.  
11. Demonstrate understanding of how to use the computer for academic purposes, including learning management systems, email communications, research databases, degree audit, and other online resources.

FYEX 1112. The Freshman Year Experience  
3 Credits (3)  
An introduction to the university and its resources; emphasis on development of academic and personal skills that enable freshmen to become successful learners. Restricted to: Main campus only.  
**Prerequisite(s):** Freshman Standing Only.  

**Learning Outcomes**  
1. Appreciate the goals, methods, and values of higher education  
2. Expand intellectual development and self-direction  
3. Establish a faculty mentor relationship  
4. Enhance knowledge and practice of collaborative learning principles  
5. Establish a familiarity with campus resources and student services  
6. Develop public speaking, critical thinking, library research, and study strategies  
7. Evaluate talents and interest in relation to selecting a major and career planning  
8. Examine and clarify values  
9. Acknowledge and enhance respect for diversity
FYEX 1116. Managing Your Money
1 Credit (1)
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.

**Learning Outcomes**
1. Demonstrate understanding of the psychology of money and how it relates to personal financial decisions
2. Create realistic short- and long-term financial goals and a personal budget
3. Comprehend and manage college finances, including types of financial aid
4. Appreciate the importance of the Free Application for Federal Student Aid (FAFSA)
5. Describe the financial aspects of career development and how they apply to their own lives, including resume, taxes, salary, benefits
6. Apply principles of student loan management
7. Demonstrate use of credit reports in the prevention identity theft
8. Identify essential elements of smart spending and borrowing
9. Recognize debt and repayment costs
10. Explain the basics of saving and planning for the financial future
11. Create focused, developed, clear discussion posts and other written work for this class

FYEX 1117. Financial Literacy Money Matters
2 Credits (2)
This course will cover a variety of financial literacy topics ranging from budgeting to student loan repayment. This course is designed to assist students in becoming more financially literate. Restricted to Las Cruces campus only.

**Learning Outcomes**
1. Master effective strategies and other skills related to financial literacy
2. Establish a familiarity with campus resources designed to foster financial literacy and wellness
3. Exhibit intellectual development and self-direction in relation to financial literacy and wellness
4. Identify financial literacy skills which best support individual financial well-being
5. Demonstrate skills and knowledge that allows the student to make informed and effective decisions with all of their financial resources

FYEX 1131. Personal Learning Skills I
1-3 Credits
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.

**Learning Outcomes**
1. Synthesize the importance of critical thinking through self-reflection and self-exploration
2. Analyze and apply critical thinking skills using the eight intellectual standards
3. Describe the common barriers to critical thinking and construct problem solving strategies
4. Evaluate information and knowledge to determine misinformation and inaccuracies
5. Demonstrate information literacy by recognizing when information is needed and being able to efficiently locate, accurately evaluate, effectively use, and clearly communicate the information in various formats and mediums

FYEX 1132. Academic and Personal Effectiveness
2 Credits (2)
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.

**Learning Outcomes**
1. Students will demonstrate mastery of course objectives in time management, stress management, test taking, and other skills through completion of activities, quizzes, discussions, and more.
2. Students will be able to identify NMSU campus resources, including their services, location, and contact information.
3. Students will exhibit intellectual development and an improved self-direction through participation in the course.
4. Students will be able to identify and adopt those management skills which best support academic and career choices.

FYEX 1133. Academic Reading and Study Skills
1-4 Credits
Introduction to and practice with strategies for effective reading and studying at the college level. Provides laboratory.

**Learning Outcomes**
1. Use reading strategies to synthesize texts
2. Identify rhetorical elements of texts
3. Identify and apply different study methods
4. Recognize the role of student support services for student success
5. Identify and practice effective time management skills
6. Demonstrate proficient computer skills
7. Write an effective summary
FYEX 1134. Speed Reading
1 Credit (1)
Introduction to strategies and techniques for increasing reading rate and comprehension related to academic areas.

Learning Outcomes
1. Demonstrate an understanding of speed reading strategies and eye movement drills
2. Expand vocabulary and reading comprehension
3. Improve reading rates and develop reading techniques
4. Demonstrate an understanding of skimming techniques and scanning strategies

FYEX 1140. Career Exploration
1 Credit (1)
Survey of careers possible with community college associate degrees. Information on how to make a career choice.

Learning Outcomes
1. Desired career and lifestyle
2. Areas of interest
3. Skills and abilities
4. Personal values
5. DACC programs that match the student's interests, abilities, and values
6. Three careers that match the student's interests, abilities, values, and personality

FYEX 1160. Tutorial
1-3 Credits
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.

Learning Outcomes
1. Demonstrate the ability to organize their time in order to improve study habits.
2. Apply pre-reading strategies to improve reading concentration and comprehension.
3. Demonstrate basic understanding of the systems of the body.
4. Identify techniques to improve personal concentration and comprehension skills.
5. Identify and demonstrate listening skills.
6. Identify effective study and note taking skills.
7. Identify and demonstrate effective test-taking skills.
8. Identify critical thinking skills used in nursing.
9. Demonstrate knowledge of key terms.

FYEX 1170. NMSU Gospel Choir
1 Credit (1)
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.

Learning Outcomes
1. Comprehended the foundation related to singing in a gospel choir setting
2. Demonstrate an understanding of the difference between the musical treble and bass clef
3. Expand vocabulary and reading comprehension of gospel music terminology.
4. Improve the speed and accuracy of music sheet and sight reading

FYEX 1995. Preparing for Cooperative Education & Internship
1 Credit (1)
The Cooperative Education Course provides students with a comprehensive overview of career-related topics designed to assist with securing Cooperative Education and Internship employment. Students learn about philosophies and approaches to resumes, cover letters, interviewing, job searching, networking, and professionalism. A primary focus of the course is on experiential learning where students have opportunities to practice and implement course concepts including interviewing, networking, job searching, and document creation. In addition to exploring topics related to Cooperative Education and Internship, the course is designed to provide students with tools and strategies for successfully navigating the transition from student to employee. Graded: S/U Grading (S/U, Audit). Restricted to Las Cruces campus only.

Learning Outcomes
1. Demonstrate skills related to securing experiential learning experiences
2. Demonstrate knowledge related to the philosophies and approaches to resumes, cover letters, interviewing, cooperative education and internship search, and networking
3. Comprehend the importance of experiential learning experiences in relation to career development
4. Evaluate experiential learning opportunities and demonstrate comprehension of the skills and strategies necessary to transition from student to career

FYEX 1996. Special Topics
1-4 Credits
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.

Learning Outcomes
1. Varies

FYEX 2111. Critical Thinking Skills
3 Credits (3)
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(s): CCDE 110 N

Learning Outcomes
1. Students will raise vital questions and problems, formulating them clearly and precisely.
2. Students will gather and assess relevant information, using abstract ideas to interpret it effectively, come to well-reasoned conclusions and solutions, and them against relevant criteria and standards.
3. Students will think open-mindedly within alternative systems of thought, recognizing and assessing assumptions, implications, and practical consequences.
4. Students will communicate effectively in figuring out solutions to complex problems.
FYEX 2994. Prior Learning: Professional Portfolio
1-6 Credits
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. Graded S/U.
Prerequisite(s): CCDE 110 N or equivalent.
Learning Outcomes
1. produce writing that is focused on a main point
2. produce writing that is organized
3. produce writing follows task-specific conventions of paragraphing, sentence boundaries, usage, agreement, punctuation and spelling
4. deliver effective speeches
5. organize and present information with a purpose
6. apply effective communication strategies in their personal and professional lives

GENE-GENETICS (GENE)

GENE 1110. Experimental Systems in Genetics
1 Credit (1)
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.
Learning Outcomes
1. To give the students a historical perspective on the field of genetics.
2. To familiarize the students to introductory concepts and vocabulary to the field of genetics.
3. Introduce experimental systems within the field of genetics and to give perspective to current genetic research.
4. As this course is designed for beginning students as an overview of faculty and research labs on campus. The students majoring in genetics are encouraged to meet with faculty and to explore opportunities available to them on campus

GEOG-GEOGRAPHY (GEOG)

GEOG 1110G. Physical Geography
4 Credits (3+3P)
This course introduces the physical elements of world geography through the study of climate and weather, vegetation, soils, plate tectonics, and the various types of landforms as well as the environmental cycles and the distributions of these components and their significance to humans.
Learning Outcomes
1. Define, describe, illustrate, distinguish among or explain the use of maps, map scale, globes, map projections, and remote sensing.
2. Define, describe, illustrate, distinguish among or explain the various elements of the earth's atmosphere, earth's relation to the sun, incoming solar radiation, the ozone layer, the primary temperature controls, and the unequal heating of land and water.
3. Define, describe, illustrate, distinguish among or explain the weather makers (air temperature, air pressure, humidity, clouds, precipitation, visibility, and wind [including pressure gradient, the Coriolis force, and friction]).
4. Define, describe, illustrate, distinguish among or explain air masses, pressure systems, the various fronts and associated types of storms, weather symbols, monsoons, the various forms of precipitation, along with causes and effects of lightning.
5. Define, describe, illustrate or explain the hydrologic cycle, the characteristics and influences of the oceans and continents on the weather, the Southern Oscillation (i.e., El Nino), the effects of land/water distribution, and climates and their global distribution.
6. Define, describe, illustrate or explain the biosphere, including organisms (flora and fauna), food chains, ecosystems and relationships. Define, describe, illustrate or explain soils in terms of soil-forming processes, components, properties, and classification.
7. Define, describe, illustrate or explain the structure of the earth, the internal processes, weathering and mass wasting, fluvial processes, characteristics and processes of arid regions, processes of coastal and Karst topographical regions, the processes and characteristics of glaciation (mountainous and continental).
8. Define, describe, illustrate, distinguish among or explain specific impacts by humans on weather, climate, and on the ecosystem at large.
9. Perform tests and collect data to analyze and classify weather, climate and landforms characteristics, processes, and impacts both quantitatively and qualitatively. This includes reading and extracting basic information from maps, diagrams, remote sensing devices, graphs, and tables.
10. 1 Apply critical thinking skills such as inductive, deductive, and mathematical reasoning to solve problems using the scientific method. This includes interpreting maps, graphs and photos.
11. 1 Recognize and discuss the effect of human activity on climate, climate change, the greenhouse effect, and on landforms at large.
12. 1 Synthesize information from external, current sources and personal observations and discuss their relationships to class material.
GEOG 1120G. World Regional Geography  
3 Credits (3)  
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.  
**Learning Outcomes**  
1. Identify, describe, illustrate, distinguish among or explain the basic concepts of geography, the major world regions, areal differences and similarities, the processes that shape geography natural and human, the use of maps, and the key topics of geographical interpretation (e.g., location, world importance, population, political status, resources, etc.).  
2. Identify, describe, illustrate, distinguish among or explain the regional groups of Europe, its historical background, its languages and religions, major features, the diversified economy, political structures, and impact on globalization.  
3. Identify, describe, illustrate, distinguish among or explain the regional groups of Russia and its satellite nations, its historical background, their languages and religions, major features, their diversified economies, political structures, current problems, and impact on globalization.  
4. Identify, describe, illustrate or explain the regional nations of Middle East, their historical background, their languages and religions, the major features, the diversified economies and political structures, the current problems.  
5. Identify, describe, illustrate, distinguish among or explain the regional groups of Asia, their historical background its languages and religions, major features, the diversified economy and political structures, current problems, and impact on globalization.  
6. Identify, describe, illustrate, distinguish among or explain the regional groups of the Pacific World, their historical background its languages and religions, major features, the diversified economy and political structures, current problems, and impact on globalization.  
7. Identify, describe, illustrate, distinguish among or explain the regional groups of Africa, their historical background its languages and religions, major features, the diversified economy and political structures, current problems, and impact on globalization.  
8. Identify, describe, illustrate, distinguish among or explain the regional groups of Latin America, their historical background its languages and religions, major features, the diversified economy and political structures, current problems, and impact on globalization.  
9. Identify, describe, illustrate, distinguish among or explain the regional groups of Anglo-America, their historical background its languages and religions, major features, the diversified economy and political structures, current problems, and impact on globalization.  
10. Collect data to analyze or classify the region various historical developments and trends relating to globalization  
11. Apply critical thinking skills in predicting future developments and impacts in economics, cultural diversity, and political stability globally.  
12. Recognize and discuss current political “hot-spots,” their causes, and potential results with regards to globalization.  
13. Synthesize information the data into a comprehensive world-view.

GEOG 1130G. Human Geography  
3 Credits (3)  
This course serves as an introduction to the study of human geography. Human geography examines the dynamic and often complex relationships that exist between people as members of particular cultural groups and the geographical “spaces” and “places” in which they exist over time and the world today.  
**Learning Outcomes**  
1. Locate on maps, globes, and other technologies various geo-political spaces and places around the world, including in the United States.  
2. Describe the primary concepts, theories, methods and terms prevalent in the field of human geography.  
3. Apply core geographic concepts to the spatial patterns demonstrated in real-world scenarios.  
4. Identify the relationships that influence human-environment interaction in a specific location at a specific time.  
5. Define and utilize key concepts to explain human social and cultural change over time and across geographical space.  
6. Explain the geographic context of a current event or conflict.  
7. Identify a current event that illustrates a core cultural geographic concept.  
8. Think critically, discuss, and write about the relationships of the natural world to human geography.

GEOG 2130. Map Use and Analysis  
3 Credits (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.  
**Learning Outcomes**  
1. Accurately measure bearings and distances on maps.  
2. Read and interpret terrain and landform representation.  
3. Utilize a magnetic compass for basic land navigation and basic map making.  
4. Utilize a GPS instrument for basic land navigation.  
5. Recognize and describe basic physical and cultural spatial patterns portrayed on maps.  
6. Analyze and interpret the significance of spatial patterns portrayed on maps.  
7. Perform elementary spatial statistical analysis on geographic data.  
8. Appreciate and utilize the significance of place names and cultural patterns.  
9. Critically examine maps for evidence of information misuse or propagandist motives.  
10. Recognize and utilize appropriate map categories, symbols, projections, and coordinate systems to effectively and accurately portray, read, analyze, and interpret geographic data.

GEOG 2996. Special Topics  
1-3 Credits  
Specific subjects to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits.  
**Learning Outcomes**  
1. Varies
GEOL-GEOLOGY (GEOL)

GEOL 1110G. Physical Geology
4 Credits (3+3P)
Physical Geology is an introduction to our dynamic Earth introducing students to the materials that make up Earth (rocks and minerals) and the processes that create and modify the features of our planet. The course will help students learn how mountains are formed, how volcanoes erupt, where earthquakes occur, and how water, wind, and ice can shape landscapes. Students will also develop a basic understanding of the ways humans have altered the planet including our impact on natural resources and global climate change.

Learning Outcomes
1. Recall, describe or explain geologic vocabulary.
2. Identify or explain aspects of the geologic time scale and compare the uses and limitations of relative and absolute dating.
3. Recognize or explain the evidence used to support the theory of plate tectonics. Describe or identify how plate tectonics is related to the structure and features of the Earth.
4. Describe the formation of, and describe, compare, and classify minerals.
5. Identify or describe the three main rock types, how each forms in the context of the rock cycle and what each indicates about its environment of formation.
6. Recognize or explain the fundamentals of surface and groundwater hydrology and discuss the impact of human activities on water quality and quantity.
7. Describe or discuss the processes that are responsible for specific geologic hazards (e.g., earthquakes, volcanic eruptions, mass movement, flooding, etc.).
8. Recognize or describe the geologic processes involved in the formation and concentration of geologic resources.

GEOL 1150. Introduction to Rocks and Minerals
3 Credits (2+3P)
This course is an introduction to the characteristics and the formation of the three main types of rocks, the rock-forming minerals, and important ore minerals. An outline of Plate Tectonics will give students the basis to understand how many of these rocks and minerals form. In laboratory exercises, students will gain practice in describing and identifying hand-specimens of the main types of rocks and minerals.

Prerequisite(s)/Corequisite(s): GEOL 1110G.

Learning Outcomes
1. The student Identify the main rock-forming minerals from each mineral group as demonstrated by scoring a total of 70% or more on the relevant laboratory exercise component. Studying minerals, the student will: Identify the main minerals in hand specimens; Describe the environments in which these minerals form; Identify the rock types in which these minerals are found.
2. The student will understand the structure, composition, and genesis of rocks by identifying the principal igneous, sedimentary, and metamorphic rocks, as demonstrated by scoring a total of 70% or more on the relevant laboratory exercise components.
3. Studying rocks, the student will: Define the principal igneous processes and features, identify the most common igneous rocks and their constituting minerals in hand specimens, and discuss their origin and interpretation; Describe the principles of sedimentary processes and features, identify the most common sedimentary rocks in hand specimens, and discuss their origin and interpretation; Describe the principles of metamorphic processes and features, identify the most common metamorphic rocks and constituting minerals in hand specimens, and discuss their origin and interpretation.
GEOL 2130. Introduction to Meteorology
4 Credits (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.

Learning Outcomes
1. Recall, describe, or explain the various elements of the Earth's atmosphere, Earth's relation to the sun, incoming solar radiation, the ozone layer, the primary temperature controls, and the unequal heating of land and water.
2. Recall, describe, or explain weather variables and parameters.
3. Recall, describe, or explain air masses, pressure systems, the various fronts and associated types of storms, weather symbols, monsoons, the various forms of precipitation, along with causes and effects of lightning.
4. Recall, describe, or explain the hydrologic cycle, the characteristics and influences of the oceans and continents on the weather, the Southern Oscillation (i.e., El Nino), and the effects of land/water distribution.
5. Recall, describe, or explain specific impacts by humans on weather, climate, and on the ecosystem at large.
6. Evaluate and interpret information from maps, diagrams, remote sensing devices, graphs, and tables.
7. Apply critical thinking skills such as inductive, deductive, and mathematical reasoning to solve problems using the scientific method.
8. Recognize and discuss the effect of human activity on climate, climate change and the greenhouse effect.
9. Synthesize information from external, current sources and personal observations and discuss their relationships to class material.

GEOL 2996. Special Topics
1-3 Credits
Specific subjects to be announced in the Schedule of Classes. Community Colleges only. May be repeated for a maximum of 12 credits.

Learning Outcomes
1. Varies

GNDR-WOMEN'S STUDIES

GNDR 2110G. Introduction to Women, Gender, and Sexuality Studies
3 Credits (3)
This course introduces students to key concepts, debates, and analytical tools informing Women’s, Gender, and Sexuality Studies. As an interdisciplinary field of study, Women’s, Gender, and Sexuality Studies employs academic perspectives from a range of disciplines and theoretical approaches. It also incorporates lived experience and social location into its object of analysis. Though content will vary according to the expertise and focus of the instructor, this course will develop tools through readings and assignments that critically analyze how gender and sexuality are shaped by different networks of power and social relations and demonstrate how the intersections of race, class, disability, national status, and other categories identity and difference are central to their understanding and deployment. In addition to feminist thought, areas of focus might include gender and sexuality in relation to social, cultural, political, creative, economic, or scientific discourses. This class is recommended for those with a general interest in the topic area as well as for those seeking a foundational course for further study.

Learning Outcomes
1. Understand foundational concepts, theories, and approaches to gender and sexuality in conjunction with contemporary social justice movements such as feminism.
2. Describe the range of social and political forces that shape and are shaped by gender, sexuality, race/ethnicity, and other intersecting categories of identity.
3. Demonstrate the ability to conduct intersectional analysis.
4. Develop and improve skills in reading, critical thinking, academic writing, and public speaking.

GNDR 2120G. Representing Women Across Cultures
3 Credits (3)
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.

Learning Outcomes
1. To think critically about contemporary discourses on gender, race, sexuality, and class.
2. To understand how forms of identity intersect with one another
3. To explore the ways power and privilege operate in contemporary society
4. To understand some of the ways social inequalities develop, function, and change
5. To further students' interest in developing their own ideas and research in issues of women and gender, sexuality, race, class, and nation
GRMN-GERMAN

GRMN 1110. German I
4 Credits (4)
Intended for students with no previous exposure to German, this course develops basic listening, speaking, reading, and writing skills aiming toward the ACTFL novice-mid level. This is an introductory course designed to teach the student to communicate in German in everyday situations and to develop an understanding of German cultures through the identification of cultural products and practices, of cultural perspectives, and the ability to function at a survival level in an authentic cultural content. This course will also develop the student’s sense of personal and social responsibility through the identification of social issues.

Learning Outcomes
1. Students can communicate on very familiar topics using a variety of words and phrases that they have practiced and memorized.
2. Students can write lists and memorized phrases on familiar topics.
3. Students can recognize some familiar words and phrases when they hear them spoken.
4. Students can recognize some letters or characters.
5. Students can understand some learned or memorized words and phrases when they read.
6. Students can identify beliefs, behaviors and cultural artifacts of the German-speaking world.
7. In English, students will engage with social issues confronting the German-speaking world to develop their sense of personal and social responsibility.

GRMN 1120. German II
4 Credits (4)
A continuation of German 1, students will develop a broader foundation in skills gained during the first semester, including understanding, speaking, reading and writing German aiming toward the ACTFL novice-high level. This course is designed to increase student fluency in German as applied to everyday situations. Students will also learn to recognize and understand various German products, practices, and perspectives, identifying common cultural patterns, describing basic cultural viewpoints, and further developing their sense of personal and social responsibility through the investigation of cultural issues.

Prerequisite(s): C or better in GRMN 1110.

Learning Outcomes
1. Students can communicate and exchange information about familiar topics using phrases and simple sentences, sometimes supported by memorized language.
2. Students can usually handle short social interactions in everyday situations by asking and answering simple questions.
3. Students can write short messages and notes on familiar topics related to everyday life.
4. Students can often understand words, phrases, and simple sentences related to everyday life.
5. Students can recognize pieces of information and sometimes understand the main topic of what is being said.
6. Students can understand familiar words, phrases, and sentences within short and simple texts related to everyday life.
7. Students can sometimes understand the main idea of what they have read.
8. Students can describe and make comparisons between decisions about beliefs, behaviors and cultural artifacts of the German-speaking world.
9. Students will engage with social issues confronting the German-speaking world to continue to develop their sense of personal and social responsibility.
GRMN 2110. German III
3 Credits (3)
In this third semester course, students will continue to develop a broader foundation in skills gained during the first two semesters, including understanding, speaking, reading and writing German aiming toward the ACTFL intermediate-low level. This course is designed to teach the student to communicate in a more sustained way in areas of personal interest and in everyday situations. Students will engage in and analyze various German products, practices, and perspectives, as well as continue to develop their sense of personal and social responsibility through comparison and contrast of cultural perspectives.
Prerequisite(s): C or better in GRMN 1120.
Learning Outcomes
1. Students can participate in conversations on a number of familiar topics using simple sentences.
2. Students can handle short social interactions in everyday situations by asking and answering simple questions.
3. Students can write briefly about most familiar topics and present information using a series of simple sentences.
4. Students can understand the main idea in short, simple messages and presentations on familiar topics.
5. Students can understand the main idea of simple conversations that they overhear.
6. Students can understand the main idea of short and simple texts when the topic is familiar.
7. Students can analyze beliefs, behaviors and cultural artifacts of the German-speaking world, and discuss the nature and value of German products, practices, and perspectives.
8. Students will engage with social issues confronting the German-speaking world to continue to develop their sense of personal and social responsibility.

GRMN 2120. German IV
3 Credits (3)
In this fourth semester course, students will continue to broaden and refine skills gained during previous semesters, including understanding, speaking, reading and writing German aiming at the ACTFL intermediate-mid level. This course is designed to teach the student to communicate in a more sustained way in situations that go beyond the everyday. Students will evaluate various German products, practices, and create ways to demonstrate their sense of personal and social responsibility through participation in cultural interaction.
Prerequisite(s): C or better in GRMN 2110.
Learning Outcomes
1. Students can participate in conversations on familiar topics using sentences and series of sentences.
2. Students can engage in short social interactions in everyday situations by asking and answering a variety of questions. Students can usually say what they want to say about themselves and their everyday life.
3. Students can write on a wide variety of familiar topics using connected sentences.
4. Students can understand the main idea in messages and presentations on a variety of topics related to everyday life and personal interests and studies.
5. Students can understand the main idea of conversations that they overhear.
6. Students can understand the main idea of conversations that they overhear.
7. Students can understand the main idea of texts related to everyday life and personal interests or studies.
8. Students can analyze beliefs, behaviors and cultural artifacts of the German-speaking world, and recognize and discuss the representations and controversies of German products, practices, and perspectives.
9. Students will engage with social issues confronting the German-speaking world to create ways to demonstrate their sense of personal and social responsibility.

HIST-HISTORY (HIST)

HIST 1105G. Making History
3 Credits (3)
General introduction to history: how historians carry out research and develop interpretations about the past.
Learning Outcomes
1. Understand and articulate the differences and similarities between history and memory;
2. Analyze and critically interpret primary sources and understand how others might interpret and use the same material in different ways;
3. Recognize and appreciate the diversity of historical experiences and the uses of historical memory in various societies;
4. Understand how historical experiences that include political, geographical, social, cultural, religious and intellectual experiences have been expressed across historical periods;
5. Understand how historical experiences and memories have shaped contemporary societies;
6. Identify and understand the degree to which history has been used and misused in the past;
7. Demonstrate improvement in their ability to read critically, think logically, and express themselves clearly in writing.
HIST 1110G. United States History I
3 Credits (3)
The primary objective of this course is to serve as an introduction to the history of the United States from the pre-colonial period to the immediate aftermath of the Civil War. The elements of this course are designed to inform students on the major events and trends that are essential in the understanding of the development of the United States within the context of world societies.

Learning Outcomes
1. Students will be able to explain in their work how humans in the past shaped their own unique historical moments and were shaped by those moments, and how those cultures changed over the course of the centuries for the history of the United States from the pre-colonial period to the immediate aftermath of the Civil War. Bloom Taxonomy’s Cognitive Process: Remember and Understand
2. Students will distinguish between primary and secondary sources, identify and evaluate evidence and empathize with people in their historical context. Bloom Taxonomy’s Cognitive Process: Analyze, Remember, Evaluate, Create
3. Students will summarize and appraise different historical interpretations and evidence in order to construct past events. Bloom Taxonomy’s Cognitive Process: Understand, Evaluate, Apply
4. Students will identify historical arguments in a variety of sources and explain how they were constructed, evaluating credibility, perspective, and relevance. Bloom Taxonomy’s Cognitive Process: Remember, Understand, Evaluate
5. Students will create well-supported historical arguments and narratives that demonstrate an awareness of audience. Bloom Taxonomy’s Cognitive Process: Create, Apply
6. Students will APPLY historical knowledge and historical thinking “in order to infer what drives and motivates human behavior in both past and present.” Bloom Taxonomy’s Cognitive Process: Apply, Analyze

HIST 1120G. United States History II
3 Credits (3)
The primary objective of this course is to serve as an introduction to the history of the United States from reconstruction to the present. The elements of this course are designed to inform students on the major events and trends that are essential in the understanding of the development of the United States within the context of world societies.

Learning Outcomes
1. Students will be able to explain in their work how humans in the past shaped their own unique historical moments and were shaped by those moments, and how those cultures changed over the course of the centuries for the history of the United States from the reconstruction to the present. Bloom Taxonomy’s Cognitive Process: Remember and Understand
2. Students will distinguish between primary and secondary sources, identify and evaluate evidence and empathize with people in their historical context. Bloom Taxonomy’s Cognitive Process: Analyze, Remember, Evaluate, Create
3. Students will summarize and appraise different historical interpretations and evidence in order to construct past events. Bloom Taxonomy’s Cognitive Process: Understand, Evaluate, Apply
4. Students will identify historical arguments in a variety of sources and explain how they were constructed, evaluating credibility, perspective, and relevance. Bloom Taxonomy’s Cognitive Process: Remember, Understand, Evaluate
5. Students will create well-supported historical arguments and narratives that demonstrate an awareness of audience. Bloom Taxonomy’s Cognitive Process: Create, Apply
6. Students will apply historical knowledge and historical thinking “in order to infer what drives and motivates human behavior in both past and present.” Bloom Taxonomy’s Cognitive Process: Apply, Analyze
HIST 1130G. World History I
3 Credits (3)
The primary objective of this course is to serve as an introduction to global history from the 16th century to the present. The elements of this course are designed to inform students on the major events and trends that are essential in the understanding of the development of world societies.

Learning Outcomes
1. Students will be able to explain in their work how humans in the past shaped their own unique historical moments and were shaped by those moments, and how those cultures changed over the course of the centuries for global history from ancient times to the 16th century. Bloom Taxonomy’s Cognitive Process: Remember and Understand
2. Students will distinguish between primary and secondary sources, identify and evaluate evidence and empathize with people in their historical context. Bloom Taxonomy’s Cognitive Process: Analyze, Remember, Evaluate, Create
3. Students will summarize and appraise different historical interpretations and evidence in order to construct past events. Bloom Taxonomy’s Cognitive Process: Understand, Evaluate, Apply
4. Students will identify historical arguments in a variety of sources and explain how they were constructed, evaluating credibility, perspective, and relevance. Bloom Taxonomy’s Cognitive Process: Remember, Understand, Evaluate
5. Students will create well-supported historical arguments and narratives that demonstrate an awareness of audience. Bloom Taxonomy’s Cognitive Process: Create, Apply
6. Students will apply historical knowledge and historical thinking “in order to infer what drives and motivates human behavior in both past and present.” Bloom Taxonomy’s Cognitive Process: Apply, Analyze

HIST 1140G. World History II
3 Credits (3)
The primary objective of this course is to serve as an introduction to global history from ancient times to the 16th century. The elements of this course are designed to inform students on the major events and trends that are essential in the understanding of the development of world societies.

Learning Outcomes
1. Students will be able to explain in their work how humans in the past shaped their own unique historical moments and were shaped by those moments, and how those cultures changed over the course of the centuries for the history of global history from the 16th century to the present. Bloom Taxonomy’s Cognitive Process: Remember and Understand
2. Students will distinguish between primary and secondary sources, identify and evaluate evidence and empathize with people in their historical context. Bloom Taxonomy’s Cognitive Process: Analyze, Remember, Evaluate, Create
3. Students will summarize and appraise different historical interpretations and evidence in order to construct past events. Bloom Taxonomy’s Cognitive Process: Understand, Evaluate, Apply
4. Students will identify historical arguments in a variety of sources and explain how they were constructed, evaluating credibility, perspective, and relevance. Bloom Taxonomy’s Cognitive Process: Remember, Understand, Evaluate
5. Students will create well-supported historical arguments and narratives that demonstrate an awareness of audience. Bloom Taxonomy’s Cognitive Process: Create, Apply
6. Students will Apply historical knowledge and historical thinking “in order to infer what drives and motivates human behavior in both past and present.” Bloom Taxonomy’s Cognitive Process: Apply, Analyze
HIST 1150G. Western Civilization I
3 Credits (3)
This course is a chronological treatment of the history of the western world from ancient times to the early modern era. The elements of this course are designed to inform students on the major events and trends that are essential in the understanding of the development of western civilization within the context of world societies. Selective attention will be given to "non-western" civilizations which impact and influence the development of "western" civilization.

Learning Outcomes
1. Students will be able to explain in their work how humans in the past shaped their own unique historical moments and were shaped by those moments, and how those cultures changed over the course of the centuries for the history of the western world from ancient times to the early modern era. Bloom Taxonomy's Cognitive Process: Remember and Understand
2. Students will distinguish between primary and secondary sources, identify and evaluate evidence and empathize with people in their historical context. Bloom Taxonomy's Cognitive Process: Analyze, Remember, Evaluate, Create
3. Students will summarize and appraise different historical interpretations and evidence in order to construct past events. Bloom Taxonomy's Cognitive Process: Understand, Evaluate, Apply
4. Students will identify historical arguments in a variety of sources and explain how they were constructed, evaluating credibility, perspective, and relevance. Bloom Taxonomy's Cognitive Process: Remember, Understand, Evaluate
5. Students will create well-supported historical arguments and narratives that demonstrate an awareness of audience. Bloom Taxonomy's Cognitive Process: Create, Apply
6. Students will apply historical knowledge and historical thinking "in order to infer what drives and motivates human behavior in both past and present." Bloom Taxonomy's Cognitive Process: Apply, Analyze

HIST 1160G. Western Civilization II
3 Credits (3)
This course is a chronological treatment of the history of the western world from the early modern era to the present. The elements of this course are designed to inform students on the major events and trends that are essential in the understanding of the development of western civilization within the context of world societies. Selective attention will be given to "non-western" civilizations which impact and influence the development of "western" civilization.

Learning Outcomes
1. Students will be able to explain in their work how humans in the past shaped their own unique historical moments and were shaped by those moments, and how those cultures changed over the course of the centuries for the history of the western world from the early modern era to the present. Bloom Taxonomy's Cognitive Process: Remember and Understand
2. Students will distinguish between primary and secondary sources, identify and evaluate evidence and empathize with people in their historical context. Bloom Taxonomy's Cognitive Process: Analyze, Remember, Evaluate, Create
3. Students will summarize and appraise different historical interpretations and evidence in order to construct past events. Bloom Taxonomy's Cognitive Process: Understand, Evaluate, Apply
4. Students will identify historical arguments in a variety of sources and explain how they were constructed, evaluating credibility, perspective, and relevance. Bloom Taxonomy's Cognitive Process: Remember, Understand, Evaluate
5. Students will create well-supported historical arguments and narratives that demonstrate an awareness of audience. Bloom Taxonomy's Cognitive Process: Create, Apply
6. Students will apply historical knowledge and historical thinking "in order to infer what drives and motivates human behavior in both past and present." Bloom Taxonomy's Cognitive Process: Apply, Analyze
HIST 1170. Survey of Early Latin America
3 Credits (3)
The primary objective of this course is to serve as a survey of the history of Latin America from pre-Columbian times through independence. This course will explore the contributions of Indigenous peoples, Africans, and Europeans to the creation of Latin America's diverse societies. The elements of this course are designed to inform students on the major events and trends that are essential to the understanding of the history of Latin America within the context of world societies.

Learning Outcomes
1. Students will be able to explain in their work how humans in the past shaped their own unique historical moments and were shaped by those moments, and how those cultures changed over the course of the centuries for the history of Latin America from independence to the present.
2. Bloom Taxonomy’s Cognitive Process: Remember and Understand
3. Students will distinguish between primary and secondary sources, identify and evaluate evidence and empathize with people in their historical context.
5. Students will summarize and appraise different historical interpretations and evidence in order to construct past events.
7. Students will identify historical arguments in a variety of sources and explain how they were constructed, evaluating credibility, perspective, and relevance.
8. Bloom Taxonomy’s Cognitive Process: remember, understand, evaluate
9. Students will create well-supported historical arguments and narratives that demonstrate an awareness of audience.
10. Bloom Taxonomy’s Cognitive Process: create, apply
11. Students will apply historical knowledge and historical thinking “in order to infer what drives and motivates human behavior in both past and present.”

HIST 1180. Survey of Modern Latin America
3 Credits (3)
The primary objective of this course is to serve as a survey of the history of Latin America from independence to the present. This course will explore the contributions of Indigenous peoples, Africans, and Europeans to the creation of Latin America’s diverse societies. The elements of this course are designed to inform students on the major events and trends that are essential to the understanding of the history of Latin America within the context of world societies.

Learning Outcomes
1. Students will be able to explain in their work how humans in the past shaped their own unique historical moments and were shaped by those moments, and how those cultures changed over the course of the centuries for the history of Latin America from independence to the present.
2. Bloom Taxonomy’s Cognitive Process: Remember and Understand
3. Students will distinguish between primary and secondary sources, identify and evaluate evidence and empathize with people in their historical context.
5. Students will summarize and appraise different historical interpretations and evidence in order to construct past events.
7. Students will identify historical arguments in a variety of sources and explain how they were constructed, evaluating credibility, perspective, and relevance.
8. Bloom Taxonomy’s Cognitive Process: remember, understand, evaluate
9. Students will create well-supported historical arguments and narratives that demonstrate an awareness of audience.
10. Bloom Taxonomy’s Cognitive Process: create, apply
11. Students will apply historical knowledge and historical thinking “in order to infer what drives and motivates human behavior in both past and present.”
HIST 2110. Survey of New Mexico History
3 Credits (3)
The primary objective of this course is to serve as an introduction to the history of New Mexico from the pre-Columbian times to the present day. The elements of this course are designed to inform students on the major events and trends that are essential in the understanding of the development of New Mexico within the context of the Americas.

Learning Outcomes
1. Students will be able to explain in their work how humans in the past shaped their own unique historical moments and were shaped by those moments, and how those cultures changed over the course of the centuries for the history of New Mexico from pre-Columbian times to the present day. Bloom Taxonomy's Cognitive Process: Remember and Understand
2. Students will distinguish between primary and secondary sources, identify and evaluate evidence and empathize with people in their historical context. Bloom Taxonomy's Cognitive Process: Analyze, Remember, Evaluate, Create
3. Students will summarize and appraise different historical interpretations and evidence in order to construct past events. Bloom Taxonomy's Cognitive Process: Understand, Evaluate, Apply
4. Students will identify historical arguments in a variety of sources and explain how they were constructed, evaluating, credibility, perspective, and relevance. Bloom Taxonomy's Cognitive Process: Remember, Understand, Evaluate
5. Students will create well-supported historical arguments and narratives that demonstrate an awareness of audience. Bloom Taxonomy's Cognitive Process: Create, Apply
6. Students will apply historical knowledge and historical thinking “in order to infer what drives and motivates human behavior in both past and present.” Bloom Taxonomy's Cognitive Process: Apply, Analyze

HIST 2245G. Islamic Civilizations to 1800
3 Credits (3)
History of Islamic civilizations to 1800.

Learning Outcomes
1. By the conclusion of the course, the student will be able to demonstrate a knowledge of the history of cultural encounters, exchanges, and conflicts between the Islamic world and the West from the seventh to the sixteenth century;
2. Be able to evaluate the major themes of cultural contact, conflict, and interchange between the Islamic world and the West;
3. Critically read and evaluate historical evidence with the goal of forming an argument about historical evidence
4. Communicate a historical argument logically, clearly, and effectively in writing.

HIST 2246G. Islamic Civilizations since 1800
3 Credits (3)
History of Islamic civilizations since 1800.

Learning Outcomes
1. By the conclusion of the course, the student will be able to demonstrate a knowledge of the history of cultural encounters, exchanges, and conflicts between the Islamic world and the West from the sixteenth century;
2. Be able to evaluate the major themes of cultural contact, conflict, and interchange between the Islamic world and the West;
3. Critically read and evaluate historical evidence with the goal of forming an argument about historical evidence
4. Communicate a historical argument logically, clearly, and effectively in writing.

HIST 2250G. East Asia to 1600
3 Credits (3)
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.

Learning Outcomes
1. Students will learn the analytic skills of interpreting historical changes and continuity.
2. They will assess and use historical documents, and learn how to evaluate varying historical interpretations.
3. Students will understand the chronological and geographic context of important historical events, and will understand the social, technological, economic, cultural and political components of the society under study in this course.
4. Students will understand how people shape their culture and its beliefs, and the way in which prevailing cultures and beliefs shape them.
5. They will understand the historical origins of present-day societies, to learn about their own historical roots.
6. They will learn about the development of structures of power, the production of and distribution of goods, and the relationship between science and technology and human values and behavior.
HIST 2251G. East Asia since 1600
3 Credits (3)
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.

Learning Outcomes
1. Students will learn the analytical skills of interpreting historical changes and continuity.
2. They will assess and use historical documents, and learn how to evaluate varying historical interpretations.
3. Students will understand the chronological and geographic context of important historical events, and will understand the social, technological, economic, cultural and political components of the society under study in this course.
4. Students will understand how people shape their culture and its beliefs, and the way in which prevailing cultures and beliefs shape them.
5. They will understand the historical origins of present-day societies, to learn about their own historical roots.
6. They will learn about the development of structures of power, the production of and distribution of goods, and the relationship between science and technology and human values and behavior.

HIST 2996. Special Topics
1-3 Credits
Specific subjects to be announced in the Schedule of Classes. Restricted to Community Colleges only. May be repeated for a maximum of 12 credits.

Learning Outcomes
1. Varies

HIT-HEALTH INFO TECHNOLOGY (HIT)

HIT 110. Electronic Health Records
3 Credits (3)
Current electronic health record principles, methods and procedures, and computerized medical record concepts and software applications will be introduced. Restricted to: Community Colleges only.

HIT 120. Health Information Introduction to Pharmacology
3 Credits (3)
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. May be repeated up to 3 credits. Crosslisted with: NURS 120. Restricted to Community Colleges campuses only.

HIT 130. Health Information Technology Anatomy & Physiology
3 Credits (3)
An introductory course in the basics of human structure and function. Body systems are examined as to how they relate to proper code selection and as part of the functioning of the body as a whole. Restricted to Community Colleges campuses only.

HIT 140. Health Information Introduction to Pathophysiology
3 Credits (3)
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 Credits (3)
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. May be repeated up to 3 credits. Crosslisted with: NURS 150, AHS 120 and BOT 150. Restricted to Community Colleges campuses only.

HIT 158. Advanced Medical Terminology
3 Credits (3)
Builds upon the concepts covered in HIT 150 or AHS 120 providing greater understanding of how to properly use and apply medical terminology used in the various health fields. Medical terminology associated with the body system's anatomy and physiology, pathology, diagnostic and therapeutic procedures, pharmacology, and abbreviations will be emphasized. Restricted to Community Colleges campuses only.

Prerequisite(s): HIT 150 or AHS 120.

HIT 221. Internship I
3 Credits (3)
Work experience that directly relates to a student's major field of study that provides the student an opportunity to explore career paths and apply knowledge and theory learned in the classroom. Internships may be paid or unpaid. Students are supervised/evaluated by both the employer and the instructor. C- or better is required for this course. Consent of Instructor required. Restricted to: BOT,HIT majors. Restricted to Community Colleges campuses.

HIT 228. Medical Insurance Billing
3 Credits (3)
Comprehensive overview of the insurance specialist's role and responsibilities. Concepts and applications that will assist the student in understanding the steps necessary for successfully completing the insurance claim filing and reimbursement processes for various insurance carriers, both private and government, will be emphasized. Restricted to Carlsbad campus only.

Prerequisite(s): HIT/NURS 150; BOT 208.

HIT 240. Health Information Quality Management
3 Credits (3)
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 Credits (2+2P)  
Comprehensive overview of the fundamentals, coding conventions, and principles of selecting the most appropriate ICD-10-CM/PCS diagnostic and procedure codes. The most recent version of ICD-10-CM/PCS and an in depth study of current Official Coding Guidelines for coding and reporting will be emphasized. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.  
Prerequisite(s): BOT 228.

HIT 255. Special Topics  
3 Credits (3)  
Specific topics to be announced in the Schedule of Classes. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.

HIT 258. Medical Coding II  
3 Credits (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-10-CM/PCS coding conventions and principles will be emphasized. Designed as a medical coding capstone course. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.  
Prerequisite(s): HIT 248.

HIT 268. Health Information Systems  
3 Credits (3)  
Overview of health data management, work planning, and organization principles; an introduction to health care information systems; and review of the fundamentals of information systems for managerial, clinical support, and information systems.

HLED-HEALTH EDUCATION

HLED 1154. Lifeguarding  
2 Credits (2)  
Skills training for a nonsurf lifeguard. Course will include Standard First Aid and CPR certification. May be repeated up to 2 credits. Students must be able to Swim 500 yards, dive to 9-foot depth and retrieve a 10-pound brick, surface dive to 5 feet then swim underwater 15 yards, tread water one minute.  
Learning Outcomes  
1. To help the student become aware of the common hazards associated with various types of aquatic facilities and to develop the knowledge and skills to eliminate or minimize such hazards.  
2. To help the student develop the skills necessary to recognize a person in distress or in a drowning situation and to effectively rescue that person.  
3. To help the student understand their responsibility to their employer, fellow employees and especially to the patrons of their facility.  
4. To provide explanations, demonstrations, practice and review of the rescue skills essential for lifeguarding.  
5. To instill in the students an understanding and appreciation for the responsibilities, swimming skills and additional duties of lifeguarding.  
6. To develop more advance swimming skills to assist in a water rescue.

HMSV-HUMAN SERVICES

HMSV 2110. Case Management  
3 Credits (3)  
This course introduces students to the concept of case management, how it is used in human services, and skills necessary to function effectively as case managers. The emphasis is on the client assessment process, service planning and delivery, and client advocacy. Topics introduced include observation, data collection, documentation, and reporting of client behaviors, identification and referral to appropriate services, monitoring, planning, and evaluation. This course provides student with basic knowledge and beginning case management skills.  
Prerequisite(s): PSYC 1110G and SOWK 2110G.  
Learning Outcomes  
1. Define the purpose of case management and explain the role of the case manager  
2. Explain the process of case management and what it entails  
3. Explain the ethical, professional and legal responsibilities of case managers  
4. Describe several settings within which case management takes place  
5. Apply principles of client record management, and protect client rights to privacy and confidentiality  
6. Use data to determine the appropriate referral service to professional, agencies, community programs or other resource, and clearly and specifically explain the referral service's role in treatment and contact information  
7. Apply standards of clinical evaluation, including establishing rapport, data gathering and screening, analysis of substance abuse implications, treatment possibilities, initial actions, and documentation of findings and treatment recommendations  
8. Incorporate individual and cultural relevance in concert with established situation-specific policies and procedures for crisis management.

HNRS-HONORS

HNRS 1110. Journeys of Discovery  
1 Credit (1)  
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.  
Learning Outcomes  
1. Students will comprehend and condense information to contribute to class discussions.  
2. Students will develop public speaking and presentation skills based on research conducted in and outside of class.  
3. Students will expand upon collaborative skills as both group presentations and group written reports.
HNRS 1115. Honors First Year Seminar
3 Credits (3)
This course is designed to introduce new first semester students to the life of the mind, the life of the University, and the principles that guide the NMSU University Honors Program. Combining critical thinking and experiential exploration, students will develop a personalized plan for success, both in and out of the classroom, consistent with the values of the Conroy Honors College and the mission of the University.

Learning Outcomes
1. Demonstrate critical thought about the nature of knowledge, learning, and student development in the contemporary University. Explain how key concepts and principles serve as the foundation for the Honors College mission and values. Create a plan for their experiences at NMSU, in and out of the classroom, that will maximize their academic achievement and personal success beyond graduation.

HNRS 1135G. Introduction to Biological Anthropology
3 Credits (3)
This course provides a basic introduction to the broad field of biological anthropology. The research interests of biological anthropologists include the history and development of modern evolutionary biology, molecular and population genetics, modern primates, the primate and human fossil record, and modern human biological diversity. This is an Honors version of ANTH 1135G. It is taught with ANTH 1135G with differentiated assignments.

Corequisite: HNRS 1135L.

Learning Outcomes
1. Summarize the basic principles of evolution and recognize how they apply to the human species. Recognize the biological and behavioral continuity of humans with all life, and especially other modern primate species. Identify ways in which the human species is biologically and behaviorally unique. Summarize fossil evidence for human evolution. Distinguish the major Paleolithic industries and outline the behavioral and cognitive changes indicated by the fossil and archeological evidence. Critically evaluate popular accounts of human variation and human evolution. Interpret modern human dilemmas (e.g., overpopulation, co-evolution of disease, and genetic engineering) from an evolutionary perspective. Discuss in class and analyze in writing scholarly arguments concerning course concepts.

HNRS 1135L. Introduction to Biological Anthropology Lab
1 Credit (1P)
This laboratory course expand on the topics covered in lecture course and uses scientific methods and principles to examine evidence for the process of evolution, the nature of heredity, human evolutionary history and family tree relationships, primate ecology and behavior, and modern human diversity. Hands-on experience with fossil and skeletal material will be an important part of the learning process. This is an Honors version of ANTH 1135L.

Corequisite: HNRS 1135G.

Learning Outcomes
1. Demonstrate an understanding of the scientific method. Employ principles of Mendelian genetics to determine genotype and phenotype probabilities, and calculate gene, genotype, and phenotype frequencies using the Hardy-Weinberg Equilibrium formula. Demonstrate an understanding of cell structure and functions. Use common lab and anthropometric equipment such as a compound microscope and calipers. Discuss primate evolution, and compare and contrast members of the Primate order in terms of structure, behavior, and phylogeny. Classify hominid species based upon selected traits such as anatomical changes associated with bipedalism, changes in the size and structure of the brain, and the development of culture. Locate and describe the major bones of the human skeleton, and identify characteristics of human skeletons or skulls such as gender, age, and ancestry. Discuss current research in genome analysis of various hominid populations.

HNRS 2110G. The Present in the Past: Contemporary Issues and their Historical Roots
3 Credits (3)
This course will take today’s concerns, trends, and customs and contextualize them in the past, explaining their historical origins and development. As an example, we will examine the history of celebrity and how celebrities – from Lord Byron to the Kardashians’ made an impact on their contemporaries and the broader society of their time. This reading- and writing-intensive course will help students develop skills related to critical thinking, logical argumentation, and written and oral communication.

Learning Outcomes
1. Analyze and critically interpret primary sources and understand how others might interpret and use the same material in different ways;
2. Recognize and articulate the diversity of human experience across a range of historical periods and/or cultural perspectives.
3. Understand how historical experiences and memories have shaped contemporary societies;
4. Identify and understand the degree to which history has been used and misused in the past;
5. Draw on historical and/or cultural perspectives to evaluate any or all of the following: contemporary problems/issues, contemporary modes of expression, and contemporary thought.
6. Demonstrate improvement in their ability to read critically, think logically, and express themselves clearly in writing.
HNRS 2111. Successful Fellowship Writing
1 Credit (1)
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. For freshmen and sophomores. 5 or higher
Prerequisite(s): An ACT score of 26 or higher; or a combination of an ACT score of 24-25 with a High School GPA of 3.75; or a NMSU cumulative GPA of 3.
Learning Outcomes
1. Review of Prestigious International and National scholarships
2. Best practices in preparing competitive proposals and applications
3. Effective strategies for writing compelling Executive summaries, Resumes, and Personal Statements

HNRS 2114G. Music in Time and Space
3 Credits (3)
Introduction to all forms of Music. Through our auditory senses and intellectual faculties music is an ideal means for intelligent and humanistic examination of peoples and cultures, and for the enhancement of life. Types of music covered include classical, jazz, rock and roll, and world music. Music videos, live in-class performances, evening concerts, and lectures will be used as a basis for discussions and research. May be repeated up to 3 credits. Restricted to Las Cruces campus only.
Learning Outcomes
1. Analyze and critically interpret significant primary texts and/or works of art (this includes fine art, literature, music, theatre, and film).
2. Compare art forms, modes of thought and expression, and processes across a range of historical periods and/or structures (such as political, geographic, social, cultural, religious, intellectual).
3. Recognize and articulate the diversity of human experience across a range of historical periods and/or cultural perspectives.
4. Draw on historical and/or cultural perspectives to evaluate all of the following: contemporary problems/issues, contemporary modes of expression, and contemporary thought.

HNRS 2117G. The World of the Renaissance: Discovering the Modern
3 Credits (3)
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. Restricted to Las Cruces campus only. 5 or higher
Prerequisite(s): An ACT score of 26 or higher; or a combination of an ACT score of 24-25 with a High School GPA of 3.75; or a NMSU cumulative GPA of 3.
Learning Outcomes
1. Analyze and critically interpret significant primary texts and/or works of fine art, literature, philosophy, and theatre from the early modern period;
2. Locate art forms, modes of thought and expression, and processes from the early modern period in historical and/or cultural context and compare them to those of other time periods;
3. Demonstrate an understanding of how early modern historical and/or cultural perspectives and key technological developments contributed to the development of contemporary thought and modes of expression;
4. Recognize and articulate the diversity of human experience across historical periods and/or cultural perspectives;
5. Demonstrate skill in working with relevant secondary resources and research tools to develop a class.

HNRS 2116G. Earth, Time and Life
4 Credits (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 1110. 5 or higher
Prerequisite(s): An ACT score of 26 or higher; or a combination of an ACT score of 24-25 with a High School GPA of 3.75; or a NMSU cumulative GPA of 3.
Learning Outcomes
1. Gain a general understanding of geology and the geological processes that have been occurring throughout Earth's history.
2. Learn about some of the common minerals and rocks that are the building blocks to geology and the rock cycle.
3. Investigate the processes associated with each rock type (e.g., volcanoes, faults, depositional processes, etc.) and as well as potential geologic hazards (e.g., volcanic eruptions, earthquakes, flooding, etc.).
4. Recognize and identify common minerals and rocks and understand the basic processes and conditions responsible for their formation and occurrence.
5. Comprehensively understand how the internal and external parts of the Earth have functioned throughout geologic time.

HNRS 2115G. Encounters with Art
3 Credits (3)
A multicultural examination of the principles and philosophies of the visual arts and the ideas expressed through them. 5 or higher
Prerequisite(s): An ACT score of 26 or higher; or a combination of an ACT score of 24-25 with a High School GPA of 3.75; or a NMSU cumulative GPA of 3.
Learning Outcomes
1. Articulate the relationship of art to the human experience
2. Apply the vocabulary of art to critical writings and discussions
3. Interpret art works within cultural, social, personal and historical contexts
HNRS 2120G. Foundations of Western Culture
3 Credits (3)
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. Prerequisite(s): An ACT score of 26 or higher; or a combination of an ACT score of 24-25 with a High School GPA of 3.75; or a NMSU cumulative GPA of 3.

Learning Outcomes
1. Students will enhance abilities to quickly read, comprehend, and evaluate lengthy, complex texts to extract their fundamental arguments.
2. Students will improve critical thinking by grappling with ethical issues about the rights of individuals versus societies.
3. Students will use historical analysis to contextualize current social, political, geographic, and economic issues and how the foundations continue to affect contemporary society.

HNRS 2130G. Shakespeare on Film
3 Credits (3)
How do Shakespeare's plays continue to speak to us through the medium of film? Written in a time of rapid social change, Shakespeare's plays invited audiences to think critically about the relationship between the self and others and to question conventions. Performances of Shakespeare have long been used to call out social injustice, from western anti-Semitism prior to World War II (The Merchant of Venice), to civil rights-era white supremacy in the US and apartheid in South African (Othello), and authoritarianism in the Arab Spring (Richard III). This course focuses on post-1980 Hollywood film versions of Shakespeare's plays and a few prior landmark adaptations around the world, examining how they use Shakespeare as a medium for debate and even a catalyst for social change.

Learning Outcomes
1. Demonstrate critical thinking by identifying issues and problems in the film adaptation of Shakespeare;
2. Engage in intercultural reasoning and develop intercultural competence and historical consciousness in analyzing film adaptations from the US, Europe, and Asia;
3. Engage with questions of personal and social responsibility as explored in Shakespeare's plays and modern film adaptations;
4. Conduct effective research on a relevant topic, evaluating the validity and authority of secondary sources, synthesizing ideas, and drawing reasonable conclusions;
5. Present independent research in collaboration with other student researchers and reflect on this teamwork experience.

HNRS 2140G. Plato and the Discovery of Philosophy
3 Credits (3)
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. Prerequisite(s): An ACT score of 26 or higher; or a combination of an ACT score of 24-25 with a High School GPA of 3.75; or a NMSU cumulative GPA of 3.

Learning Outcomes
1. Students will evaluate a number of Plato's dialogues to understand his doctrines and arguments.
2. Students will use their understanding to further evaluate why his philosophies have remained influential in modern, Western society and beyond.
3. Students will develop well-formulated, compelling arguments from philosophical texts.

HNRS 2141G. Bamboo and Silk: The Fabric of Chinese Literature
3 Credits (3)
Introductory survey of traditional and modern Chinese prose and poetry in translation with emphasis on genre, theme, and social/historical context. Prerequisite(s): An ACT score of 26 or higher; or a combination of an ACT score of 24-25 with a High School GPA of 3.75; or a NMSU cumulative GPA of 3.

Learning Outcomes
1. Students will acquire extensive knowledge of one of the world's oldest and richest literary traditions.
2. Not incidentally, students will also gain knowledge of China's history and philosophical traditions.
3. As this class is based on reading, writing, and discussion, students will hone their interpretive and expressive skills.

HNRS 2145G. Celtic Literature
3 Credits (3)
This course provides an overview of the most important early literary works of the so-called Celtic nations, principally Ireland and Wales, from a literary and historical approach. This literature stems from the period 600-1200 and ends with the development of the Romances under influence from the French.

Learning Outcomes
1. Students will learn the concept of the international folk tale;
2. Students will learn about the history of the Celts;
3. Students will learn about the concept of Celtic nations' formed during the 19th Century;
4. Students will enhance critical thinking skills;
5. Students will enhance written and oral communication.
HNRS 2160G. New Testament as Literature
3 Credits (3)
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. 5 or higher
Prerequisite(s): An ACT score of 26 or higher; or a combination of an ACT score of 24-25 with a High School GPA of 3.75; or a NMSU cumulative GPA of 3.
Learning Outcomes
1. Students will hone critical thinking skills by analyzing arguments and controversies surrounding the roots of Christianity.
2. Students will discern and discuss the viability of both literary and historical sources with debated authorship, dating, and interdependency.
3. Students will practice interpersonal navigation and maintaining an academic environment of respect as they discuss a number of topics that can be considered controversial or subjective.

HNRS 2161G. Window of Humanity
3 Credits (3)
Anthropology is the most humanistic of the sciences, and the most scientific of the humanities. This course will use anthropological perspectives to examine the human experience from our earliest origins, through the experiences of contemporary societies. We will gain insights into the influence of both culture and biology on shaping our shared human universals, and on the many ways in which human groups are diverse. Restricted to Las Cruces campus only. 5 or higher
Prerequisite(s): An ACT score of 26 or higher; or a combination of an ACT score of 24-25 with a High School GPA of 3.75; or a NMSU cumulative GPA of 3.
Learning Outcomes
1. Explain the concepts that define Anthropology (along with its subfields) as a specific research discipline.
2. Possess a growing vocabulary for anthropology, cultural study, ethnographic research and writing that will empower them as they continue with their degrees and professional careers.
3. Recognize how Anthropological concepts, terms, and methods are valuable for present-day concerns and how these tools can be used to engage life and the world at large.

HNRS 2165. Humanities in the 21st Century
3 Credits (3)
An exploration of the humanities, of their intrinsic and extrinsic values, and of the skills and habits of mind they cultivate.
Learning Outcomes
1. Articulate what the humanities are and what role they have played in education throughout the ages
2. Articulate examples of the intrinsic value of the humanities
3. Articulate the skills and habits of thought in at least one chosen discipline in the humanities
4. Articulate common misconceptions about university majors and reframe the common misconceptions
5. Create at least three employment scenarios based on your skills and interests
6. Exercise divergent thinking with regards to future career paths

HNRS 2170G. The Human Mind
3 Credits (3)
The primary course objective is to develop an appreciation of the variety and complexity of problems that are solved by the human mind. The course explores how problems are solved by a combined computational analysis (computational theory of mind), and evolutionary (evolution by natural selection) perspective. The mind is what the brain does (i.e. information processing) and the brain is a computational device that is a product of evolution by natural selection. Note that this is not a neuroscience course, we will be focusing on the mind (what the brain does) rather than on the brain. Restricted to Las Cruces campus only.
Learning Outcomes
1. Enhance written and oral communication
2. Stimulate critical thinking and learn to weigh scientific evidence
3. Challenge students to make ethical decisions and promote personal and social responsibility

HNRS 2171G. The Worlds of Arthur
3 Credits (3)
Arthurian texts and traditions from medieval chronicles to contemporary literature. Emphasis on both the continuities of the Arthurian tradition and the diversity of genres, media, and cultures that have given expression to the legend. May be repeated up to 3 credits. Restricted to Las Cruces campus only.
Learning Outcomes
1. Students will examine how texts and narratives, even with fictional implications, still held psychological, social, cultural, and religious sway within developed societies throughout history.
2. Students will synthesize information from an array of both primary and secondary sources to measure the cultural significance King Arthur holds in contemporary societies.
3. Students will extrapolate how a society's values at any point in history will affect the transference of mythos, just as a myth transmits the values of that society.
HNRS 2172G. Archaeology: Search for the Past
3 Credits (3)
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. May be repeated up to 3 credits. Restricted to Las Cruces campus only. 5 or higher
Prerequisite(s): An ACT score of 26 or higher; or a combination of an ACT score of 24-25 with a High School GPA of 3.75; or a NMSU cumulative GPA of 3.

Learning Outcomes
1. Identify, describe, and explain how human lifeways changed in diverse communities in different parts of the globe.
2. Select and use relevant archaeological evidence to articulate how people’s beliefs and values were influenced by politics, geography, economics, culture, biology, history, and social institutions in the past.
3. Analyze the significance of archaeological artifacts in context and explain their relevance to understanding relations among individuals, their society, and the environment.
4. Evaluate how practices in research, conservation, and tourism to archaeological sites promote ethical stewardship of non-renewable archaeological resources.
5. Design a study tour to archaeological sites that will address a key question or argument in prehistory and promote historic/archaeological preservation.

HNRS 2173G. Middle Ages
3 Credits (3)
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. 5 or higher
Prerequisite(s): An ACT score of 26 or higher; or a combination of an ACT score of 24-25 with a High School GPA of 3.75; or a NMSU cumulative GPA of 3.

Learning Outcomes
1. Students will hone critical reading skills as they read through a wealth of texts, by prioritizing attention to details and how it affects the overall narrative.
2. Students will recognize how the social, religious, and political environments of the medieval era shaped contemporary society in affected regions beyond Europe.
3. Students will employ comparative analysis skills as they examine how Islamic culture might have influenced poetry and music in medieval Europe.

HNRS 2174G. American Politics in a Changing World
3 Credits (3)
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. 5 or higher
Prerequisite(s): An ACT score of 26 or higher; or a combination of an ACT score of 24-25 with a High School GPA of 3.75; or a NMSU cumulative GPA of 3.

Learning Outcomes
1. Students will enhance their understanding of the operation of major American political institutions and processes.
2. Students will investigate how the uniquely American form of constitutional governance has sought to adapt to changing historical and cultural conditions.
3. Students will practice interpersonal navigation and maintaining an academic environment of respect as they discuss a number of topics that can be considered controversial or subjective.

HNRS 2175G. Introduction to Communications Honors
3 Credits (3)
Study and practice of interpersonal, small group, and presentational skills essential to effective social, business, and professional interaction. 5 or higher
Prerequisite(s): An ACT score of 26 or higher; or a combination of an ACT score of 24-25 with a High School GPA of 3.75; or a NMSU cumulative GPA of 3.

Learning Outcomes
1. Analyze and evaluate oral and written communication in terms of situation, audience, purpose, aesthetics, and diverse points of view.
2. Express a primary purpose in a compelling statement and order supporting points logically and convincingly.
3. Use effective rhetorical strategies to persuade, inform and engage.
4. Employ writing and/or speaking processes such as planning, collaborating, organizing, composing, revising editing to create presentations using correct diction, syntax, grammar and mechanics.
5. Integrate research correctly and ethically from credible sources to support the primary purpose of a communication.
6. Engage in reasoned civil discourse while recognizing the distinctions among opinions, facts, and inferences.

HNRS 2176. Acting for Everyone
3 Credits (3)
To provide fundamental training in acting techniques, including stage voice and movement, improvisation, ensemble building, characterization, emotion exploration and basic performance analysis. The course will provide a correlation between theatre skills and everyday “life” skills and seek to encourage an appreciation for the art of theatre.

Learning Outcomes
1. Improve effectiveness of oral communication.
2. Enhance creativity and appreciation of theatre.
3. Build confidence and expressiveness.
HNRS 2178G. Theatre: Beginnings to Broadway
3 Credits (3)
Intercultural and historical overview of live theatre production and performance, including history, literature and professionals. Students attend and report on stage productions. 5 or higher
Prerequisite(s): An ACT score of 26 or higher; or a combination of an ACT score of 24-25 with a High School GPA of 3.75; or a NMSU cumulative GPA of 3.
Learning Outcomes
1. Distinguish and differentiate the characteristics of theatre from other art forms.
2. Describe the major components of a theatrical event.
3. Describe the functions of various theatre personnel.
4. Define specific terms relating to the study of theatre.
5. List and describe the parts of a play.
6. Define the different parts of plot.
7. Critique plays
8. Describe the characteristics of theatre in the different periods of history.
9. Develop an appreciation for theatre as an art form and a reflection of society

HNRS 2180G. Citizen and State Great Political Issues
3 Credits (3)
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. 5 or higher
Prerequisite(s): An ACT score of 26 or higher; or a combination of an ACT score of 24-25 with a High School GPA of 3.75; or a NMSU cumulative GPA of 3.
Learning Outcomes
1. Students will investigate the fluid state of American politics by discerning the decisions and policies of a selection of presidents.
2. Students will investigate the complex operations behind a representative democracy.
3. Students will examine how the sociopolitical environment surrounding a president influences his policies, and how a president’s policies affect the broader society.
4. Students will assess and measure how politics can be affected by active and engaged citizens

HNRS 2185G. Democracies, Despots and Daily Life
3 Credits (3)
This course will offer students the chance to read firsthand accounts of ordinary citizens’ lives under different political systems, from the earliest age to the present day. This reading- and writing-intensive course will help students develop skills related to critical thinking, logical argumentation, and written and oral communication.
Learning Outcomes
1. Analyze and critically interpret primary sources and understand how others might interpret and use the same material in different ways;
2. Recognize and articulate the diversity of human experience across a range of historical periods and/or cultural perspectives.
3. Understand how historical experiences and memories have shaped contemporary societies;
4. Identify and understand the degree to which history has been used and misused in the past;
5. Draw on historical and/or cultural perspectives to evaluate any or all of the following: contemporary problems/issues, contemporary modes of expression, and contemporary thought.
6. Demonstrate improvement in their ability to read critically, think logically, and express themselves clearly in writing.

HNRS 2190G. Claiming a Multiracial Past
3 Credits (3)
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. 5 or higher
Prerequisite(s): An ACT score of 26 or higher; or a combination of an ACT score of 24-25 with a High School GPA of 3.75; or a NMSU cumulative GPA of 3.
Learning Outcomes
1. Students will contextualize the current state of American “being” by focusing on the multicultural-social and cultural history of the U.S. in the nineteenth and twentieth centuries.
2. Students will hone public speaking and presentation skills through classroom discussions and activities.
3. Students will practice interpersonal navigation and maintaining an academic environment of respect as they discuss a number of topics that can be considered controversial or subjective.

HNRS 2996. Special Topics
1-3 Credits (1-3)
Special course offerings, with unique titles listed in Schedule of Classes. May be repeated up to 6 credits.
Learning Outcomes
1. Varies
HORT-HORTICULTURE (HORT)

HORT 1115G. Introductory Plant Science
4 Credits (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 1110G.

Learning Outcomes
1. Describe the role plants play in everyday lives
2. Introduce career opportunities in plant and soil sciences, and related fields
3. Define plants through the concepts of plant structure and anatomy
4. Introduce the wide variety of plants cultivated throughout the world
5. Describe how plants work (growth, reproduction, physiology, and soil)
6. Describe how plants are manipulated to feed, clothe and entertain the world

HORT 2110. Ornamental Plants I
4 Credits (2+3P)
Covers identification, botanical characteristics, culture, and landscape uses of woody plants. Emphasis on deciduous trees, native shrubs, and evergreens.

Learning Outcomes
1. Given 35 ornamental plants selected from the course’s plant list, 100% of students will be expected to correctly identify the genus, species, and common names of the plants with 70% accuracy.
2. Given plants selected from the course’s plant list, 100% students will be expected to identify to landscape use of those plants with 85% accuracy.

HORT 2120. Ornamental Plants II
4 Credits (2+3P)
Identification, botanical characteristics, culture, and landscape uses of woody plants. Emphasis on flowering trees, cacti, and members of the pea and rose families.

Learning Outcomes
1. Given 35 ornamental plants selected from the course’s plant list, 100% of students will be expected to correctly identify the genus, species, and common names of the plants with 70% accuracy.
2. Given plants selected from the course’s plant list, 100% students will be expected to identify to landscape use of those plants with 85% accuracy.

HORT 2130. Floral Quality Evaluation and Design
2 Credits (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.

Learning Outcomes
1. Identify common floriculture crops, or know resourcing to help identify the crop.
2. Evaluate quality (merit and fault) of common floriculture crops, based on industry standards and merit. Pi Alpha Xi and American Floral Endowment standards will be used for the purpose of this class.
3. Have a basic understanding of the floriculture industry, and identify career pathways within the industry.
4. Know, understand, creatively interpret, and execute basic principles of design in regards to floral design.
5. Use interpersonal communication, problem solving, basic math, and marketing during cash and carry “lab” time (flower sales) in developing job ready skills in floristry.
6. Layer principles of design, marketing, sales, and time management to create floral art in real-world scenarios.

HORT 2160. Plant Propagation
3 Credits (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 2160.

Learning Outcomes
1. Practical methods of propagating plants by seed, cuttings, layering, grafting, division, and tissue culture through experiential, “hands-on” laboratories.
2. Relevant physiological principles involved in propagating horticultural plants through lecture discussions and readings.

HORT 2990. Floriculture Field Practicum
1 Credit (1)
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 2130 or consent of instructor.

Learning Outcomes
1. Varies

HORT 2996. Special Topics
1-4 Credits
Specific subjects and credits as announced. Maximum of 4 credits per semester and a grand total of 9 credits. May be repeated up to 9 credits. Consent of Instructor required.

Learning Outcomes
1. Varies

HOST-HOSPITALITY AND TOURISM (HOST)

HOST 155. Special Topics
1-3 Credits (1-3)
Specific subjects to be announced in the Schedule of Classes. Restricted to: Community Colleges only.
HOST 201. Introduction to Hospitality Industry
3 Credits (3)
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 Credits (3)
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 Credits (3)
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 Credits (3)
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 Credits (3)
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 Credits (3)
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 Credits (3)
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 Credits (3)
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 Credits (3)
Prepares students to make effective business decisions based on financial report information; forecasting, budgeting, cost analysis. Restricted to: Community College campuses only.
Prerequisite(s): BOT 120 or ACCT 2110.

HOST 210. Catering and Banquet Operations
3 Credits (3)
Teaches the basics of catering and banquet operations, including computer coordination, planning, set up, service, and completion. Restricted to Community Colleges campuses only.

HOST 214. Purchasing and Kitchen Management
3 Credits (3)
Technical purchasing concepts, product selection, and specifications. Safety and sanitation as they relate to food service establishments. Prepares student for work with HACCP programs. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): HOST 203.

HOST 216. Event, Conference and Convention Operations
3 Credits (3)
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 219. Safety, Security and Sanitation in Hospitality Operations
3 Credits (3)
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 221. Internship I
1-3 Credits (1-3)
Work experience that directly relates to a student’s major field of study that provides the student an opportunity to explore career paths and apply knowledge and theory learned in the classroom. Internships may be paid or unpaid. Students are supervised/evaluated by both the employer and the instructor. May be repeated up to 3 credits. Consent of Instructor required. Restricted to: OEHS, HOST majors. Graded: S/U Grading (S/U, Audit). Restricted to Community Colleges campuses only.

HOST 222. Cooperative Experience II
3 Credits (3)
Continuation of HOST 221. Restricted to majors. Graded: S/U. Restricted to: Community College campuses only. Restricted to HOST majors.
Prerequisite(s): HOST 221.

HOST 239. Introduction to Hotel Management
3 Credits (3)
This course covers basic management functions in hotels, resorts, Boutique Hotels, Bed & Breakfast establishments, and other lodging operations. All aspects of the operation are covered including guest management, operations, and sales and marketing. Restricted to: Branch campuses only.

HOST 255. Special Topics
3 Credits (3)
Specific subjects to be announced in the Schedule of Classes. May be repeated up to 9 credits. Restricted to Community Colleges campuses only.

HOST 298. Independent Study
1-3 Credits (1-3)
Individual studies directed by consenting faculty with prior approval of department chair. May be repeated for a maximum of 3 credits. Restricted to: Community College campuses only.
Prerequisite(s): Minimum 3.0 GPA and sophomore standing.
HRTM-HOTEL/RESTRNT/TOURISM MGT (HRTM)

HRTM 1120G. Introduction to Tourism
3 Credits (3)
Survey of travel and tourism development and operating characteristics.
Learning Outcomes
1. Define tourism and related terms. Identify and explain the role of the elements of the destination mix. Identify the potential socio-cultural, economic and environmental impacts of tourism.
2. Identify and describe the role of key governmental and nongovernmental organizations in tourism.
3. Describe basic tourism planning and development principles.
4. Discuss the unique challenges of tourism marketing and standard marketing methods.
5. Describe the components of the tourism distribution system.
6. Demonstrate a basic understanding of traveler behavior including motivations and barriers to travel. Identify major factors that influence traveler flows. Describe the role of major modes of transportation in the tourism system.
7. Identify and describe the three pillars of sustainable tourism development. Explain personal and social responsibility as it relates to sustainable tourism development. Demonstrate effective communication and critical thinking skills.

HRTM 1130. Introduction to Hospitality Management
3 Credits (3)
Overview of the major segments of the hospitality industry, with a focus on basic management principles.
Learning Outcomes
1. Understand the concept of management contracts and franchising.
2. Recognize and understand needed leadership qualities to achieve organizational objectives.
3. Understand the hospitality industry within the global environment.
4. Identify company and industry trends.
5. Understand the functions of all departments in a hospitality organization (restaurant, hotel, club, etc.).
6. Apply the concepts of convention management, meeting and event planning, and casino management.
7. Understand the concepts of quick and institutional/contract foodservice management.
8. Understand the principles of bar management and compare and contrast wines, beers and distilled spirits.
9. Manage the process of service delivery.
10. Identify and solve managerial problems
11. Manage a diverse workforce and develop positive employee relations to reduce turnover.

HRTM 2110. Safety, Sanitation and Health in the Hospitality Industry
1 Credit (1)
Addresses public health, HACCP and food safety responsibilities in the hospitality industry. Sanitation certification test allows students to receive national ServSafe Food Protection Manager Certification. Restricted to Las Cruces campus only.
Learning Outcomes
1. Identify the hazards to safe food and the foods at risk in a foodservice operation.
2. Identify and discuss the Hazard Analysis Critical Control Point (HACCP) system and be able to design a HACCP flowchart.
3. Demonstrate knowledge of how to protect food during purchasing, receiving, storing, preparing, holding, and serving.
4. Discuss the procedures for ensuring sanitary equipment, facilities, and food-handling practices.
5. Explain how to set-up cleaning, safety, pest control, crisis management, and training programs.
HRTM 2120. Food Production and Service Fundamentals
3 Credits (1+4P)
Basic overview of food service systems including menu management, purchasing and production. The course 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. The course includes laboratory aspects and demonstration of basic food production techniques, service styles, practices and procedures in food service operations including culinary math. This course provides students with an understanding of food service sanitation and culinary nutrition. Completion of a national certification examination is required. Students who have not completed HRTM 2110 before enrolling in the course must have proof of valid ServSafe Food Protection Manager certificate. Restricted to Las Cruces campus only. Prerequisite(s)/Corequisite(s): HRTM 2110
Prerequisite(s): HRTM 1130 or FSTE 2110G.
Learning Outcomes
1. Demonstrate use of standard recipes and how to reduce and increase their yields.
2. Demonstrate basic culinary knife cuts, basic fabrication and mise en place
3. Demonstrate basic cookery techniques of dry, moist and a combination of heat
4. Demonstrate the proper plating and garnishing of foods
5. Describe proper personal behaviors required for the safe handling of food
6. Identify and properly operate kitchen equipment.
7. Pass the ServSafe Exam
8. Describe the three forms of food contaminants and preventative measures.
9. Demonstrate how to properly “set” a table for service
10. Demonstrate how to provide dining room service with proper etiquette
11. Demonstrate safe work habits, identify safety hazards, and employ preventative safety measures.
12. Maintain positive relations with fellow students and faculty through teamwork.
13. Exhibit appropriate work habits and attitudes; demonstrate a willingness to compromise.
14. Demonstrate a positive attitude, conversation skills, personal hygiene and work attire.

HRTM 2130. Hotel Operations I
3 Credits (3)
Analysis of hotel operations to include: guest services, reservations, reception, guest/city ledger and the night audit. May be repeated up to 3 credits. Restricted to Las Cruces campus only. Prerequisite(s): HRTM 1130.
Learning Outcomes
1. Outline the history, magnitude and culture of the hotel industry
2. Define and identify hotel ownership and operational structures
3. Outline the organization and structure of a hotel and resort.
4. Describe and calculate the components and processes of room reservation forecasting, pricing and revenue management.
5. Outline and explain the flow of the guest from pre-arrival through arrival, room occupancy and departure.
6. Demonstrate the procedures and processes for Guest Accounting, the City Ledger, Guest Credit and the Night Audit.
7. Discuss problem solving and guest service associated with the front office and other departments of the hotel and resort.
8. Forecast impacts of technology to the guest services and hotel operations
9. Describe the day to day activities and responsibilities of a Hotel Front Office Manager or a Hotel Assistant General Manager (AGM).

HRTM 2996. Special Topics
1-4 Credits
Specific subjects and credits to be assigned on a semester basis for both lecture and laboratory assignments. May be repeated for a maximum of 4 credits.
Prerequisite: consent of instructor.
Learning Outcomes
1. Varies

HVAC-HEATING/AC/REFRIGERATION (HVAC)

HVAC 100. EPA Clean Air Act: Section 608
1 Credit (1)
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 Credits (3+2P)
Refrigeration cycle and the various mechanical components. Use of special tools, equipment, and safety precautions.

HVAC 102. Fundamentals of Electricity
4 Credits (3+2P)
Introduction to electricity theory, OHM’s Law, circuits, AC/DC, and practical applications.

HVAC 103. Electrical and Mechanical Controls I
4 Credits (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 110. Professional Development and Leadership 
1 Credit (1)
As members and/or officers of various student professional organizations, students gain experience in leadership, team building, and community service. Students competing in Skills USA are required to register for the course. May be repeated up to 6 credits. Consent of Instructor required. Restricted to: HVAC majors. Graded: S/U Grading (S/U, Audit). Restricted to: Community Colleges only.

HVAC 113. Job Shadowing 
1 Credit (1)
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 only.

HVAC 205. Commercial Refrigeration Systems 
4 Credits (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 Credits (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 Credits (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 Credits (3+3P)
Covers troubleshooting mechanical and electrical problems associated with HVAC equipment in commercial buildings. Includes gas, electric, and heat pump systems. Restricted to Community Colleges campuses only.
Prerequisite(s): HVAC 103 or consent of instructor.

HVAC 211. Heat Pump Systems 
4 Credits (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 Credits (3)
Working in the field with journeymen service technicians. Develop and apply job skills. May be repeated up to 3 credits. Consent of Instructor required. Restricted to: HVAC majors. Restricted to Community Colleges campuses only.
Prerequisite(s): HVAC 113 and Consent of instructor.

HVAC 220. Introduction to Sheet Metal Fabrication 
4 Credits (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 Credits
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 Credits
Topics to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits.
Prerequisite: consent of instructor.

HVAC 290. Special Problems 
1-4 Credits
Individual studies related to heating, air conditioning, and refrigeration.
Prerequisites: HVAC 101, HVAC 102, and consent of instructor.

I E - INDUSTRIAL ENGINEERING (I E)

I E 151. Computational Methods in Industrial Engineering 
3 Credits (3)
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 1220G.

I E 200. Special Problems-Sophomore 
1-3 Credits
Directed individual projects. May be repeated for a total of 3 credits.
Prerequisite: consent of faculty member.

I E 217. Manufacturing Processes 
3 Credits (3)
Introduction to manufacturing and processing, including: casting, forming, and machining. Emphasis on creating products with the appropriate techniques. Crosslisted with: E T 217.
Prerequisite: E T 110 and MATH 1220G.
Learning Outcomes
1. Various

I E 217 L. Manufacturing Processes Laboratory 
1 Credit (3P)
Laboratory associated with I E 217. May be repeated up to 1 credits.
Prerequisite(s): E T 110.
Corequisite(s): I E 217.

INMT - INDUSTRIAL MAINTENANCE (INMT)

INMT 133. Process Technology and Systems 
4 Credits (4)
Provides instruction in the use of common process equipment. Students will use appropriate terminology and identify process equipment components such as piping and tubing, valves, pumps, compressors, turbines, motors, engines, heat exchangers, heaters, furnaces, boilers, filters dryers and other miscellaneous vessels. Included are the basic functions, scientific principles and symbols. Students will identify components on typical Process Flow Diagrams and Process and Instrument Diagrams. Restricted to Carlsbad campus only.
INMT 134. Maintenance Principles
4 Credits (4)
The course is an introduction to the maintenance of equipment utilizing mechanical, electrical and instrumentation concepts. Topics include: hand tools, bearing fundamentals, equipment lubrication, material handling, electrical safety, battery systems, diagrams, electrical production and distribution, transformers, breakers, switches, AC and DC motors, motor controllers and operations, and introduction to automation and instrumentation control. Restricted to Carlsbad campus only.

INMT 165. Equipment Processes
4 Credits (4)
This course introduces power transmission equipment and machinery components, including belt/chain driven equipment, speed reducers, variable speed drives, couplings, clutches, and conveying equipment. Students will learn the operation, maintenance, and troubleshooting for these types of equipment. The course also includes Overhead Crane Certification and Safety. Restricted to Carlsbad campus only.

INMT 205. Programmable Logic Controllers and Applications
4 Credits (4)
Students learn about programmable logic controllers; architecture; programming, interfacing, and applications. Hands-on experience on modern commercial PLC units is the main component. Restricted to Carlsbad campus only.
Prerequisite(s): BCIS 1110.

INMT 223. Electrical Repairs
4 Credits (4)
This course outlines for students the types of problems that occur in electrical machinery and systems. The course covers trouble-shooting and diagnosis, preventative maintenance, and how to make necessary repairs. Restricted to Carlsbad campus only.

INMT 235. Mechanical Drives I
4 Credits (4)
This course teaches the fundamentals of mechanical transmission systems used in industrial, agrucultural, and mobile applications. Students will learn industrial relevant skills including how to: operate, install and analyze performance, and design basic transmission systems using chains, feed-belts, spur gears, bearings, and couplings. Vibration analysis will be used to determine when to perform maintenance of power transmission components. The course also covers power transmission safety, and introduction to belt and chain drives (applications, installations, and tensioning), and introduction to gear drives, coupling, and bearing, basic troubleshooting, blueprint and print reading, learning the basics of electrical drives and PDM and PM. Restricted to Carlsbad campus only.

INMT 237. Hydraulics I
2 Credits (2)
This course teaches fundamentals of hydraulic systems used in industry mobile application. Students learn the basic theory of application of hydraulic and electricity as it applies to hydraulics. Covered in the course are basic systems, principles of flow, pressure, viscosity, filtration, and colling. Also covered are basic components such as motor, pumps, cylinders, piping and control and relief valves. Troubleshooting strategies are discussed, along with blueprint and print reading, and PDM and PM. Industry, relevant skills including how to operate, install, analyze performance, and design basic hydraulic systems, reviewing intermediate hydraulic components and system applications. Restricted to Carlsbad campus only.

INMT 261. Pump Operations I
4 Credits (4)
This course teaches how to select, operate, install, and maintain the many types of pumps used by industry. Students learn the theory and practical application of all types of processed pumps and pipe systems. It covers types, components, and systems operation. It also covers troubleshooting for flow loss and cavitation. Students learn how to select, operate, install, and repair the many types of pumps used by industry. Other topics covered include: Net Positive Suction Head, pump flow/head measurement, pressure head conversion, pressure flow characteristics, cavitation, series/parallel pump operation, mechanical seal/stuffing box maintenance, multi stage operation and construction, positive displacement pumps, turbine, diaphragm, perisaltic, piston, gear, and magnetic pump systems. Restricted to Carlsbad campus only.

INMT 262. Piping Systems
2 Credits (2)
This course teaches students how to install, maintain and troubleshoot fluid systems such as how to select, size, identify, install a variety of types of piping, fittings, and valves. Measurement techniques from basic to precision measurement, gauging, including the fundamentals of dimensioning and tolerancing will be taught. Restricted to Carlsbad campus only.

INMT 263. Mechanical Drives II
4 Credits (4)
This course teaches the bearings and gears used in heavy duty mechanical transmission systems. This course will emphasize linear access drives, clutches, and brakes. In addition, this course teaches how to set up, operate and apply laser shaft alignment to a variety of industrial applications. This course is a study of the basic concepts and procedures for the maintenance and operations of pumps, turbines, seals, bearings, and compressors. The course will provide the student with the knowledge and skills necessary to perform proper maintenance, repair, replacement and selection of pumps, turbines, seals, bearings and compressors. Also covered are advanced gearbox, coupling and bearings, precision alignment (shaft, flange, and sheave), as well as basic vibration analysis and thermography as troubleshooting and RCA aids. Restricted to Carlsbad campus only.

INMT 264. Rigging
2 Credits (2)
This course teaches how to safely move loads of different shapes and sizes using a variety of different methods. Students will lift loads and demonstrate how to move it. Students will use hoists, slings, ropes and fittings to learn how to safely lift a wide variety of loads. Included are weight estimation, lifting rules, load ratings (sling, wire, ropes and hoists). Restricted to Carlsbad campus only.

INMT 265. Hydraulics II
2 Credits (2)
This course teaches advanced hydraulics systems. The student will learn operation of advanced hydraulic systems applications, equipment installation, performance analysis of motors and pumps, accumulators, control, relief and check valve, equipment maintenance, and system design. The course covers accumulators, sequence valves, pilot circuits and unloader valves. Students learn more troubleshooting, hydraulic drives and other applications. Restricted to Carlsbad campus only.
INMT 267. Pump Operations II
2 Credits (2)
This course teaches the student the disassembly, inspection and reassembly of centrifugal and positive displacement pumps. This course allows the student to identify and replace worn or broken components of pumps, and learn predictive and preventive maintenance principles. Lockout of the pump will be performed in addition to measurements and alignment. Restricted to Carlsbad campus only.

INTEGRATED NATURAL SCIENCES (NSC)

NSC 131. General Sciences
3 Credits (2+2P)
Designed for Allied Health students to explore the fundamentals of physical and life sciences.

JAPN-JAPANESE

JAPN 1110. Japanese I
4 Credits (4)
This course focuses on the basics of the Japanese language with a balanced approach to the development of four skills: listening, speaking, reading and writing. The course is designed to teach students to communicate with Japanese socially and to utilize culturally appropriate manners to engage in Japanese daily life. While conversational skills are emphasized, the student will also be introduced to the various Japanese scripts.

Learning Outcomes
1. Become introduced to the sound system of the Japanese language.
2. Gain a basic understanding of Japanese scripts.
3. Learn and utilize vocabulary needed for basic conversation.
4. Converse and write on topics related to immediate personal needs, greetings, introductions, personal data, daily routines and school.
5. Comprehend both artificial and authentic written and aural texts of short length on familiar topics.
6. Comprehend and use essential grammar concepts.
7. Identify patterns of cultural behavior or customs in Japan, including gestures, greetings, and body language.
8. Gain the ability to converse using Japanese idiomatic expressions.

JAPN 1120. Japanese II
4 Credits (4)
This course focuses on building upon the basics of the Japanese language with a balanced approach to the development of four skills: listening, speaking, reading and writing. The course is designed to teach students to communicate with Japanese socially and to utilize culturally appropriate manners to engage in Japanese daily life. Along with further developing conversational skills, the student will also continue to learn about and utilize various Japanese scripts.

Prerequisite: grade of C or better in JPNS 1110 or consent of instructor.

Learning Outcomes
1. Understand and utilize in more depth the sound system of the Japanese language.
2. Gain a greater understanding of Japanese scripts.
3. Utilize expanded vocabulary in conversation.
4. Converse and write on topics related to personal, social, geographical, and political life.
5. Comprehend both artificial and authentic written and aural texts of longer, but still brief length, such as personal letters, messages, journals, and narrative accounts.
6. Comprehend and use essential and more complex grammatical concepts.
7. Continue to develop a sense of culturally appropriate conduct.
8. Build upon the ability to converse using Japanese idiomatic expressions.

JAPN 2110. Japanese III
3 Credits (3)
This course is designed for students who have completed 12 credit hours or the equivalent of Japanese study. This course continues to expand vocabulary, grammar and 209 Kanji to deal with daily activities. Its objective is to teach students to communicate in a meaningful way using all four language skills: speaking, listening comprehension, reading and writing. Students will be able to manage not-complicated daily situation. Students will attain ACTFL intermediate-low level in four skills.

Prerequisite: grade of C or better in JPNS 1120 or consent of instructor.

Learning Outcomes
1. Participate in conversations on familiar topics, such as applying part-time job, gift giving/receiving.
2. planning a trip, lost and found, using sentences and short series of sentences.
3. Handle short social interactions in everyday situations by asking and answering a variety of questions.
4. Usually say what they want to say about themselves and their everyday life.
5. Write on a variety of familiar topics in Japanese characters using connected sentences.
6. Understand the main idea in messages and presentations in Japanese on a variety of topics related to everyday life and personal interests and studies.
7. Sometimes understand the main idea of conversations that they overhear.
8. Understand the main idea of texts in Japanese characters related to everyday life and personal interests or studies.
9. Describe and make comparisons between cultures about beliefs, behaviors and cultural artifacts in Japan.
JAPN 2120. Japanese IV
3 Credits (3)
This course is designed for students who have completed 15 credit hours or the equivalent of Japanese study. This course continues to expand vocabulary, grammar and 271 Kanji to deal with not-complicated daily situation with ease. Also students acquire a competence for Japanese pragmatic usage. This course follows ACTFL language guidelines, integrating the five C's: communication, cultures, connections, comparisons and communities, to offer the student a well-rounded classroom experience. Students will attain ACTFL intermediate-mid level in four skills.
Prerequisite: grade of C or better in JPNS 2110 or consent of instructor.
Learning Outcomes
1. Participate with ease and confidence in conversations on familiar topics, such as relationships, part-time job, shopping with a variety of request, meeting socially superiors.
2. Usually describe people, places, and things, and talk about events and experiences in various time frames.
3. Handle social interactions in everyday situations, sometimes even when there is an unexpected complication.
4. Write about topics related to school, work, and community in a generally organized way in Japanese characters.
5. Write some simple paragraphs in Japanese characters about events and experiences in various time frames.
6. Easily understand the main idea in messages and presentations on a variety of topics related to everyday life and personal interests and studies.
7. Usually understand a few details of what they overhear in conversations, even when something unexpected is expressed.
8. Sometimes follow what they hear about events and experiences in various time frames.
9. Understand the main idea of texts in Japanese characters with topics related to everyday life, personal interests, and studies, as well as sometimes follow stories and descriptions about events and experiences in various time frames.
10. Describe and make comparisons between cultures about beliefs, behaviors and cultural artifact in Japan.
11. Start using languages in a culturally appropriate way based on the understanding of cultural similarities and differences, including the use of “honorific” and “humble” expression.

JOUR-JOURNALISM (JOUR)

JOUR 102. Grammar for Journalists
2 Credits (2)
Instruction of basic grammar, spelling and punctuation. Required for all journalism students with an ACT English score below 25, SAT Verbal below 570, or students who have not taken ACT/SAT tests. Restricted to Las Cruces campus only.

JOUR 105G. Media and Society
3 Credits (3)
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 Media Writing
3 Credits (2+2P)
Preparation of copy for broadcasting, print, advertising, and public relations. Introduction to Web applications. May be repeated up to 3 credits.
Prerequisite(s): JOUR 102 or ACT score of 25 and above or SAT score of 570 and above.

JOUR 201. Introduction to Multimedia
3 Credits (3)
Provide students with the basic skills to produce multimedia packages using text, photos, audio and video, as well as social media for professional purposes. Intensive hands-on class using editing software such as Adobe Premiere, Adobe Audition and Photoshop. May be repeated up to 3 credits.

JOUR 210. Newswriting & Reporting
3 Credits (2+2P)
Intensive laboratory practice in writing and field reporting news for print and Internet. May be repeated up to 3 credits. Restricted to Las Cruces campus only.
Prerequisite(s): JOUR 102 or ACT score of 25 and above or SAT score of 570 and above and JOUR 110.

L SC-LIBRARY SCIENCE (L SC)

L SC 100. Introduction to Libraries
3 Credits (3)
Overview of libraries, 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 Credits (3)
Overview of reference services. Introduction to, and evaluation of, basic types of information resources (both print and electronic) and their application in libraries.

L SC 111. Introduction to Information Literacy in an Electronic Environment
3 Credits (3)
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 Credits (3)
Introduction to descriptive cataloging. Restricted to: Dona Ana campus only.

L SC 130. Introduction to Technical Services in Libraries
3 Credits (3)
Introduction to technical services in libraries, including acquisitions, bindery, cataloging, gifts, and serials. Restricted to Dona Ana campus only.

L SC 140. Multimedia Materials and Presentations in Libraries
3 Credits (3)
Overview of media formats and equipment. Introduction to desktop publishing, presentations, and web-page creation applications in libraries. Restricted to: Community Colleges only.
L SC 160. Introduction to Public Services in Libraries
3 Credits (3)
Introduction to public services in libraries, including circulation, inter-library loan, reference, media services, special collections, and government documents. Restricted to Dona Ana campus only.

L SC 175. Civic Involvement in Library Science
1-3 Credits
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 200. Collection Management and Development in Libraries
3 Credits (3)
Principles of identifying, selecting, acquiring, managing, and evaluating resources for libraries. Restricted to Dona Ana campus only.

L SC 203. School Library Media Specialist
3 Credits (3)
Principles and practice of managing the school library media center, with an emphasis on its specific educational mission. Topics may include collection development, classes and lesson plans, public relations, administrative procedures, and use of technology. Restricted to Dona Ana campus only.

L SC 210. Technology Planning in Libraries
3 Credits (3)
Overview of computer applications in libraries. Topics may include automated systems and electronic resources, introduction to evaluation of technology, and writing a technology plan. Restricted to Dona Ana campus only.

L SC 221. Experiential Learning I
1-3 Credits
Student is employed (paid or non-paid) in an approved work site and evaluated by their supervisor. Each credit requires a specified number of hours of on-the-job work experience. Consent of instructor required. Graded: S/U. Restricted to Dona Ana campus only.

Prerequisite(s): Consent of instructor.

L SC 230. Issues and Ethics in Libraries
3 Credits (3)
Discussions of current and continuing challenges to effective library 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 240. Internet Resources and Research Strategies
3 Credits (3)
Introduction to retrieving and evaluating information found on the Internet and in selected Internet-accessible databases. Restricted to: Dona Ana campus only.

L SC 255. Special Topics
1-3 Credits
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 270. Library Science Capstone
3 Credits (3)
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 296. Multicultural Books for Children and Youth
3 Credits (3)
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 Colleges only.

L SC 298. Independent Study
1-3 Credits
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-LANGUAGE (LANG)

LANG 111. Beginning Language I
4 Credits (4)
Developing language skills through study abroad for languages not offered at NMSU main campus. Specific languages to be identified with course subtitles. Main campus only.

Prerequisite: Language placement exam or consent of the instructor.

LAWE-LAW ENFORCEMENT (LAWE)

LAWE 180. Public Safety First Line Supervisor
3-6 Credits (3-6)
This course is designed to enhance public safety personnel's human resource management and reduce organizational liability. Consent of Instructor required. Restricted to Community Colleges campuses

Learning Outcomes
1. Describe and explain police administration.
2. Explain and discuss the various leadership and management theories.
3. Define and discuss the various types of leadership skills and management styles.
4. Express and discuss the role of the police administrator and police administration.
5. Explain the leadership required of police administrators for an effective Law Enforcement administration.
6. Describe and interpret the “quality approach to managing community relations”
7. Explain and discuss the necessities of introducing organizational change.
8. Explain and discuss the planning, programming and budgetary process including: variables that affect the decision-making process.
9. Analyze and discuss the role of effective communications in a police organization including negotiations and conflict resolution.
10. 1 Explain and analyze the role of human resources in the organization including: their role in the recruitment and selection process; training; performance evaluations; promotions; and assessment centers.
11. 1) Discuss the role of police unions and explain their significance in labor relations.

LAWE 201. Introduction to Juvenile Delinquency
3 Credits (3)
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. Restricted to: Community Colleges Only.
LAWE 202. Police Patrol Procedures
3 Credits (3)
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. Restricted to: Community Colleges only.

LAWE 203. Introduction to Police Supervision
3 Credits (3)
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.) Restricted to: Community Colleges only.

LAWE 204. Introduction to Homeland Security
3 Credits (3)
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.] Restricted to: Community Colleges only.
Prerequisite(s): CJUS 1110G.

LAWE 205. Practical Field Investigations
4 Credits (3+3P)
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.] Restricted to Community Colleges campuses only.
Prerequisite(s): CJUS 1110G and CJUS 2140.

LAWE 206. Traffic Enforcement and Crash Investigations
3 Credits (3)
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 Credits (3)
An evaluation of police authority including responsibilities, civil liability, liability implications, legal obligations, legal restraints, laws of arrest, and search and seizure. Restricted to: Community Colleges only.

LAWE 221. Law Enforcement Internship
3 Credits (3)
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 233. Practical Approach to Terrorism
3 Credits (3)
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: FIRE 233

LAWE 255. Special Topics
1-3 Credits (1-3)
Introductory special topics of lower division level work that provides a variety of timely subjects and content material. Specific subjects to be announced in the Schedule of Classes. A passing grade of C- or better is required. May be repeated up to 6 credits. Consent of Instructor required. Restricted to Community Colleges campuses

Learning Outcomes
1. Obtaining foundational skills in the administration of justice by differentiating the role of police and corrections in contemporary America.
3. Ability to identify, analyze, and synthesize knowledge from discipline-specific courses in criminalistics, legal aspects, homeland security, terrorism, and patrol operations to effectively conduct a practical field investigation and traffic crash investigation.
4. Ability to develop a criminal justice ethical perspective consistent with 21st century America to, effectively and ethically, perform a criminal justice role in law enforcement or corrections.
5. Basic crime scene management, crime scene note-taking techniques, collection of evidence, and case presentations.
6. An application of knowledge, skills, and abilities, as an intern or integrated member of a criminal justice affiliated agency.
LIBR-LIBRARY SCIENCE

LIBR 1110. Introduction to Research
1 Credit (1)
The goal of this course is to provide students with techniques and tools to become better researchers. This course introduces students to the research process, and the organization, location, and evaluation of information.

Learning Outcomes
1. Develop a research plan based on an information need.
2. Find information efficiently and effectively using a variety of search tools.
3. Evaluate the reliability of an information resource.
4. Practice ethical behavior in using information.

LIBR 1111. Introduction to Information Literacy in an Electronic Environment
3 Credits (3)
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.

Learning Outcomes
1. Develop a discipline-specific research guide based on an established subject area. Select appropriate information sources and use them to find information efficiently. Evaluate information and its sources. Practice ethical behavior in using information.

LING-LINGUISTICS (LING)

LING 2110G. Introduction to the Study of Language and Linguistics
3 Credits (3)
This course presents an introduction to the study of language through the basic aspects of linguistic analysis: the sound system (phonetics and phonology), the structure of words and sentences (morphology and syntax), and the ways in which language is used to convey meaning (semantics and pragmatics). In addition, the course will investigate how language is acquired and stored in the brain, and how differences in speech styles and dialects reflect different social and cultural backgrounds of individual speakers.

Learning Outcomes
1. Understand the basic concepts and terminology associated with phonetics, phonology, morphology, syntax, semantics, and pragmatics.
2. Comprehend how language evolves over history and over an individual’s lifespan.
3. Describe some common, but mistaken, beliefs about language and to distinguish between descriptive and prescriptive approaches to language.
4. Describe the social, psychological, geographic and historical influences that lead to language dominance or language endangerment.
5. Be aware of the relations among various languages in the world, between dialects and slang, and between human and non-human languages.
6. Apply methods of linguistic analysis as introduced in the course.
7. Critically engage with the works of linguistic researchers.
8. Stimulate curiosity about language and what it reveals about the human mind.

M E-MECHANICAL ENGINEERING (M E)

M E 159. Graphical Communication and Design
2 Credits (1+3P)
Sketching and orthographic projection. Covers detail and assembly working drawings, dimensioning, tolerance specification, and design projects.

Prerequisite(s)/Corequisite(s): MATH 1250G.
M E 210. Electronics and System Engineering
3 Credits (2+3P)
Introduction to microcontrollers, measurement systems, motion actuators, sensors, electric circuits, and electronic devices and interfacing. Students required to work individually and in teams to design and test simple electromechanical systems. Restricted to Las Cruces campus only.
Prerequisite: MATH 1521G or MATH 1521H or ENGR 190.

Learning Outcomes
1. Ability to apply knowledge of mathematics, science, and engineering;
2. Ability to design and conduct experiments, as well as to analyze and interpret data;
3. Ability to design a system, component or process to meet desired needs within realistic constraints;
4. Ability to identify, formulate, and solve engineering problems;
5. Ability to use the techniques, skills and modern tools necessary for engineering practice.

M E 222. Introduction to Product Development
3 Credits (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. May be repeated up to 3 credits. Restricted to: exclude majors.
Prerequisite(s): M E 159 or E T 110.

M E 228. Engineering Analysis I
3 Credits (3)
Introduction to engineering analysis with emphasis on engineering applications. Topics include ordinary differential equations, linear algebra, and vector calculus with focus on analytical methods. Restricted to Las Cruces campus only.
Prerequisite(s): MATH 2530G.

M E 234. Mechanics-Dynamics
3 Credits (3)
Kinematics and dynamic behavior of solid bodies utilizing vector methods.
Prerequisite(s)/Corequisite(s): MATH 2530G. Prerequisite(s): C E 233.

M E 236. Engineering Mechanics I
3 Credits (3)
Force systems, resultants, equilibrium, distributed forces, area moments, friction, and kinematics of particles. May be repeated up to 3 credits.
Prerequisite(s)/Corequisite(s): PHYS 1310G. Prerequisite(s): MATH 1521G or MATH 1521H.

M E 237. Engineering Mechanics II
3 Credits (3)
Kinetics of particles, kinematics and kinetics rigid bodies, systems of particles, energy and momentum principles, and kinetics of rigid bodies in three dimensions. May be repeated up to 3 credits.
Prerequisite(s)/Corequisite(s): MATH 2530G. Prerequisite(s): M E 236.

M E 240. Thermodynamics
3 Credits (3)
First and second laws of thermodynamics, irreversibility and availability, applications to pure substances and ideal gases.
Prerequisite: PHYS 1310G.

M E 261. Mechanical Engineering Problem Solving
3 Credits (2+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: MATH 1521G or MATH 1521H or ENGR 190.

Learning Outcomes
1. Ability to apply knowledge of mathematics, science, and engineering;
2. Ability to identify, formulate, and solve engineering problems;
3. Ability to use the techniques, skills and modern tools necessary for engineering practice.

M SC-MILITARY SCIENCE (M SC)

M SC 110. Introduction to Military Science
2 Credits (2+1P)
Introduction to the Army, the Profession of Arms, and critical thinking. Students will examine the Army Profession and what it means to be a professional in the U.S. Army. The overall focus is on developing basic knowledge and comprehension of the Army Leadership Requirements Model while gaining a complete understanding of the Reserve Officers’ Training Corps (ROTC) program, its purpose in the Army, and its advantages for the student. Cadets also learn how resiliency and fitness supports their development as an Army leader. Includes a weekly lab facilitated by MSL III Cadets and supervised by Cadre. May be repeated up to 2 credits. Restricted to Las Cruces campus only.

M SC 110 L. Introduction to Military Science Lab
1 Credit (1P)
Planning, coordination, execution and evaluation of training and activities in a collaborative training environment with both basic and advanced course students from within the ROTC program. Students develop and refine leadership skills in positions of responsibility. Restricted to Las Cruces campus only.
Prerequisite(s): M SC-MILITARY SCIENCE (M SC) MSC 111.

M SC 111. Introduction to Leadership
2 Credits (2+1P)
Introduction to the personal challenges and competencies that are critical for effective leadership. Students learn how the personal development of life skills such as critical thinking, time management, goal setting, and communication contribute to effective leadership. Students learn the basics of the communications process and the importance for leaders to develop the essential skills to effectively communicate in the Army. Students will begin learning the basics of squad level tactics that will be reinforced during a weekly lab facilitated by MSL III Cadets and supervised by Cadre. May be repeated up to 2 credits. Restricted to Las Cruces campus only.

M SC 111 L. Introduction to Leadership Lab
1 Credit (1P)
Planning, coordination, execution and evaluation of training and activities in a collaborative training environment with both basic and advanced course students from within the ROTC program. Students develop and refine leadership skills in positions of responsibility. Restricted to Las Cruces campus only.
Prerequisite(s): M SC-MILITARY SCIENCE (M SC) MSC 111.
M SC 210. Self/Team Development
3 Credits (3+1P)
A focus on leadership and decision making. The course adds depth to the student’s understanding of the Adaptability Army Learning Area. Outcomes are demonstrated through Critical and Creative Thinking and the ability to apply Troop Leading Procedures (TLP) to apply Innovative Solutions to Problems. The Army Profession is also stressed through leadership forums and a leadership self-assessment. Students are then required to apply their knowledge outside the classroom in a hands-on performance-oriented environment during a weekly lab facilitated by MSL III Cadets and supervised by Cadre and three physical fitness sessions per week. Restricted to Las Cruces campus only.

Prerequisite(s): MSC 210.

M SC 211. Leadership in Action and Team Building
3 Credits (3+1P)
A focus on Army doctrine and team development. The course begins the journey to understand and demonstrate competencies as they relate to Army doctrine. Army Values, Teamwork, and Warrior Ethos and their relationship to the Law of Land Warfare and philosophy of military service are also stressed. The ability to lead and follow is also covered through Team Building exercises at squad level. Students are then required to apply their knowledge outside the classroom in a hands-on performance-oriented environment during a weekly lab facilitated by MSL III Cadets and supervised by cadre and three physical fitness sessions per week. Restricted to Las Cruces campus only.

Prerequisite(s): MSC 210.

M SC 221. Leadership in Action and Team Building Lab
1 Credit (1P)
Planning, coordination, execution, and evaluation of training and activities in a collaborative training environment with both basic and advanced course students from within the ROTC program. Students develop and refine leadership skills in positions of responsibility. Restricted to Las Cruces campus only.

Prerequisite(s): MSC 210.

M SC 225. Directed Studies
1-3 Credits
Individual directed studies under supervision of the Professor of Military Science. May be repeated up to 12 credits. Restricted to Las Cruces campus only.

Prerequisite(s): GPA 2.5 or better.

MAT-AUTOMATION & MANUFACTURING (MAT)

MAT 102. Print Reading for Industry
3 Credits (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 Crosslisted with: AERT 113. Restricted to: Community Colleges only.

MAT 105. Introduction to Manufacturing
3 Credits (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 1215 or higher. Restricted to: Community Colleges only. Crosslisted with: AERT 112

MAT 106. Applied Manufacturing Practices
3 Credits (2+2P)
Course will illustrate how various products are manufactured along with associated process. Mechanical behavior such as bending, cold worked, strained, work hardened, and 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. Crosslisted with: AERT 114. Restricted to: Community Colleges only.

MAT 110. Machine Operation and Safety
3 Credits (2+2P)
Introduction to the operation and safety aspects of various types of machinery and equipment, including both mechanical and electrical machinery, 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 130. Applied Industrial Electricity I
4 Credits (3+2P)
Electrical safety, AC and DC circuits, use and care of common measuring instrumentation, schematic and wiring diagrams, electromagnetism, National Electric Code branch circuits. Restricted to: Community Colleges only.

Prerequisite(s): MATH 1215 or ELT 120 or OETS 118.

MAT 135. Applied Industrial Electricity II
4 Credits (3+2P)
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. Restricted to: Community Colleges only.

Prerequisite(s): MAT 130.

MAT 145. Electromechanical Systems for Non-Majors
4 Credits (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 221. Cooperative Experience I
1-6 Credits
Supervised cooperative work program. Student is employed in an approved occupation and rated by employer and instructor. Student meets in a weekly class. Graded S/U.

Prerequisite: consent of instructor.

MAT 234. Industrial Electricity Maintenance
3 Credits (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. Restricted to: Community Colleges only.
**MAT 265. Special Topics**  
*1-6 Credits*  
Course subtitled in the Schedule of Classes. May be repeated for a maximum of 12 credits.  
**Prerequisite:** consent of instructor.

**MATH-MATHEMATICS (MATH)**

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.

Students without adequate placement to enroll in MATH 1134, MATH 1215 or MATH 1130G can gain admission to the course by earning a C- or better in CCDM 114 N at an NMSU Community College campus, or in A S 103.

Students wishing to enroll in MATH 1220G, MATH 1430G, MATH 1511G, MATH 1521G, or MATH 1350G must satisfy one of the following:

1. have passed the stated prerequisite course or an equivalent transfer course with a C- or better
2. have placed into the course with an adequate ACT Math score or through the Mathematics Placement Examination (MPE), the results of which will be made available to the student’s advisor. The MPE is given daily in Walden Hall when school is in session and during new student orientation programs.

**MATH 1130G. Survey of Mathematics**  
*3 Credits (3)*  
This course will develop students' ability to work with and interpret numerical data, to apply logical and symbolic analysis to a variety of problems, and/or to model phenomena with mathematical or logical reasoning. Topics include financial mathematics used in everyday life situations, statistics, and optional topics from a wide array of authentic contexts. Prerequisite(s): adequate scoring on the Mathematics Placement Exam, or any ACT/SAT and GPA combination that is considered equivalent, or a C- or better in CCDM 113 N or CCDM 114 N or A S 103 or higher

**Learning Outcomes**
1. Construct and analyze graphs and/or data sets: Gather and organize information; Understand the purpose and use of various graphical representations such as tables, line graphs, tilings, networks, bar graphs, etc.; Interpret results through graphs, lists, tables, sequences, etc.; Draw conclusions from data or various graphical representations.
2. Use and solve various kinds of equations: Understand the purpose of and use appropriate formulas within a mathematical application; Solve equations within a mathematical application; Check answers to problems and determine the reasonableness of results.
3. Understand and write mathematical explanations using appropriate definitions and symbols: Translate mathematical information into symbolic form; Define mathematical concepts in the student's own words; Use basic mathematical skills to solve problems.
4. Demonstrate problem solving skills within the context of mathematical applications; Show an understanding of a mathematical application both orally and in writing; Choose an effective strategy to solve a problem; Gather and organize relevant information for a given application.

**MATH 1134. Fundamentals of Elementary Mathematics I**  
*3 Credits (3)*  
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. Reasoning, communicating, and problem solving with numbers and operations. Applications to ratio, and connections with algebra. Taught primarily through student activities and investigations. Restricted to: EDUC,EPAR,ED,EED majors. Prerequisite(s): adequate scoring on the Mathematics Placement Exam, or any ACT/SAT and GPA combination that is considered equivalent, or a C- or better in MATH 1215 or higher

**Learning Outcomes**
1. As future elementary teachers you will be teaching mathematics to children.
2. In order to teach a subject well you need not only to know the material that you will teach, but you need to know more than what you will teach, and know it well in order to be able to answer questions, understand student reasoning, give alternate explanations when your students do not understand something, and be able to adjust to changes in the mathematical curriculum.
3. Furthermore, even if you hope to teach a given grade, you should be prepared to teach a variety of grades since what a person ends up teaching is often not what they planned to do.
4. We will explore ideas of arithmetic in a way to help you improve your mathematical ability, gain confidence in your ability, introduce to you different ideas and models, and to see a variety of mathematical activities that are appropriate for people of all ages.
5. Everything we study will be done with the aim of developing your ability to relate to the mathematics of elementary school and to help children develop mathematical understanding.

**MATH 1215. Intermediate Algebra**  
*3 Credits (3)*  
A study of linear and quadratic functions, and an introduction to polynomial, absolute value, rational, radical, exponential, and logarithmic functions. A development of strategies for solving single-variable equations and contextual problems. Prerequisite(s): adequate scoring on the Mathematics Placement Exam, or any ACT/SAT and GPA combination that is considered equivalent, or a C- or better in CCDM 113 N or CCDM 114 N or A S 103 or higher

**Learning Outcomes**
1. Students will build on their knowledge of linear and quadratic functions and will begin to build an understanding of absolute value, polynomial, rational, power, radical, exponential and logarithmic functions in the following contexts: Demonstrate appropriate use of basic function language and notation; Convert between equivalent forms of algebraic expressions; Solve single-variable equations of the types listed above; Interpret and communicate algebraic solutions graphically and numerically; Demonstrate contextual problem-solving skills that include setting up and solving problems, and interpreting solutions in context; Apply appropriate problem solving methods from among algebraic, graphical, and numerical.
MATH 1217. General Supplemental Instruction I
1 Credit (2P)
Learning Outcomes
1. Intermediate Algebra Workshop provides time for students to work on problems from Intermediate Algebra under the guidance of their Intermediate Algebra instructor

MATH 1220G. College Algebra
3 Credits (3)
The study of equations, functions and graphs, reviewing linear and quadratic functions, and concentrating on polynomial, rational, exponential and logarithmic functions. Emphasizes algebraic problem solving skills and graphical representation of functions. Prerequisite(s): adequate scoring on the Mathematics Placement Exam, or any ACT/SAT and GPA combination that is considered equivalent, or a C- or better in MATH 1220G or higher
Learning Outcomes
1. Use function notation; perform function arithmetic, including composition; find inverse functions.
2. Identify functions and their transformations given in algebraic, graphical, numerical, and verbal representations, and explain the connections between these representations.
3. Graph and interpret key feature of functions, e.g., intercepts, leading term, end behavior, asymptotes.
4. Solve equations algebraically to answer questions about graphs, and use graphs to estimate solutions to equations.
5. Solve contextual problems by identifying the appropriate type of function given the context and creating a formula based on the information given.
6. Communicate mathematical information using proper notation and verbal explanations.

MATH 1221. General Supplemental Instruction II
1 Credit (1+2P)
Collaborative workshop for students enrolled in College Algebra. Graded: S/U Grading (S/U, Audit). Corequisite(s): MATH 1220G.
Learning Outcomes
1. College Algebra Workshop provides time for students to work on problems from College Algebra under the guidance of their College Algebra instructor

MATH 1250G. Trigonometry & Pre-Calculus
4 Credits (3+2P)
Trigonometry & Pre-Calculus includes the study of functions in general with emphasis on the elementary functions: algebraic, exponential, logarithmic, trigonometric and inverse trigonometric functions. Topics include rates of change, limits, systems of equations, conic sections, sequences and series, trigonometric equations and identities, complex number, vectors, and applications. Prerequisite(s): adequate scoring on the Mathematics Placement Exam, or any ACT/SAT and GPA combination that is considered equivalent, or a C- or better in MATH 1220G or higher
Learning Outcomes
1. (Trigonometry) Students will be able to define and evaluate the trigonometric functions as functions of angle in both degree and radian measure using the definitions in terms of x, y, and r; as the ratio of sides of a right triangle; using the unit circle; using reference angles, commonly used (0°, 30°, 45°, 60°, 90°) angles and using a calculator.
2. (Trigonometry) Students will be able to solve right triangles. They will be able to draw a sketch in an applied problem when necessary.
3. (Trigonometry) Students will be able to solve non-right triangles using the law of sines and the law of cosines.
4. (Trigonometry) Students will be able to prove trigonometric identities and apply addition and subtraction, doubleangle, half-angle and power reduction formulas.
5. (Trigonometry) Students will be able to graph the six trigonometric functions, their transformations and their inverses.
6. (Trigonometry) Students will be able to use algebraic methods, including the use of identities and inverses, to solve trigonometric equations and demonstrate connections to graphical and numerical representations of the solutions.
7. (Trigonometry) Students will be able to add and subtract vectors in two dimensions. They will be able to use the dot product to project one vector onto another and to determine the angle between two vectors. They will be able to solve a variety of word problems using vectors.
8. (Trigonometry) Students will be able to work with polar coordinates; this includes graphing in polar coordinates and transforming an equation with polar coordinates into one with rectangular coordinates, and vice versa.
9. (Trigonometry) Students will be able to work with the trigonometric form of complex numbers, including using De Moivre's formula.
10. (Pre-Calculus) Functions: Reinforce recognizing a function from its graph and from its algebraic expression; Reinforce identification of a one-to-one function graphically and from its algebraic expression; Reinforce identification of inverse functions graphically and algebraically; Reinforce combining functions arithmetically and compositionally; Be able to calculate the average rate of change of a function using the difference quotient and depict it graphically; Be able to find a limiting value of a function and be able to identify and use the notation that describes this.
11. (Pre-Calculus) Graphing: Reinforce using key characteristics of functions to graph them; Be able to graph conic sections from their key characteristics such as foci, eccentricity and asymptotes; Be able to identify all functions mentioned from their graphs, describing their key aspects.
12. (Pre-Calculus) Solving: Exponential/Logarithmic equations using the rules of exponents and logarithms; Systems of linear equations by elimination; Non-linear systems algebraically and graphically.
13. (Pre-Calculus) Applications: Modeling with functions with an emphasis on exponential and logarithmic functions, growth and decay.
14. (Pre-Calculus) Sequences and series: Understand the concept and notation of a sequence; Understand the concept and notation of a...
MATH 1350G. Introduction to Statistics
3 Credits (3)
This course discusses the fundamentals of descriptive and inferential statistics. Students will gain introductions to topics such as descriptive statistics, probability and basic probability models used in statistics, sampling and statistical inference, and techniques for the visual presentation of numerical data. These concepts will be illustrated by examples from a variety of fields. Prerequisite(s): adequate scoring on the Mathematics Placement Exam, or any ACT/SAT and GPA combination that is considered equivalent, or a C- or better in MATH 1215 or higher
Learning Outcomes
1. Explain the general concepts of statistics: Explain and evaluate statistics used in the real world (from a news article, research project, etc.); Use statistical vocabulary appropriately; Distinguish between descriptive and inferential statistics; Distinguish between qualitative and quantitative data; Distinguish between populations and samples, and parameters and statistics; Give examples of independent and dependent variables.
2. Presentation and description of data: Present data graphically using histograms, frequency curves and other statistical graphs; Interpret graphs of data, including histograms and shapes of distributions.
3. Summarize data using measures of central tendency and variation: Calculate and interpret the mean, median, and mode to describe data; Calculate and interpret range, variance, and standard deviation to describe data.
4. Present the concepts of probability: Interpret basic probabilities; Calculate probabilities using compound probability rules and the binomial distribution; Calculate probabilities using the standard normal distribution and relate them to areas under the curve; Determine if the binomial distribution can be approximated with the normal distribution; Describe the relationship between the sampling distribution and the population distribution; Use the central limit theorem to approximate the probability distribution and calculate probabilities.
5. Compute point and interval estimates: Determine the confidence interval for a parameter; Interpret the confidence level and margin of error; Determine whether a statistical technique is appropriate under stated conditions.
6. Perform hypothesis tests: Determine whether a statistical test is appropriate under stated conditions; Identify null and alternative hypothesis; Perform and interpret statistical tests (e.g. z-test, t-test, one-tailed and two-tailed, one-sample, two-sample) and determine whether data is statistically significant; State the conclusion of a hypothesis test; Interpret a p-value as compared to a significance level; Explain why a test can lead us to reject a null hypothesis, not accept one; Distinguish between Type I and Type II errors.
7. Analyze data using regression and correlation: Explain the difference between correlation and causation; Construct and interpret scatter plots; Calculate and interpret the linear correlation coefficient; Determine and use the equation of a least-squares regression line between two variables to make predictions; Interpret the meaning of the coefficient of determination.
8. Optional topics: Inter-quartile range, box-plots, stem-and-leaf plots; Combinations and permutations; The Poisson distribution; Statistical power; Chi-square; Analysis of variance

MATH 1430G. Applications of Calculus I
3 Credits (2+2P)
An algebraic and graphical study of derivatives and integrals, with an emphasis on applications to business, social science, economics and the sciences. Prerequisites: adequate scoring on the Mathematics Placement Exam, or any ACT/SAT and GPA combination that is considered equivalent, or a C- or better in MATH 1220G or higher
Learning Outcomes
1. Find limits algebraically and graphically, and use limits to analyze continuity.
2. Find the derivative of a function by applying appropriate techniques (limit of the difference quotient, general derivative rules, product rule, quotient rule, chain rule, and higher order derivatives).
3. Perform implicit differentiation. Use implicit differentiation to solve related rate application problems.
4. Use the derivative to describe the rate of change and slope of a curve in general and at particular points. Compare and contrast average rates of change to instantaneous rates of change.
5. Find the maxima, minima, points of inflections, and determine concavity of a function by applying the first and second derivatives. Use these results to sketch graphs of functions and to solve optimization problems in context.
6. Find the antiderivative and indefinite integral functions to include integration by substitution. Apply the Fundamental Theorem of Calculus in computing definite integrals of functions.
7. Approximate the area under the curve using Riemann sums.
8. Use the integral to determine the area under a curve and to find the accumulated value of a function in context.
9. Solve contextual problems by identifying the appropriate type of function given the context, creating a formula based on the information given, applying knowledge of algebra and calculus, and interpreting the results in context.
10. Communicate mathematical information using proper notation and verbal explanations.
MATH 1435. Applications of Calculus I
3 Credits (3)
Intuitive differential calculus with applications to engineering.
Prerequisite(s): C- or better in MATH 1250G.
Learning Outcomes
1. Find limits algebraically and graphically, and use limits to analyze continuity.
2. Find the derivative of a function by applying appropriate techniques (limit of the difference quotient, general derivative rules, product rule, quotient rule, chain rule, and higher order derivatives).
3. Learn derivative rules for polynomial, exponential, logarithmic, trigonometric and inverse trigonometric functions.
4. Perform implicit differentiation. Use implicit differentiation to solve related rate application problems.
5. Find the maxima, minima, points of inflections, and determine concavity of a function by applying the first and second derivatives. Use these results to sketch graphs of functions and to solve optimization problems in context.
6. Find partial derivatives and find maxima, minima in three dimensions.
7. Find the linear approximation of a function.
8. Find Maclaurin and Taylor series.
9. Find limits via L'Hospital's rule.
10. Communicate mathematical information using proper notation and verbal explanations.

MATH 1440. Applications of Calculus II
3 Credits (3)
Topics in this second course of Applications of Calculus include functions of several variables, techniques of integration, an introduction to basic differential equations, and other applications.
Prerequisites: C or better in MATH 1435 or in MATH 1521G, or in MATH 1521H.
Learning Outcomes
1. Find definite and indefinite integrals using integration by parts, integral tables, and numerical integration.
2. Analyze multivariable functions using partial derivatives and double integrals, and apply these techniques to applications such as optimization, least squares, and volumes.
4. Apply differentiation and integration to other areas, for example to Taylor polynomials and Taylor series, probability, trigonometric functions, etc.

MATH 1511G. Calculus and Analytic Geometry I
4 Credits (4)
Limits and continuity, theory and computation of derivatives, applications of derivatives, extreme values, critical points, derivative tests, L'Hopital's Rule. Prerequisite(s): adequate scoring on the Mathematics Placement Exam, or any ACT/SAT and GPA combination that is considered equivalent, or a C- or better in MATH 1250G or higher
Learning Outcomes
1. The goals are to present the concepts of calculus, stressing techniques, applications, and problem solving, and emphasizing numerical aspects such as approximations and order of magnitude.
2. Overall, the goals are to illustrate the power of calculus as a tool for modeling situations arising in physics, science, engineering and other fields.
3. In fulfillment of these goals, this and later courses will stress topics such as polynomial approximation, setting up integrals, as well as the use of appropriate technology

MATH 1521G. Calculus and Analytic Geometry II
4 Credits (4)
Riemann sums, the definite integral, antiderivatives, fundamental theorems, techniques of integration, applications of integrals, improper integrals, Taylor polynomials, sequences and series, power series and Taylor series.
Prerequisite(s): C or better in MATH 1511G.
Learning Outcomes
1. Recognize the interplay between Riemann sums and definite integrals
2. Use the Fundamental Theorem of Calculus to compute definite and indefinite integrals
3. Demonstrate an understand of the relationship between the derivative and the definite integral
4. Evaluate integrals numerically using standard rules (midpoint, trapezoid, Simpson's)
5. Evaluate integrals analytically using standard methods (substitution, integration by parts, trigonometric substitution and identities, inverse functions and partial fractions
6. Use integration to solve problems in geometry, physics, science, engineering and other fields
7. Use appropriate methods such as L'Hopital's Rule to evaluate improper integrals
8. Approximate functions using Taylor polynomials
9. Apply standard tests to determine convergence or divergence of sequences and series
10. Find a power series representation for a function and determine where it converges
11. Identify and evaluate first order differential equations
MATH 1521H. Calculus and Analytic Geometry II Honors
4 Credits (3+1P)
A more advanced treatment of the material of MATH 1521G with additional topics. Consent of instructor required. Restricted to Las Cruces campus only. Consent of Department.
Learning Outcomes
1. Recognize the interplay between Riemann sums and definite integrals
2. Use the Fundamental Theorem of Calculus to compute definite and indefinite integrals
3. Demonstrate an understand of the relationship between the derivative and the definite integral
4. Evaluate integrals numerically using standard rules (midpoint, trapezoid, Simpson’s)
5. Evaluate integrals analytically using standard methods (substitution, integration by parts, trigonometric substitution and identities, inverse functions and partial fractions
6. Use integration to solve problems in geometry, physics, science, engineering and other fields
7. Use appropriate methods such as L’Hospital’s Rule to evaluate improper integrals
8. Approximate functions using Taylor polynomials
9. Apply standard tests to determine convergence or divergence of sequences and series
10. Find a power series representation for a function and determine where it converges
11. Identify and evaluate first order differential equations

MATH 1531. Introduction to Higher Mathematics
3 Credits (3)
Logic; sets, relations, and functions; introduction to mathematical proofs.
Prerequisite(s): C- or better in MATH 1521G or MATH 1521H.
Learning Outcomes
1. The primary objective of this course is to serve as a bridge between the calculus courses you have taken, where the focus is on computations and solving problems, to more abstract mathematics courses.
2. In particular, we will discuss logical reasoning, definitions, proofs, and certain basic building blocks such as sets, functions, and relations.
3. By the end of the course, you should be able to understand and construct well-written proofs of basic mathematical arguments involving simple properties of the real numbers, integers, sets, functions, and relations using universal and existential quantifiers, absolute values and inequalities, modular arithmetic, and proof by induction.

MATH 2134G. Fundamentals of Elementary Math II
3 Credits (3)
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 1134.
Learning Outcomes
1. The primary objectives are mathematical: to understand some of the basic concepts of geometry, and measurement with an appropriate level of rigor; to appreciate the historical, cultural and educational contributions and potential applications in real life situations; and to gain problem solving skills using these concepts.
2. The secondary goal is to appreciate the importance of this material in the elementary school curriculum.

MATH 2234. Fundamentals of Elementary Mathematics III
3 Credits (3)
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 2134G.
Learning Outcomes
1. In order to teach a subject well you need not only to know the material that you will teach, but you need to know more than what you will teach, and know it well, in order to be able to answer questions, give alternate explanations when your students do not understand something, and be able to adjust to changes in the mathematical curriculum.
2. Furthermore, even if you hope to teach a certain grade, you should be prepared to teach anything between kindergarten and 8th grade.
3. You also need to be aware of where a student is coming from in order to make adjustments in their curriculum.
4. A strong elementary school teacher must understand where his/her students are headed in order to most effectively direct them there.
5. This is especially true in mathematics, where students continue to build on the concepts they learn each year.

MATH 1996. Topics in Mathematics
1-3 Credits
Topics to be announced in the Schedule of Classes. Maximum of 3 credits per semester. Total credit not to exceed 6 credits. Community Colleges only.
Prerequisite: consent of instructor.
Learning Outcomes
1. Varies
MATH 2350G. Statistical Methods
3 Credits (3)
Exploratory data analysis. Introduction to probability, random variables and probability distributions. Concepts of Central Limit Theorem and Sampling Distributions such as sample mean and sample proportion. Estimation and hypothesis testing single population parameter for means and proportions and difference of two population parameters for means and proportions. Analysis categorical data for goodness of fit. Fitting simple linear regression model and inference for regression parameters. Analysis of variance for several population means. Techniques in data analysis using statistical packages. Prerequisite(s): adequate scoring on the Mathematics Placement Exam, or any ACT/SAT and GPA combination that is considered equivalent, or a C- or better in MATH 1215 or higher.

Learning Outcomes
1. Summarize Data through graphs and Descriptive statistics: Define qualitative and quantitative data; Provide examples of a population, a sample, independent and dependent variables, parameters and statistics; Construct and interpret histograms, stem plots, bar charts, and boxplot; Summarize distributions with numerical measures such as mean, median, standard deviation, percentiles, interquartile range.
2. Present the concepts of probability: Explain related to probability axioms (e.g. mutually exclusive events and independent events); Apply applications of probability rules; Apply Conditional probability and Bayes Rule.
3. Distinguish between discrete and continuous random variables: Calculate probabilities using Binomial and Poisson distributions; Calculate probabilities using the standard normal distribution by finding the area underneath the curve.
4. Explain the Central Limit Theorem: Introduce the concept of a sampling distribution; Discuss the distribution of the sample mean and sample proportion under repeated sampling; Generate and interpret a sampling distribution using repeated sampling; Determine if the Binomial and Poisson distribution can be approximated with the normal distribution.
5. Estimate a population parameter: Determine confidence interval for population mean, proportion, difference of means, and difference of proportions; Interpret the confidence interval and margin of error; Explain the dependence of margin of error on sample size and confidence level.
6. Perform hypothesis tests for population parameters (population mean, proportion, difference of means, and difference of proportions); Describe the logic and framework of the inference of hypothesis testing; Make a decision using a p-value and draw an appropriate conclusion; Distinguish between Type I and Type II errors; Explain power of the test.
7. Perform Hypothesis Tests for Categorical data: Determine and analyze Chi-square test for Independence; Determine and analyze Chi-square test for Goodness of fit.
8. Analyze data using regression and correlation: Construct scatterplots and analyze the scatter plots; Calculate the linear correlation coefficient and determine whether a linear relationship exists between two variables; Fit the least-squares regression line between two variables; Predict the response variable from the regression line; Apply statistical inference to regression parameters.
9. Perform analysis of variance: State hypotheses for the test of several population means; Construct the ANOVA Table; Explain the significance of multiple comparisons.
10. Demonstrate the appropriate use of technology (e.g., Excel, an appropriate graphing calculator or other software (Minitab, SAS)

MATH 2415. Introduction to Linear Algebra
3 Credits (3)
Systems of equations, matrices, vector spaces and linear transformations. Applications to computer science. Prerequisite(s): Grade of C- or better in MATH 1521G or MATH 1521H.

Learning Outcomes
1. Use row reduction and echelon forms of a matrix to solve linear systems of equations.
2. Use matrix operations, inverse matrices, and matrix factorizations to solve matrix equations.
3. Study the properties of vector spaces and subspaces (e.g., the null and column spaces of a matrix); linear transformations, isomorphisms and kernels; linear independence, bases, and dimension.
4. Apply appropriate matrix manipulations to perform a change of basis.
5. Understand determinants and their properties.
6. Find eigenvalues and eigenvectors and use them to diagonalize matrices.
7. Understand inner product spaces and apply them to real-world problems.

MATH 2530G. Calculus III
3 Credits (3)
The purpose of this course, which is a continuation of Calculus II, is to study the methods of calculus in more detail. The course will cover the material in the textbook from Chapters 10-14.Vectors in the plane and 3-space, vector calculus in two-dimensions, partial differentiation, multiple integration, topics in vector calculus, and complex numbers and functions. Prerequisite(s): Grade of C- or better in MATH 1521G or MATH 1521H.

Learning Outcomes
1. Perform the algebra operations on vectors in the plane.
2. Describe lines, planes, and surfaces in 3-space.
3. Compute the tangent and normal vectors to space curves.
4. Compute tangential and normal components of acceleration.
5. Sketch functions of several variables.
6. Compute the tangent plane to a surface.
7. Describe and use the chain rule.
8. Compute extreme values of functions of several variables.
9. Compute multiple integrals.
10. Compute surface area, mass, and moments.
11. Compute line integrals and test for independence of path.
12. State and use Green’s, Stokes’ and Divergence Theorem.

MATH 2992. Directed Study
1-3 Credits
May be repeated for a maximum of 6 credits. Graded S/U. Prerequisite: consent of the instructor.

Learning Outcomes
1. Varies
**MGMT-MANAGEMENT**

**MGMT 2110. Principles of Management**
3 Credits (3)
An introduction to the basic theory of management including the functions of planning, organizing, staffing, leading, and controlling; while considering management's ethical and social responsibilities.

**Learning Outcomes**
1. Explain the major functions of management including planning, organizing, communications, controlling, motivating, leading, and staffing.
2. Recognize major developments in the history of management thought.
3. Describe the basic managerial processes including decision-making and other key skills necessary for managers to perform their roles.
4. Identify an organization's stakeholders and the importance of social and ethical responsibility of managers.
5. Explain the formulation and implementation of strategic planning, including the relationship between goals, plans, vision statements, and mission statements.
6. Describe the strategies managers use to help organizations adapt to changing internal and external environments.
7. Explain organizational change, forces for change, sources of resistance to change, and the techniques managers can use to implement and facilitate change.

**MKTG-MARKETING (MKTG)**

**MKTG 1220. Small Business Marketing**
3 Credits (3)
An overview of public relations principles, practices and purposes as applied to small business. Topics include basics of news release writing, media awareness, development and maintenance of a positive public image, branding, ethical marketing, and the relationships of public relations with advertising and marketing. Methods and practices used in small business are explored.

**Prerequisite:** MKTG 2110.

**Learning Outcomes**
1. Explain the importance of creating and sustaining a positive public awareness and image. Identify public relations practices as they relate to the management and marketing processes. Define branding and discuss its importance for small business. Describe the value of business event management and promotion for small business. Discuss how media relations, public relations, advertising and marketing efforts are interrelated and the importance of each.

**MKTG 180. Level 1, PGA's PGM Education Program (Part 1)**
3 Credits (3)
Level 1 Part 1 of the PGA PGM Education Program. Introduction to the Policies and Procedures of the PGA Golf Mgt. Program and the PGA of America. Students will complete the PGA Qualifying Level 1A (Tournament Ops A, Rules of Golf B, and Career Enhancement B), and the corresponding Work Experience Activities. Additional course fee required. Consent of Instructor required. Restricted to: MKTG majors.

**MKTG 181. Level 1, PGA's PGM Education Program (Part 2)**
3 Credits (3)
Level 1 Part 2 of the PGA PGM Education Program. This class will focus on Teaching and Coaching 1, the corresponding PGA Work Experience Activities, and PGA Teaching Seminars. Additional course fee required. Consent of Instructor required. Restricted to: MKTG majors.

**Learning Outcomes**
1. Know how students learn and process golf knowledge and skills, and identify the implications for teaching Know how to define and distinguish between learning and performance Understand how juniors learn golf knowledge and skills, and identify implications for teaching Conduct a physical evaluation of a junior golfer and create developmentally appropriate exercise and training programs Establish student/teacher relationships that promote greater student learning and enjoyment Develop a communication style that fits the student and increases instructional effectiveness Analyze student's instructional needs and set clear, purposeful learning and practice goals Know the format for an effective golf lesson Deliver effective explanations and demonstrations during a golf lesson Engage in self-assessment of teaching skills and competencies Recognize the appropriate clubhead path and clubface position information to improve a golfer's performance Conduct appropriate assessments to determine the short game skill level of the golfer Gain understanding of the short game elements to help lower scores and improve the player Define club performance terms and specifications, including lie angle and clubface angle or position, and describe their effect on ball flight and player performance Define what information is required to properly assess a player's golf equipment Define club performance terms and specifications, including lie angle and clubface angle or position, and describe their effect on ball flight and player performance: Observe a player's swinging motion, ball flight, and equipment to evaluate the effectiveness of their equipment.
MKTG 2110. Principles of Marketing
3 Credits (3)
Survey of modern marketing concepts and practices focusing on the marketing mix: product, pricing, promotion, and distribution strategies. Topics include: the marketing environment, consumer behavior, marketing research, target marketing, and the ethical and social responsibilities of marketers. May be repeated up to 3 credits.
Prerequisite(s): BUSA 1110.
Learning Outcomes
1. Describe the professional, ethical, and social responsibilities of marketers.
2. Explain the role of the product in the marketing mix, including the product life cycle, the relevance of product innovation, and product classifications.
3. Illustrate the role of promotion in the marketing mix, including the communication process and the promotional mix.
4. Explain the role of price in the marketing mix, including pricing objectives, pricing policies, and pricing methods.
5. Describe the operation of channels of distribution and supply chains, including functions of intermediaries and degrees of coverage.
6. Define the concepts of target markets and market segmentation with respect to elements of the marketing mix.
7. Explain the importance of market research and information systems in supporting marketing decision making.
8. Describe the dynamic environment(s) in which marketing decisions must be made.

MKTG 2220. Digital Marketing
3 Credits (3)
This course focuses on planning to create and market a website. Internal marketing topics such as registering with search engines, increasing traffic, segmenting and targeting markets, establishing an online presence, developing a marketing plan and reshaping business for the Web market are covered.
Prerequisite: MKTG 2110.
Learning Outcomes
1. Describe how search engines work. (Use knowledge to make recommendations to a website on how it can improve its organic search rankings - perform search engine optimization). Describe the various methods of online display advertising. Determine the appropriate key performance indicators (KPIs) for any type of website. Describe and implement best practices in marketing to a database of current and potential customers via email. Utilize knowledge of social media tactics to design an effective social media campaign. Implement online reputation management tactics to improve the online reputation of a brand. Develop and present a digital marketing plan for a small, local business.

MKTG 280. Level 1, PGA's PGM Education Program (Part 3)
3 Credits (3)
Level 1 Part 3 of the PGA PGM Education Program. This class will focus on Teaching and Coaching 2, Teaching and Coaching Seminars, and the corresponding PGA Work Experience Activities. Additional course fee required. Consent of Instructor required. Restricted to: MKTG majors.

MKTG 281. Level 2, PGA’s PGM Education Program (Part 1)
3 Credits (3)
Level 2 Part 1 of the PGA PGM Education Program. This class will focus on Teaching and Coaching 2, Teaching and Coaching Seminars, and the corresponding PGA Work Experience Activities. Additional course fee required. Consent of Instructor required. Restricted to: MKTG majors.
Learning Outcomes
1. Explain how students learn golf knowledge and skills, and identify the implications for teaching Explain how students process information when learning golf skills Identify and explain the principles of effective practice Explain how juniors learn golf knowledge and skills, and identify the implications for teaching Structure an effective golf lesson Analyze student's instructional needs and set clear, purposeful learning and practice goals Deliver effective explanations and demonstrations during a golf lesson Engage in self-assessment of teaching skills and competencies Recognize and apply the appropriate clubhead path and clubface position information to improve a golfer’s performance 1Conduct appropriate assessments to determine the skill level of the golfer 1Demonstrate basic knowledge of anatomy and physiology, and conduct a physical observation to identify movement capabilities and limitations that may affect a golfer’s performance 1Define club performance terms and specifications, and describe their effect on ball flight and player performance

MUSC 1110G. Music Appreciation: Jazz
3 Credits (3)
This course explores the ideas of music in society and its cultural relevance and is designed to increase the students’ appreciation of music as well as to enhance their listening skills. Students are introduced to various periods, styles, and composers of music and become acquainted with knowledge and appreciation of Jazz from various cultures and times.
Learning Outcomes
1. Develop a vocabulary of musical terms, and be able to describe music using those terms
2. Demonstrate knowledge of composers, their music and their relationship to historical periods
3. Recognize how music played and plays a political, social, and cultural function
4. Identify well-known pieces and the historical and social context in which they were composed
5. Demonstrate basic understanding of music notation and musical communication
MUSC 1130G. Music Appreciation: Western Music
3 Credits (3)
This course explores the ideas of music in society and its cultural relevance and is designed to increase the students’ appreciation of music as well as to enhance their listening skills. Students are introduced to various periods, styles, and composers of music and become acquainted with knowledge and appreciation of Western music from various cultures and times.

Learning Outcomes
1. Develop a vocabulary of musical terms, and be able to describe music using those terms
2. Demonstrate knowledge of composers, their music and their relationship to historical periods
3. Recognize how music played and plays a political, social, and cultural function
4. Identify well-known pieces and the historical and social context in which they were composed
5. Demonstrate basic understanding of music notation and musical communication

MUSC 1210. Fundamentals of Music for Non-majors
3 Credits (3)
A beginning course in the fundamentals of music, this course includes notation, scales, key signatures and intervals. Aural comprehension is introduced through singing intervals, scales and triads and dictating simple rhythmic and melodic patterns and students explore the basic components of music. Traditional Grading with RR.

Learning Outcomes
1. Demonstrate and apply standard notation of pitch, rhythm, scales, intervals, key signatures, triads, and simple melodic and harmonic composition
2. Develop and improve basic aural skills
3. Read musical notation
4. Improve and expand understanding of fundamental musical techniques and concepts

MUSC 1310. Recital Attendance
0.5 Credits (.5+1P)
This course is for music students to attend and participate in a good number of convocation, concert, and recital performances, creating a wider appreciation for the performing arts. May be repeated up to 4 credits. Restricted to: Music and Music Education majors. S/U Grading with RR. Restricted to Las Cruces campus only.

Learning Outcomes
1. Encourage student observation of serious music
2. Provide opportunities for public performances
3. To create a greater sense of community within the student body
4. To develop the ability to accurately hear, identify, sing and notate musical elements including rhythm, melody, intervals and harmony

MUSC 1310G. Recital Attendance: Western Music
0.5 Credits (.5+1P)
This course is for music students to attend and participate in a good number of convocation, concert, and recital performances, creating a wider appreciation for the performing arts. May be repeated up to 4 credits. Restricted to: Music and Music Education majors. S/U Grading with RR. Restricted to: Music and Music Education majors. Traditional Grading with RR.

Learning Outcomes
1. Pass the Theory Placement exam or making a C or better in MUSC 1450.
2. Develop and improve basic aural skills
3. Read musical notation
4. Improve and expand understanding of fundamental musical techniques and concepts

MUSC 1410. Introduction to Music Education
2 Credits (2)
This course is an overview of teaching in the music classroom through readings and observations. Students will be introduced to the skills needed to become a reflective educator, develop observation techniques, and demonstrate knowledge of the current state of the profession. Restricted to Las Cruces campus only.

Learning Outcomes
1. Make observations and analyze the current state of musical education in public schools
2. Describe characteristics of good teaching in music
3. Articulate a personal philosophy of music education
4. Reflect on personal strengths and weaknesses as a teacher of music

MUSC 1440. Class Voice I
1 Credit (1)
Group instruction in voice and vocal pedagogy for instrumental Music Education majors, offering basic principles of healthy vocal production with particular attention to diction, development of vocal range, and the ability to impart that knowledge to elementary, junior and/or high school age students. Restricted to: Music Education majors. Traditional Grading with RR. Restricted to Las Cruces campus only.

Learning Outcomes
1. Provide the basic understanding of healthy vocal production. Including, but is not limited to, the following topics: Expanding vocal range; Learning how to practice and learn songs effectively and efficiently; Provide basic understanding of vocal pedagogy; Introduction to diction
2. Aims to equip students with the ability to impart that knowledge to elementary, junior and/or high school age students.

MUSC 1450. Ear Training I
1 Credit (1)
To develop the ability to accurately hear, identify, and notate musical elements including rhythm, melody, intervals and harmony. Traditional Grading with RR. Restricted to Las Cruces campus only.

Prerequisite(s): Passing the Theory Placement exam or making a C or better in MUSC 1210.

Learning Outcomes
1. Counting rhythms at sight using the Eastman Counting System
2. Singing melodies at sight using solfege syllables
3. Writing out rhythmic patterns
4. Writing out melodic patterns
5. Identifying and singing intervals
6. Identifying and singing chord / triad qualities

MUSC 1451. Ear Training II
1 Credit (1)
To develop the ability to accurately hear, identify, and notate musical elements including rhythm, melody, intervals and harmony. Restricted to Las Cruces campus only.

Prerequisite(s): Grade of C- or better in MUSC 1450.

Learning Outcomes
1. Counting rhythms at sight using the Eastman Counting System
2. Singing melodies at sight using solfege syllables
3. Writing out rhythmic patterns
4. Writing out melodic patterns
5. Identifying and singing intervals
6. Identifying and singing chord / triad qualities
MUSC 1460. Music Theory I
3 Credits (3)
Introduction to vocabulary and syntax of 4-voice 18th c. chorale music through study and harmonic analysis.
Prerequisite(s): Passing the Theory Placement exam or making a C or better in MUSC 1210.
Learning Outcomes
1. To learn the vocabulary and syntax of 4-voice 18th c. chorale music through study and harmonic analysis

MUSC 1461. Music Theory II
3 Credits (3)
Expansion of vocabulary and syntax of 4-voice 18th c. chorale music through study, harmonic analysis, and part writing.
Prerequisite(s): Grade of C or better in MUSC 1460.
Learning Outcomes
1. To expand and apply the vocabulary and syntax of 4-voice, 18th c. chorale music through study, harmonic analysis, and part writing.

MUSC 1470. Functional Piano I
2 Credits (2)
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.
Learning Outcomes
1. 5 finger hand position in all keys
2. I-IV-I-V7-I cadences in all keys
3. One octave scales with hands together in C, G, D and F (major and minor)
4. Root position cross-over triads, solid and broken (major and minor)
5. Simple sight reading, harmonizing and transposition
6. Prepared pieces from the textbook
7. Simple improvisation
8. Play 2 simple vocal exercises
9. Identify intervals, key signatures and chords
10. Correct posture and hand position
11. Musical issues such as phrasing, slurs and dynamics
12. Good practice habits and techniques

MUSC 1471. Functional Piano II
2 Credits (2)
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.
Prerequisite: MUSC 1470 or consent of instructor.
Learning Outcomes
1. Two octave scales with hands separate in C, G, D, A, E, B and F (major and minor)
2. I-IV-I-V7-I cadences in above mentioned keys in root position and 1st inversion
3. Simple sight reading, harmonization and transposition
4. Prepared pieces from the book
5. Simple improvisation
6. Identify intervals, key signatures and chords
7. Correct posture and hand position
8. Musical issues such as phrasing, slurs and dynamics
9. Good practice habits and techniques

MUSC 1472. Functional Piano III
2 Credits (2)
For music majors preparing for the Piano Proficiency Examination. May be taken for unlimited credit. Restricted to music majors. No S/U option.
Prerequisite: MUSC 1471 or consent of instructor.
Learning Outcomes
1. Keys learned in previous semesters, adding F# and C# (D flat)
2. Secondary dominant chords added to cadence patterns
3. Two-octave, root position arpeggios, major and minor
4. Intro to chord charts, harmonization
5. More difficult sight-reading and transpositions
6. More difficult prepared pieces
7. Accompany a piece for any instrument on the Mid-Term Recital (required)

1-2 Credits
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.
Learning Outcomes
1. Varies

MUSC 2110. Chamber Ensemble
1 Credit (1)
This course is an exploration of chamber ensembles, allowing students to develop their abilities with their instruments in a group setting. Students will gain a broader understanding of chamber ensemble through study of musical history, as well as various practice exercises and performances. May be repeated up to 16 credits. Restricted to Las Cruces campus only.
Prerequisite(s): by audition only.
Learning Outcomes
1. Improve performance skills
2. Develop and improve performance skills in a group setting
3. Develop understanding and interpretation within the context of music history
4. Refine and improve technical ability
5. Demonstrate proper technique and usage

MUSC 2120. Major Ensemble
1 Credit (1)
This course is an exploration of major ensembles, allowing students to develop their abilities with their instruments in a group setting. Students will gain a broader understanding of major ensemble through study of musical history, as well as various practice exercises and performances. May be repeated up to 10 credits. Restricted to Las Cruces campus only.
Prerequisite(s): by audition only.
Learning Outcomes
1. Improve performance skills
2. Develop and improve performance skills in a group setting
3. Develop understanding and interpretation within the context of music history
4. Refine and improve technical ability
5. Demonstrate proper technique and usage
MUSC 2130. Jazz Ensemble
1 Credit (1)
This course is an exploration of jazz ensembles, allowing students to develop their abilities with their instruments in a group setting. Students will gain a broader understanding of jazz ensemble through study of musical history, as well as various practice exercises and performances. May be repeated up to 10 credits. Restricted to Las Cruces campus only.
Prerequisite(s): By audition only.
Learning Outcomes
1. Improve performance skills
2. Develop and improve performance skills in a group setting
3. Develop understanding and interpretation within the context of music history
4. Refine and improve technical ability
5. Demonstrate proper technique and usage
6. Develop and improve improvisation skills

MUSC 2132. Percussion Ensemble
1 Credit (1)
Study and performance of contemporary percussion ensemble literature. May be repeated up to 5 credits. Restricted to Las Cruces campus only.
Prerequisite(s): By audition only.
Learning Outcomes
1. Improve performance skills
2. Develop and improve performance skills in a group setting
3. Develop understanding and interpretation within the context of music history
4. Refine and improve technical ability
5. Demonstrate proper technique and usage

MUSC 2151. An Introduction to World Music, Jazz and Music Research
3 Credits (3)
Introduces world music and jazz within a historical and cultural context, considering significant musical figures, forms, genres, styles, and representative works. A major component will be the development of effective research and scholarly writing skills for the music major or minor. May be repeated up to 3 credits. Restricted to: Music majors and minors. Restricted to Las Cruces campus only.
Learning Outcomes
1. This course will cover fundamental concepts and styles associated with world music (ethnomusicology), jazz and popular music, an overview of the Western European tradition, and an intense focus on research and writing about music.
2. Emphasis will be placed on writing skills as they apply to the college experience in general and the world of music education and performance in particular.
3. Students will become acquainted with the diverse ways cultures create and are affected by their respective musical arts.
4. Focus will be on style evolution, forms, genres, composers, literature, and, where appropriate, performers

MUSC 2210. Diction I
2 Credits (2)
This course is designed to prepare students for singing in multiple languages using concepts of the International Phonetic Alphabet. Students will work to master the basics of phonetic singing to improve their overall musical abilities. Restricted to Las Cruces campus only.
Learning Outcomes
1. Correctly and consistently form vowel and consonant sounds when speaking and singing in multiple languages
2. Correctly and consistently transcribe texts in multiple languages using the International Phonetic Alphabet
3. Understand and explain the International Phonetic Alphabet’s usage and symbols
4. Develop and apply the concept of lyric diction to singing
5. Gain fluency, accuracy, and confidence in pronunciation of sung text

MUSC 2220. Diction II
2 Credits (2)
This course serves as a continuing study in the concepts of the International Phonetic Alphabet. Students will continue to improve and practice their diction to develop their singing and musical abilities in order to begin the mastery of lyric diction. Restricted to music majors. Restricted to Las Cruces campus only.
Prerequisite: MUSC 2210 or consent of instructor.
Learning Outcomes
1. Correctly and consistently form vowel and consonant sounds when speaking and singing in multiple languages
2. Correctly and consistently transcribe texts in multiple languages using the International Phonetic Alphabet
3. Understand and explain the International Phonetic Alphabet’s usage and symbols
4. Develop and apply the concept of lyric diction to singing
5. Gain fluency, accuracy, and confidence in pronunciation of sung text
6. Demonstrate ability to notate song texts according to IPA standards

MUSC 2240. Music History and Literature: Antiquity through Baroque
3 Credits (3)
Surveys Western art music within a historical and cultural context, considering significant musical figures, forms, genres, styles, and representative works from antiquity through the end of the Baroque era. An additional emphasis will be given to effective research and scholarly writing skills. Restricted to: M ED, MUSC majors.
Prerequisite(s): A grade of C- or better in MUSC 1450, 1460, and 2151.
Learning Outcomes
1. The purpose of the course is to survey the beginning history of music from the earliest ancient times through the Baroque period, ca. 175
MUSC 2310. Sound and Music Technology
1 Credit (1)
This course serves as an overview of current technologies and principles for the recording and production of sound, and the use of computer-based technologies for the production of music. Restricted to: MUSC, M ED majors. Traditional Grading with RR. Restricted to Las Cruces campus only.
Prerequisite(s): MUSC 1451 and MUSC 2460.
Learning Outcomes
1. Demonstrate fundamental knowledge of techniques and practices of music recording and production
2. Demonstrate ability to properly use computer-based technologies to produce and record music
3. Demonstrate ability to create music recordings
4. Work with a variety of recording, production, and sound reinforcement tools
5. Apply basic and mixed editing techniques
6. Use audio editing and file management techniques
7. Demonstrate knowledge of music technology vocabulary
8. Explain and understand the development of various music technologies

MUSC 2451. Ear Training III
1 Credit (1)
Continuation of MUSC 1451, advanced sight singing, dictation. Restricted to Las Cruces campus only.
Prerequisite(s): Grade of C or better in MUSC 1460.
Learning Outcomes
1. Count rhythms at sight using the Eastman Counting System
2. Sing melodies at sight and prepared using Solfege syllables
3. Write out rhythmic patterns
4. Write out melodic patterns
5. Identify and singing intervals
6. Identify and sing chord / triad qualities
7. Write out harmonic dictation

MUSC 2452. Ear Training IV
1 Credit (1)
Continuation of MUSC 2451, advanced sight singing, dictation. Restricted to Las Cruces campus only.
Prerequisite(s): Grade of C or better in MUSC 2451 and MUSC 2460.
Learning Outcomes
1. Count rhythms at sight using the Eastman Counting System
2. Sing melodies at sight and assigned for the level
3. Sing melodies at sight using solfege syllables
4. Write out rhythmic patterns in both simple and compound meters
5. Write out melodic patterns in both major and minor tonalities
6. Identify, label and sing intervals
7. Identify, label and sing chords and extended harmonic qualities, i.e. V7 and inversions
8. Write out harmonic progressions in both two and four part forms including secondary dominants and modulations.
9. Accurately detect melodic and rhythmic errors in dictation examples.

MUSC 2460. Music Theory III
3 Credits (3)
Analysis of Baroque and Classical Music. Vocabulary and syntax of 18th and 19th c. Western art music through study, chordal/formal analysis, and composition. Restricted to Las Cruces campus only.
Prerequisite(s): Grade of C or better in MUSC 1461.
Learning Outcomes
1. To learn and apply the vocabulary and syntax of 18th and 19th c. Western art music through study, chordal/formal analysis, and composition.
2. Topics covered include: Two-Voice Eighteenth Century Counterpoint; Fugue; Borrowed Chords; Neapolitan 6th Chords; Augmented 6th Chords; Sonata Form; Rondo Form.

MUSC 2461. Music Theory IV
3 Credits (3)
Analysis of Romantic, Post-Romantic, Impressionist, and Twelve-Tone Music. Vocabulary and syntax of late 19th and early 20th c. Western art music through study, micro/macro analysis, and composition. Restricted to Las Cruces campus only.
Prerequisite(s): Grade of C or better in MUSC 2460.
Learning Outcomes
1. To learn and apply the vocabulary and syntax of late 19th and early 20th c. music through study, micro/macro analysis, and composition.

MUSC 2470. Functional Piano IV
2 Credits (2)
For music majors preparing for Piano Proficiency Examination. May be taken for unlimited credit. Restricted to music majors. No S/U option.
Prerequisite: MUSC 1472 or consent of instructor.
Learning Outcomes
1. Keys learned in previous semesters, adding A flat, E flat, and B flat
2. Secondary dominant chords added to cadence patterns, all inversions
3. Arpeggios, all inversions
4. More difficult sight-reading and transpositions
5. More difficult prepared pieces
6. Four part pieces (hymns)
7. Accompany a piece for any instrument on the Mid-Term Recital (required) Score reading and transposition

MUSC 2510. Applied Music I
1-4 Credits
Individual instruction to develop technique, musicianship, performance and improvisational skills, as well as knowledge of significant repertoire. May be repeated up to 16 credits. Consent of Instructor required. Restricted to: Music and Music Education majors. Traditional Grading with RR. Restricted to Las Cruces campus only.
Prerequisite(s): Audition.
Learning Outcomes
1. Varies

MUSC 2993. Opera Workshop
1 Credit (1)
Study, translation, analysis, rehearsal and performance of opera. May be repeated up to 10 credits. Restricted to Las Cruces campus only.
Prerequisite(s): by audition only.
Learning Outcomes
1. Varies
Learning Outcomes

NA - NURSING ASSISTANT (NA)

NA 101. Nursing Assistant Theory and Lab
6 Credits (5+2P)
Nurse aide skills with emphasis on a bio-psychosocial-cultural approach to client 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. Requires a C or better to pass. Restricted to Community Colleges campuses only.

Learning Outcomes
1. Apply theoretical knowledge associated with nursing assisting in providing basic healthcare services. Perform essential clinical skills within the nursing assistant scope of practice in long-term, acute care, and ambulatory care settings. Recognize factors that affect procedures and results, and take appropriate actions within predetermined limits when indicated, including resident/patient compromise or complications. Demonstrate professional conduct and interpersonal communication skills with patients, other health care professionals, and with the public. Recognize the responsibilities of other health care personnel and interact with them with respect for their healthcare roles and resident/patient care. Apply basic scientific principles and evidenced-based practice in learning new techniques and procedures. Relate vital signs, point-of-care testing, and physical psychological findings to common disease processes. Evaluate occupational exposures, environmental safety hazards, high risk situations, and emergency responses related to health care professions. Demonstrate soft skills related to assisting with patient assessment, mobility, safety, nutrition, and care of the environment. Demonstrate professionalism when interacting with patient populations across the lifespan, including patient education and emergent situations. Explain legal and ethical considerations, including HIPAA and scope of practice related to healthcare settings.

NA 102. Sterile Processing Technician
4 Credits (3+3P)
This course will prepare the student to work as a Sterile Processing Technician, performing critical functions that support both the hospital and Operating Room. The student will learn about infection control, instrument reprocessing, decontamination, disinfection, and sterilization. All critical aspects of sterile processing will be covered to include applicable standards and regulations. This field is constantly evolving and those desiring to work in this profession must ensure that they stay abreast of the science behind the discipline. Restricted to Community Colleges campuses

Prerequisite(s): CCDE 110 N General Composition Placement exam scores, or specific course work.

Learning Outcomes
1. Summarized the legal responsibilities, ethical standards, and safety practices related to Sterile Processing Control and eliminate the spread of microorganisms Articulate standards and regulations as well as recommendations by professional organizations Properly clean, decontaminate, disinfect, and sterilize basic surgical instrumentation Prepare and assemble surgical trays and kits to include packaging and quality assurance indicators Utilize various sterilization modalities

NA 104. Nursing Assistant Fundamentals
3 Credits (3)
This course prepares students for employment as a Nursing Assistant in a Long Term Care Facility. Theory and basic nursing care skills will be taught with an emphasis being placed on the psychosocial-cultural approach to client care. Students will learn communication skills, basic anatomy and physiology, growth and development, infection control, body mechanics, basic nutrition, client/resident elimination needs, the client/resident unit, vital signs, range of motion exercises, bed making, rehabilitation and restorative care, client admission and discharge, common health problems, dealing with death and dying, and basic medical terminology. NA 104 and NA 104L (laboratory) must be successfully completed with a C- or better in order to continue to NA 105 Nursing Assistant Clinical. NA 105 must also be successfully completed with a C- or better to be eligible to take the state certification competency examination. Attendance is required to meet the federal requirements for training hours and content prior to direct contact with a patient/resident and the state competency examination. Students must test out of all CCDE and CCDR courses and eligible to take ENGL 1110G to enroll in this course. Restricted to Community Colleges campuses only.

Corequisite(s): NA 104 L.

NA 104 L. Nursing Assistant Fundamentals Lab
1 Credit (3P)
This course prepares students for employment as a Nursing Assistant in a Long Term Care Facility. Students will learn and demonstrate personal care skills including bathing, grooming, dressing, toileting, assisting with eating and hydration, skin care, transfers and positioning. Students will also learn and demonstrate the use of assistive devices, and how to maintain resident safety, dignity and privacy. NA 104 & NA 104L must be successfully completed with a C- or greater in order to continue to NA 105 Clinical. NA 105 must be successfully completed with a C- or greater to be eligible to take the state certification competency examination.

Prerequisite(s)/Corequisite(s): NA 104. Prerequisite(s): English COMPASS score of 35 or greater or CCDE 110N, and reading COMPASS score of 55 or greater or CCDR 105N. Restricted to Community Colleges campuses only.
NA 105. Nursing Assistant Clinicals
4 Credits (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. Restricted to: Community Colleges only.
Prerequisite(s): C or better in NA 104 or consent of instructor.

NA 109. Phlebotomist Basic
4 Credits (2+4P)
This course provides the latest information, techniques, skills, and equipment for blood and specimen collection based on the standards of the Clinical and Laboratory Standards Institute, Needlestick Prevention Act, Joint Commission 2008 National Patient Safety Goals, OSHA and CDC. An advanced skills lab is included in the course to provide a "hands-on" practice experience and a 30 hour practicum in a supervised work environment collecting blood and specimens on actual patients for laboratory tests. Attendance is mandatory. Prepares students for employment as a phlebotomist in health care settings. Requires a "C" or better to pass. Upon successful completion of course, student has the opportunity to test for National Healthcareer Certification. Consent of Instructor required.
Prerequisite(s)/Corequisite(s): BIOL 1130 or BIOL 2225. Restricted to Community Colleges campuses only.

NA 110. Electrocardiogram Technician Basic
4 Credits (3+2P)
Prepares students for employment as an Electrocardiogram Technician. Includes basic theory of the cardiovascular system, cardiac rhythm interpretation, 12 lead ECG lead placement, and ECG equipment troubleshooting. The course includes an advanced skills laboratory for "hands-on" practice and 16 hours of supervised clinical work environment assisting with ECG testing. Attendance is mandatory. Course requires a grade of "C" or better to pass. Upon successful completion of course, student has the opportunity to test for National Healthcareer Certification. Restricted to Community Colleges campuses only.
Learning Outcomes
1. Perform ECG's, including patient preparation, electrode placement, recording ECG's, mounting upload of ECG to patient’s chart. Calculate a patient's heart rate and identify the heart rhythm from an ECG tracing. Identify artifacts; waveform elements of the cardiac cycle, including variances related to ischemia, injury or infarction; as well as, major classifications of arrhythmias. Prepare and monitor patient’s for Holter monitoring and telemetry. Prepare, conduct and monitor patients during stress testing. Recognize factors that affect procedures and results, and take appropriate actions within predetermined limits when indicated, including patient compromise or complications. Demonstrate professional conduct and interpersonal communication skills with patients, laboratory personnel, other health care professionals, and with the public. Recognize the responsibilities of other laboratory and health care personnel and interact with them with respect for their jobs and patient care. Apply basic scientific principles in learning new techniques and procedures.
2. Relate electrocardiogram findings to common disease processes.

NA 111. Alzheimer/Dementia Care Focus
3 Credits (3)
Students will learn respectful care of Alzheimer/Dementia persons while ensuring their dignity, maximizing safe independence focusing on strengths and abilities.
Prerequisite(s)/Corequisite(s): NA 104 or NA 101. Restricted to: Community Colleges only.

NA 113. Sterile Processing Practicum
5 Credits (1+4P)
This course will allow students to get hands on training in the Sterile Processing Department. They will perform critical functions learned in the Sterile Processing Technician course. They will apply principles of medical asepsis and infection control and by the end of the practicum be able to independently function in all work areas of the Sterile Processing Department. This field is constantly evolving and those desiring to work in this profession must ensure that they stay abreast of the science behind the discipline. Restricted to Community Colleges campuses
Prerequisite(s)/Corequisite(s): NA 102. Prerequisite(s): CCDE 110 N.
Learning Outcomes
1. Utilize equipment safely in the Sterile Processing Department
   Apply concepts of infection control and medical asepsis Effectively demonstrate professional ethical concepts Demonstrate proper cleaning, decontamination, disinfection, and sterilization practices
   Properly prepare and assemble surgical trays and kits to include packaging and quality assurance indicators Validate sterilization loads to ensure patient safety

NA 115. Phlebotomist Technician
6 Credits (3+6P)
Basic theory and skills of phlebotomy following OSHA and Center for Disease Control guidelines. Prepares students for the requirements of testing for the ASCP certification exam and employment in a healthcare organization as a phlebotomist in licensed settings. Laboratory hours include infection control skills & practice, patient assessment & teaching, and practice in venipuncture. Clinical time includes clinical laboratory processes and operations, patient assessment, venipuncture, and exposure to clinical policies and procedures. Upon successful completion students are workforce ready. Requires C or better to pass. Restricted to Community Colleges campuses only.
Learning Outcomes
1. Collect and process biological specimens for analysis. Recognize factors that affect procedures and results, and take appropriate actions within predetermined limits when corrections are indicated. Monitor quality control within predetermined limits. Perform preventative and corrective maintenance of equipment and instruments or refer to appropriate source for repairs. Demonstrate professional conduct and interpersonal communication skills with patients, laboratory personnel, other health care professionals, and with the public. Recognize the responsibilities of other laboratory and health care personnel and interact with them with respect for their jobs and patient care. Apply basic scientific principles in learning new techniques and procedures.

NA 204. Patient Care Technician
4 Credits (3+3P)
This course will prepare Certified Nursing Assistants (CNAs) to work in the acute care setting through an expansion of their existing basic skill set. Students will acquire expanded acute care skills, critical thinking skills, and knowledge in caring for patients of all ages. Currently CNA certified. Restricted to Community Colleges campuses only.
Prerequisite(s): (NA 104, NA 105, NA 109, NA 110, AHS 120, and (BIOL 1130 or (BIOL 2210 & BIOL 2225)).
Corequisite(s): NA 205.
NA 205. Patient Care Technicians Practicum
4 Credits (1+9P)
This course will prepare Certified Nursing Assistants (CNAs) to work in the acute care setting through an expansion of their existing basic skill set. Students will acquire expanded acute care skills, critical thinking skills, and knowledge in caring for patients of all ages. Students will go to acute care settings to practice newly acquired skills. Must have a "C" or better to pass. Restricted to Community Colleges campuses only.
Prerequisite(s): (NA 104, NA 105, NA 109, NA 110, AHS 120, & (BIOL 1130 or BIOL 2210 & BIOL 2225)) Currently CNA Certified.
Corequisite(s): NA 204.

NA 209. Phlebotomy Laboratory Technician
4 Credits (2+4P)
A continuation of NA 109, Phlebotomy Basic. This course furthers the experience, knowledge and skills of the phlebotomist by providing advanced specimen collection techniques, skills to assist with lab management, patient data processing, quality control measures, and customer service. Completion of thirty clinical hours and fifty successful venipunctures are required. Attendance in mandatory. Requires a final grade of "C" or better to pass. Consent of Instructor required. Restricted to Community Colleges campuses
Prerequisite(s)/Corequisite(s): ENGL 1110G or ENGL 1110H or ENGL 1110M. Prerequisite(s): (BIOL 1130 or BIOL 2310 & BIOL 2225), and AHS 120, and NA 109.

Learning Outcomes
1. Students will learn and demonstrate advanced specimen collection techniques. Students will learn and demonstrate advanced laboratory processing skills. Students will effectively employ skills required for patient information processing. Students will employ concepts of medical asepsis and infection control. Students will apply knowledge and skills required for quality control measures in the laboratory setting. Students will demonstrate professional and appropriate communication, in addition to soft skills. Students will learn and practice blood collection techniques in preparation for the PBTASCP national certification exam.

NA 210. Administrative Procedures for Medical Assistants
4 Credits (4)
This course will provide students with the administrative procedures needed for a medical assistant. Skills will include creating welcoming environment, cultural considerations, office safety, opening and closing procedures, computer operation and management, written and telephonic communications, financial procedures, patient scheduling, medical record management, and medical insurance, billing, and coding. Restricted to Community Colleges campuses
Prerequisite(s)/Corequisite(s): NA 212. Prerequisite(s): MATH 1215, and ENGL 1110G, and AHS 120, and BIOL 1130 or BIOL 2225.

Learning Outcomes
1. Create and maintain a medical facility environment
2. Demonstrate professional business communications in writing, via telephone, and email.
3. Demonstrate patient scheduling, screening calls, and check-in.
4. Create a patient chart and demonstrate medical record management.
5. Demonstrate the use and management of an electronic health record.
6. Identify insurance and billing terminology.
7. Identify the different characteristics of third party medical payer sources.
8. Collect information for billing, and precertification for services.
9. Identify common procedure codes for diseases and procedures
10. Complete billing and coding forms.
11. Demonstrate office financial practices, managing patient accounts, and tracking, collecting payments, documentation, and performing banking procedures.
12. Performing inventory, and purchasing of supplies.
13. Identify billing and collection procedures.
15. Apply laboratory regulations for safety and quality in the medical laboratory
16. Identify legal considerations in the management of a medical office.

NA 212. Medical Assistant Capstone Course
6 Credits (6)
This course provides the student with entry-level theory and limited "hands-on" training in basic and routine clinical office tasks. The course will equip the Medical Assistant (MA) student with the competencies required to perform in a medical office under the direct supervision of a physician. The graduate will be able to assist the physician with physical exams, ECGs, phlebotomy, and minor surgical procedures. CNA Certification within the last 5 years.
Prerequisite(s): NA 105, NA 110, NA 109, AHS 120, BIOL 1130, BOT 208, HIT 228, HIT 248.
NA 214. Medical Assistant Practicum
6 Credits (1+6P)
This course is the practicum for NA 212 Medical Assistant Fundamentals Capstone Course. Students will prepare for a career as a medical assistant in medical offices and clinics. During practicum students will observe and participate in 180 hours in a supervised work environment using knowledge and skills learned in NA 212. This course includes weekly post-practicum conferences with the instructor. The student will be evaluated by both the employer and the instructor. Requires a "C" or better to pass. Upon successful completion the student may be eligible for National Certification. Students who have been CNA Certified within the last 5 years can use this to enroll into this course. Consent of instructor required.
Prerequisite(s)/Corequisite(s): NA 212. Prerequisite(s): NA 105, NA 110, NA 109, AHS 120, BIOL 1130, BOT 208, HIT 228, HIT 248. Restricted to Las Cruces campus only.

NAV-NAVAJO (NAV)

NAV 101. Introduction to Navajo Studies
3 Credits (3)
Covers geography, demography, institutions of modern Navajo society with historical overview. Restricted to: Community Colleges only.

NAV 111. Elementary Navajo I
4 Credits (4)
Navajo for beginners with emphasis on speaking skills.
Prerequisite: not open to Navajo-speaking students except by consent of instructor.

NGEC-NATURAL GAS ENGINE COMP

NGEC 133. Natural Gas Engine Repair Technology
5 Credits (5)
This course will cover the engine fundamentals, cylinder head and valve trains, engine block, engine servicing, lubrication and cooling Systems. Restricted to: Natural Gas Engine Compression majors. Restricted to Carlsbad campus only.
Learning Outcomes
1. A basic knowledge about engine operation.
2. Practice shop safety, ability to identify potential hazards, tool identification, proper rigging and crane operation.
3. Ability to identify specific components of a natural gas engine and their function.
4. Locate and identify various components on and off an engine.
5. Safely start large stationary industrial natural gas engines.
6. List the steps of preventive maintenance on natural gas engines.
7. Completely disassemble a natural gas engine, clean and organize parts, and measure critical clearances using appropriate precision measuring tools.
8. Replace or repair any defects that are found on assigned engine, compile a list of parts needed to make repairs, assemble engine correctly, and start and run the engine.  
Prerequisite: Grade of C or better in NGEC 175.

NGEC 245. Natural Gas Engine Management and Control Technology
5 Credits (5)
This course delivers operational and application studies of Engine Management System Fundamentals, Sensors, Engine Inspection, and Engine Management Fault Investigation. Restricted to: Natural Gas Engine Compression majors. Restricted to Carlsbad campus only.
Learning Outcomes
1. Identify specific components of a natural gas engine and their function.
2. Explain the four major systems of a natural gas engine.
3. Identify specific components of a natural gas engine and their function.
4. List the steps of preventive maintenance on natural gas engines.
NGEC 246. Fuel and Emissions Technology
5 Credits (5)
This course delivers operational and application studies of fuel components and emissions control system. Restricted to: Natural Gas Engine Compression majors. Restricted to Carlsbad campus only.

Learning Outcomes
1. Identify specific components of a natural gas engine and their function.
2. List the steps of preventive maintenance on natural gas engines.
3. Know the fuel components and operation
4. Locate and identify various components on and off an engine.
5. Safely start stationary industrial natural gas engines.

NGEC 295. Special Topics
2 Credits (2)
Topics are to be announced in the Schedule of Classes. The topic and project are to be discussed and implemented between faculty member and student. Student gives presentation to class at the end of the term of study. All-Natural Gas Compression Technology classes in the NGEC Program must be completed or in progress before enrolling in this course. Restricted to: Natural Gas Engine Compression majors. Restricted to Carlsbad campus only.

Learning Outcomes
1. The student should provide an overall meaning during the individual time in the NGEC Program for this final project.

NURS-NURSING (NURS)

NURS 110. Pre-Nursing Freshman Seminar
1 Credit (1)
This Freshman seminar provides an introduction to the university and its resources, an orientation to the pre-nursing curriculum, and overview of concepts for professional nursing practice. Emphasis is placed on exploring the nurse's role as an integral member of the healthcare team across multiple contexts and settings, and developing a professional identity. Consent of instructor required.

NURS 120. Introduction to Pharmacology
3 Credits (3)
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. May be repeated up to 3 credits. Crosslisted with: HIT 120. Restricted to Community Colleges campuses only.

NURS 134. Foundation of Nursing Skills and Assessment
3 Credits (1+6P)
This course provides nursing students with introductory nursing knowledge related to performance of nursing skills and assessment including: techniques of fundamental nursing care, basic and intermediate nursing skills, and foundational physical assessment techniques associated with care across the lifespan. Open to students who have been accepted into the nursing program. Students must be admitted into the Nursing Program to enroll in this course. Restricted to: NUR majors. Restricted to: Community Colleges only.

Corequisite(s): NURS 136 & NURS 137 or permission of the Program Director.

NURS 136. Foundations of Nursing Practice
6 Credits (4+6P)
This course will introduce the nursing student to foundational theoretical concepts of professional nursing practice, the nursing process, and foundational nursing skills. It includes developmental concepts related to clients across the lifespan. Clinical experiences in the simulation lab, long-term care, the community, and rehabilitation settings will provide the student with the opportunity to apply learned skills to provide total care to meet needs of one adult client and to develop care planning skills related to actual problems. Students must be concurrently enrolled in both the lecture and lab sections of the course. Only students who have been admitted to the nursing program may enroll in this course. Students must be admitted into the Nursing Program to enroll in this course. Restricted to: NUR majors. Restricted to: Community Colleges only.

Corequisite(s): NURS 134, NURS 137.

NURS 137. Care of Geriatric Patient
3 Credits (3)
This course will introduce the nursing student to foundational concepts of age-appropriate/specific care of the older adult who represents the largest population of individuals placing demands on the healthcare system. It includes basic and complex concepts and issues related to care of the older client across the care continuum, provision of cost-effective care in a resource sparse environment. Only students who have been admitted to the nursing program may enroll in this course. Students must be admitted into the nursing program to enroll in this course. Restricted to: NUR majors. Restricted to Community Colleges campuses only.

Corequisite(s): NURS 134 & NURS 136.

NURS 140. Pathophysiology for Allied Health Professionals
3 Credits (3)
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. Restricted to Allied Health and Health Information Technology majors. Restricted to: Community Colleges only.

Corequisite(s): NURS 147 & NURS 149. Restricted to: NUR majors.
NURS 146. Common Health Deviations
6 Credits (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 client care situation both in the subacute and acute care settings. The nursing process is presented as guide for coordinating client care. Grade of C or better. May be repeated up to 6 credits. Restricted to: NURSING majors. Restricted to Carlsbad campus only.
Prerequisite(s): NURS 153, NURS 156, NURS 154, NURS 157, and NURS 210 or consent of program director.

NURS 147. Adult Health I
6 Credits (4+6P)
This course focuses on application of the nursing process and theoretical concepts of care for adults with commonly occurring health problems. Selected clinical learning experiences in the simulation lab, acute care, and community settings will allow the student to continue development of: prioritization skills, proficiency in performance of nursing skills, collaborative skills with clients, families, peers and health care team members, care planning skills related to patient actual, psychosocial, and potential problems in the delivery of total nursing care to meet needs of one adult client. Students must be concurrently enrolled in both the lecture and lab sections of the course. Only students who have been admitted to the nursing program may enroll in this course. Students must be admitted into the Nursing Program to enroll in this course. Restricted to: NURS majors. Restricted to Community Colleges campuses only.
Corequisite(s): NURS 130, NURS 147 lab, & NURS 149.

NURS 149. Mental Health Nursing
3 Credits (2+3P)
This course will allow the nursing student to develop skills necessary to provide nursing care for clients with mental health problems in various health care settings including: common mental health disorders, psychosocial dysfunction, psychosocial safety/substance abuse issues, violence, suicide, restraints, developmental age related pathophysiology, psychopharmacology, cultural/religious considerations, grief/loss, promotion of mental health, and therapeutic communication. Selected clinical learning experiences in the simulation lab, acute care, and community settings will allow the student to develop ability to develop: proficiency in performance of nursing skills, collaborative skills with clients, families, peers and health care team members, care planning skills related to patient actual, psychosocial, and potential problems in the delivery of total nursing care to meet needs of one client across the life span with acute/chronic mental health needs. Students must be concurrently enrolled in both the lecture and lab sections of this course. Only students who have been admitted to the nursing program may enroll in this course. Students must be admitted into the Nursing Program to enroll in this course. Restricted to: NURS majors. Restricted to Community Colleges only.
Corequisite(s): NURS 130, NURS 147, & NURS 149L.

NURS 150. Medical Terminology
3 Credits (3)
Understanding of the basic elements of medical words. Use of medical abbreviations. Same as OEHO 120 and BOT 150. May be repeated up to 3 credits. Crosslisted with: BOT 150, AHS 120 and HIT 150.

NURS 153. Medication and Dosage Calculation
1 Credit (1)
Techniques of dosage calculation for medication and fluid administration. RR applicable. Students must meet NMSU basic skills requirement in mathematics to enroll in this course.
Corequisite(s): NURS 156 and NURS 154.

NURS 154. Physical Assessment
2 Credits (2)
Beginning techniques of physical assessment by systems will be presented using the nursing process as a guide for providing safe client centered care throughout the life span. Grade of C or better is required. May be repeated up to 2 credits. Restricted to: NURSING majors. Restricted to Carlsbad campus only.
Prerequisite(s): BIOL 1130 or BIOL 2210.

NURS 155. Special Topics
1-4 Credits
Specific subjects to be announced in the Schedule of Classes.

NURS 156. Basic Nursing Theory and Practice
6 Credits (4+6P)
Introduction to the nursing profession and the beginning skills of nursing practice as it relates to normalcy. The nursing process is presented as a means of guiding the student in providing safe client centered 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. May be repeated up to 6 credits. Consent of Program Director requires. Restricted to: NURSING majors. Restricted to Carlsbad campus only.
Corequisite(s): NURS 153, NURS 154.
NURS 157. Maternal/Child Health Deviations
8 Credits (6+6P)
This course introduces the student to the concepts and principles of nursing care of the family from conception to adolescence. Utilizing the assessment, analyzing, planning, and implementation phases of the nursing process (the Care map), the student focuses on the supportive-educative nursing system to assist members of the family in meeting self-care requisites and how they are affected by the health deviations common to each developmental level beginning with conception and ending with adolescence. Knowledge gained in theoretical instruction is then applied to the patient care situation. After an introduction to the necessary clinical skills in the campus laboratory setting, students will participate in clinical experiences with the focus on the family from conception to adolescence. The assessment, analysis, planning, and implementation phases of the nursing process are emphasized as a tool to assist patients in meeting universal and developmental self-care requisites. Utilizing the nursing process, the student provides safe, client-centered care to diverse clients and families. Theoretical instruction is applied to client care situations. Students collaborate with clients, families, and the interdisciplinary team in meeting health care needs. Experiences may occur in the physician's office, local health department, day care centers, schools, or the hospital. Grade of C or better required. Restricted to: NURSING majors. Restricted to Carlsbad campus only.
Prerequisite: NURS 156, NURS 153, and NURS 154.
Learning Outcomes
1. Determine how values of clients, families and medical personnel impact the involvement of clients in their health care related to maternal/child and pediatric clients. Implement individualized client care utilizing an evidenced based approach related to maternal/child and pediatric clients. Choose health protection, health promotion, and disease prevention strategies in the care of maternal/child and pediatric clients. Apply the scope, risk factors, physiologic processes, and clinical management strategies to maternal/child and pediatric clients. Choose resources for continuity of client care related to maternal/child and pediatric clients. Give examples of significant information to report to other disciplines. Apply the principles of delegation in the provision of client care with maternal/child and pediatric clients. Utilize evidenced based information to implement a plan of care and employ nursing interventions for maternal/child and pediatric clients. Use the principles of ethical practice in the delivery of nursing care for maternal/child and pediatric clients. Apply policies, procedures and standards of care related to maternal/child and pediatrics in the provision of client care. Apply nursing interventions to reduce risk of harm to self and others related to maternal/child and pediatric clients. Choose available technology for delivery of nursing care related to maternal/child and pediatric clients.

NURS 210. Pharmacological Requisites of the Childbearing Family
1 Credit (1)
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): NURS 153, NURS 154 and NURS 156.
Corequisite(s): NURS 157.
Learning Outcomes
1. Effective communication skills in reading, writing, listening, and speaking. Basic critical thinking skills including problem identification, evidence acquisition, evidence evaluation, and reasoning/conclusion. An understanding of personal and social responsibility. An ability to apply the fundamental concepts of quantitative reasoning in mathematics and science. Appropriate information and digital literacy, and skills for personal and professional use.

NURS 211. Pharmacological Requisites of Simple Health Deviations
1 Credit (1)
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. Restricted to: Carlsbad campus only.
Prerequisite(s): BIOL 2210 and BIOL 2225 and NURS 153,NURS 154, NURS 156, NURS 157 and NURS 210.
Corequisite(s): NURS 246 and NURS 258.
NURS 212. Pharmacological Requisites of Complex Health Deviations
1 Credit (1)
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): NURS 153, NURS 154, NURS 156, NURS 157, NURS 246, NURS 258, NURS 210 and NURS 211.
Corequisite(s): NURS 256 and NURS 260.
Learning Outcomes
1. Apply principles of teaching/learning in educating clients on the use, adverse effects and interactions of pharmacotherapeutic agents used to treat complex health deviations. Collaborate with members of the health care team in the delivery of pharmacotherapeutics to clients with complex health deviations. Given examples of commonly prescribed drugs used to treat clients with complex health deviations and related pharmacokinetics and pharmacodynamics. Discuss the relationship between the use of pharmacotherapeutics and the treatment of disease in clients with complex health deviations. Identify safety issues and minimize risk potential associated with pharmacotherapeutics.

NURS 201. Special Topics
1-4 Credits
Specific topics to be announced in the Schedule of Classes. May be repeated for a maximum of 10 credits. Restricted to: Community Colleges only.
Prerequisite: admission to the nursing program.
NURS 209. Independent Study
1-4 Credits
Individual studies to meet identified student needs. May be repeated for a maximum of 10 credits. Restricted to: Community Colleges only.
Prerequisite: admission to the nursing program.
NURS 224. Maternal Child Nursing  
5 Credits (4+3P)  
This course provides the intermediate nursing student with an in-depth review of care of the childbearing woman, family structures and roles, and nursing care of the child from birth through adolescence. Emphasis includes the care of pre-partum, intra-partum and postpartum clients, the neonate and health deviations in pediatric clients. Clinical experiences in the simulation lab, the community, and acute care settings will provide the student with the opportunity to apply learned skills to provide total care to meet needs of up to two adult, neonatal, or pediatric clients and to apply care planning skills related to actual, psychosocial and potential problems. Students must be concurrently enrolled in both the lecture and lab sections of the course. Only students who have been admitted to the nursing program may enroll in this course. Restricted to: NUR majors. Restricted to: Community Colleges only.  
Corequisite(s): NURS 235, & NURS 236.

NURS 226. Adult Health II  
6 Credits (4+6P)  
This course focuses on application of nursing process and theoretical concepts of care for adults with complex health alterations. Selected clinical learning experiences in the simulation lab, acute care, and community settings will allow the student to apply: prioritization skills, maintain proficiency in performance of nursing skills, collaborative skills with clients, families, peers and health care team members, and care planning skills in the delivery of nursing care to meet needs of three adult clients. Students must be concurrently enrolled in both the lecture and lab sections of the course. Only students who have been admitted to the nursing program may enroll in this course. Restricted to: NUR majors. Restricted to: Community Colleges only.  
Corequisite(s): NURS 224, NURS 235.

NURS 235. Nursing Leadership and Management  
1 Credit (1)  
This course introduces the intermediate nursing student to professional practice principles of nursing leadership and management including: health policy and politics, fiscal management & budgeting, conflict management, decision making, interdisciplinary practice, working with teams, roles in disaster planning and management, application of standards of care to risk management, organization of care delivery, health care systems, processes, and practice environments. May be repeated up to 1 credits. Students must be admitted into the Nursing Program to enroll in this course. Restricted to: NUR majors. Restricted to Community Colleges campuses only.  
Corequisite(s): NURS 224, NURS 226.

NURS 236. Nursing Preceptorship - Adult Health III  
6 Credits (2+12P)  
This course is the final course involving care of the patient with acute or chronic illness. It focuses on care of patients with complex or multi-system problems allowing the graduating nursing student to discuss and apply all the skills learned in previous nursing courses. After successfully passing the HESI exam, students have clinical practice with preceptor in various health care settings. Selected clinical learning experiences in the simulation lab, acute care, and community settings will allow the student to: organize care of a group of clients, maintain proficiency in performance of nursing skills, collaborate with clients, families, peers and health care team members, and support care planning skills related to patient actual, psychosocial, and potential problems in the delivery of nursing care to meet needs of the preceptors group of clients. Students must be concurrently enrolled in both the lecture and lab sections of the course. Only students who have been admitted to the nursing program and have successfully completed all level 1, 2 and 3 nursing courses may enroll in this course. Clinical may include inpatient or outpatient care, days, evenings, nights, or weekend experiences. Students are required to work the preceptors assigned schedule. NCLEX Review must be done concurrently. Students must be admitted into the Nursing Program to enroll in this course. Restricted to: NUR majors. Restricted to: Community Colleges only.  
Corequisite(s): NURS 201.

NURS 246. Health Deviations I  
7 Credits (4+9P)  
Introduction to medical/surgical clients, whose health care needs are routine and predictable. Focus is on simple health deviations, including concepts relative to health promotion and maintenance. The nursing process is utilized to provide evidenced based, safe client centered care. Students are expected to apply clinical judgment, communicate and collaborate with clients and the interdisciplinary team in providing care for a group of two to three clients. Grade of C or better required. May be repeated up to 7 credits. Restricted to: Nursing majors. Restricted to Carlsbad campus only.  
Prerequisite(s): NURS 153, NURS 156, NURS 154, NURS 157 and NURS 210.  
Corequisite(s): NURS 211, NURS 258.
NURS 256. Health Deviations II
8 Credits (6+12P)
Concepts and principles applied to clients with complex health deviations. Building upon knowledge gained in NURS 246, focus will be on acutely ill clients. The nursing process continues to serve as a guide to provide safe, client centered care. The student collaborates with the interdisciplinary team in all aspects of client care. Student experiences the role of the staff nurse under the guidance and direction of the nursing instructor. Grade of C or better required. May be repeated up to 8 credits. Restricted to: Nursing majors. Restricted to Carlsbad campus only. 
Prerequisite(s): NURS 153, NURS 154, NURS 156, NURS 157, NURS 210, NURS 211, NURS 246, and NURS 258. 
Corequisite(s): NURS 212, NURS 260. 
Learning Outcomes
1. Apply each step of the nursing process as a method of organizing the nursing care for patients with complex health deviations. Discuss the patient’s health care needs that occur as a result of complex health deviations. Explain methods the nurse can employ in allowing the patient to assume the right and responsibility for his own care. Incorporate the concepts and principles derived from the biological, developmental, social, nutritional and computer sciences and nursing knowledge that relate to the nursing care of patients with complex health deviations. Explain the roles and functions of the members of the health care team including ancillary personnel as they relate to the care of patients with complex health deviations. Explain the rationale for the performance of the following technical skills: a. EKG monitoring; b. Rhythm strip interpretation; c. Hemodynamic monitoring and interpretation; d. Tracheal suctioning Recognize the nurse’s role in establishing a therapeutic relationship with patients experiencing complex health deviations.

NURS 258. Psychosocial Requisites: A Deficit Approach
3 Credits (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 care for the client with psychosocial disorders. Building upon the communication skills of listening and responding, the student develops the therapeutic skills of interpersonal relationships. Grade of C or better is required. May be repeated up to 3 credits. Restricted to: Nursing majors. Restricted to Carlsbad campus only. 
Prerequisite(s): NURS 153, NURS 154, NURS 156, NURS 157, NURS 210, and NURS 246. 
Corequisite(s): NURS 211, NURS 246. 

NURS 260. Management of Patients with Health Deviations
2 Credits (2)
A capstone course to the nursing program in which principles in management and delegation to less prepared personnel is explored. A review of leadership roles, legal issues, quality initiatives, informatics and scope of practice is included. Preparation for the NCLEX is an integral portion of the course. Grade of C or better is required. May be repeated up to 2 credits. Restricted to: Nursing majors. Restricted to Carlsbad campus only. 
Prerequisite(s): NURS 153, NURS 154, NURS 156, NURS 157, NURS 210, NURS 211, NURS 246, and NURS 258. 
Corequisite(s): NURS 212, NURS 256. 
Learning Outcomes
1. Discuss nursing practice concepts relevant to the practice of professional nursing. Evaluate principles of quality improvement and safety into nursing practice within healthcare organizations and systems. Apply leadership concepts through the application of policies that apply to healthcare delivery. Promote a culture of safety through anticipating and eliminating potentially harmful situations. Collaborate in systems analysis when clinical errors or near misses occur to reduce harm, minimize blame, and encourage transparency. Integrate evidence in determining best clinical practice. Demonstrate basic knowledge of healthcare policy, finance, and regulatory environments, including local, state, national, and global healthcare trends. Use an ethical framework to evaluate the impact of policies of healthcare, especially for vulnerable populations.

NUTR-NUTRITION
NUTR 2110. Human Nutrition
3 Credits (3)
This course provides an overview of nutrients, including requirements, digestion, absorption, transport, function in the body and food sources. Dietary guidelines intended to promote long-term health are stressed. 
Learning Outcomes
1. Evaluate sources of nutrition information for reliability 
2. Identify elements of a nutritious diet 
3. Describe the digestion, transport, and absorption of nutrients 
4. Describe the importance of nutrition in weight control and health 
5. Identify nutritional needs as they relate to the life cycle and performance 
6. Describe behavior modification techniques that promote good health 
7. Evaluate popular nutrition trends for scientific accuracy and effectiveness 
8. Develop skills in the planning and assessing of healthy meal plans 
9. Describe the role of food choices in the development of chronic disease 
10. Describe the role of food in the promotion of a healthful lifestyle
NUTR 2120. Seminar I - Becoming a Nutrition Professional
1 Credit (1)
This course will introduce students to the field experience, careers, and professions in nutrition. This course is required for students pursuing a Didactic Program in Dietetics verification statement. May be repeated up to 1 credits. Consent of Instructor required. Restricted to: HNDS majors.

Learning Outcomes
1. Describe career options within the fields of Nutrition Dietetics.
2. Outline the HNDS field experience process.
3. Explain the educational pathways in HNDS.
4. List requirements for admission into the HNDS Dietetics pathway.
5. Begin an HNDS student portfolio.
6. Discuss the importance of personal responsibility accountability

OATS-OFFICE ADMINISTRATION TECHNOLOGY SYSTEMS

OATS 101. Keyboarding Basics
3 Credits (2+2P)
Covers the skills necessary to touch type on the computer keyboard using correct techniques. This includes the development of speed, accuracy, and formatting of basic business documents. May be repeated up to 3 credits. Restricted to Community Colleges campuses

Learning Outcomes
1. Demonstrate the correct operation of the alphabetic, numeric, symbol keys, space bar, shift keys, and return (enter) keys.
2. Have a thorough knowledge of correct hand position and posture for accurate keyboarding.
3. Keyboard words, sentences, and paragraphs smoothly, quickly, and accurately using the touch typing method.
4. Have the ability to keyboard with speed and accuracy.
5. Perform keyboarding and basic formatting functions to create professional business documents.

OATS 102. Keyboarding: Document Formatting
3 Credits (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: OATS 101 or consent of instructor.

OATS 105. Business English
3 Credits (3)
Training and application of the fundamentals of basic grammar, capitalization, punctuation, basic writing, sentence structure, and editing skills. May be repeated up to 3 credits. Restricted to Community Colleges campuses

Learning Outcomes
1. Identify and apply the rules for each of the parts of speech.
2. Construct four basic sentence patterns.
3. Apply punctuation, capitalization and numbers style to writing proficiently.
4. Utilize proofreader's marks in the editing of business correspondence.
5. Make use of appropriate reference materials to locate answers to language questions.

OATS 106. Business Mathematics
3 Credits (2+2P)
Mathematical applications for business. May be repeated up to 3 credits.
Restricted to Community Colleges campuses
Prerequisite(s): CCDM 103 N or adequate score on math placement exam.

Learning Outcomes
1. Apply fundamental concepts to personal and business math operations.
2. Maintain a checkbook.
3. Solve percent and percentage applications.
4. Calculate discounts, markups, and markdowns.
5. Calculate wages, salaries, deductions, and net pay.
6. Compare various borrowing options and identify the most cost effective option.
7. Interpret consumer loans and credit card accounts.
8. Compare various home ownership options.
9. Calculate taxes and identify insurance options.

OATS 110. Records Management
3 Credits (3)
Principles, methods and procedures for the selection, operation and control of manual and automated records systems.

OATS 120. Accounting Procedures I
3 Credits (2+2P)
Business accounting principles and procedures. Use of special journals, cash control, and merchandising concepts. Reports for sole proprietorships.

OATS 121. Accounting Procedures II
3 Credits (2+2P)
Continuation of OATS 120, emphasizing accounting principles and procedures for notes and interest, depreciation, partnerships and corporations, cash flow and financial statement analysis. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): OATS 120 or ACCT 2110.

OATS 140. Payroll Accounting
3 Credits (2+2P)
Payroll procedures including payroll tax forms and deposits. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): ACCT 2110 or OATS 120.

OATS 150. Medical Terminology
3 Credits (3)
Understanding of the basic elements of medical words. Use of medical abbreviations. Same as NURS 150 and OEHO 120. May be repeated up to 3 credits. Crosslisted with: NURS 150, AHS 120 and HIT 150. Restricted to Community Colleges campuses only.

OATS 158. Spanish Grammar for Business Administration
3 Credits (3)
Introductory course in Spanish grammar and practical business terms required for the proper application of fundamental oral and written business communication skills for Spanish speakers in the field of business administration. Restricted to Community Colleges campuses only.
Prerequisite(s): Spanish-speaking ability and computer keyboarding ability.
OATS 170. Office Communications in Spanish I
3 Credits (3)
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. Spanish speaking ability is required to enroll in this course. May be repeated up to 3 credits. Consent of Instructor required. Restricted to Community Colleges campuses

Prerequisite(s): OATS 170, Spanish speaking ability.

OATS 171. Office Communications in Spanish II
3 Credits (3)
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. May be repeated up to 3 credits. Consent of Instructor required. Restricted to Community Colleges campuses

Prerequisite(s): OATS 170 or ability to demonstrate keyboarding and typing skills.

OATS 191. Taking Minutes & Proofreading
3 Credits (3)
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. May be repeated up to 3 credits. Restricted to Community Colleges campuses

OATS 202. Keyboarding Document Production
3 Credits (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. Restricted to Community Colleges campuses

OATS 203. Office Equipment and Procedures I
3 Credits (2+2P)
Office organization, telephone techniques, equipment and supplies, handling meetings, human relations, mail procedures, and travel. May be repeated up to 3 credits. Restricted to Community Colleges campuses

OATS 205. Accounting Software I
3 Credits (2+2P)
Introduction to accounting software. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): Working knowledge of computers and accounting or consent of instructor.

OATS 206. Accounting Software II
3 Credits (2+2P)
Accounting software and office applications. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): OATS 121 or OATS 215.

OATS 207. Machine Transcription
3 Credits (2+2P)
Creating office documents using transcribing equipment and word processing software. Emphasis on proofreading, editing and grammar. May be repeated up to 3 credits. Restricted to Community Colleges campuses
Prerequisite(s): BOT 105.

OATS 208. Medical Office Procedures
3 Credits (2+2P)
Current computerized and traditional administrative medical office procedures will be introduced. Practical knowledge on managing required record keeping in a medical office environment will be emphasized. May be repeated up to 3 credits. Restricted to Community Colleges campuses
Prerequisite(s): HIT 150 or AHS 120, and computer keyboarding ability or consent of instructor.

OATS 209. Business and Technical Communications
3 Credits (3)
Effective written communication skills and techniques for career success in the workplace. Composition of letters, memos, short reports, forms, and proposals, and technical descriptions and directions.
Prerequisites: ENGL 1110G and computer keyboarding ability or consent of instructor.

OATS 211. Information Processing I
3 Credits (2+2P)
Defining and applying fundamental information processing concepts and techniques using the current version of leading software. May be repeated up to 6 credits. Restricted to Community Colleges campuses

OATS 213. Word Processing I
3 Credits (2+2P)
Operation and function of a word processor. Specific equipment to be announced in the Schedule of Classes.
Prerequisite: OATS 101 or keyboarding proficiency.

OATS 214. Word Processing II
3 Credits (2+2P)
Advanced operation and functions of a word processor. Specific equipment to be announced in the Schedule of Classes.
Prerequisite: OATS 213 or consent of instructor.

OATS 215. Spreadsheet Applications
1-3 Credits
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.

OATS 217. Powerpoint Presentation
3 Credits (3)
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: OATS 211 or ability to demonstrate keyboarding and Windows proficiency.

OATS 218. Information Processing II
3 Credits (2+2P)
Advanced information processing techniques using current version of leading software. May be repeated for a maximum of 6 credits.
Prerequisite: OATS 211 or consent of instructor.

OATS 220. Internship in Business Office Technology
2 Credits (2)
Experience in a supervised office position. Student must work at least eight hours per week. May be repeated for a maximum of 4 credits.
Prerequisites: sophomore standing and consent of instructor.
OATS 221. Internship I  
1-3 Credits  
Work experience that directly relates to a student’s major field of study that provides the student an opportunity to explore career paths and apply knowledge and theory learned in the classroom. Internships may be paid or unpaid. Students are supervised/evaluated by both the employer and the instructor. C- or better in the course is required. Consent of Instructor required. Restricted to Community Colleges campuses.

OATS 222. Internship II  
1-3 Credits  
Continuation of OATS 221. May be repeated up to 6 credits. Consent of Instructor required. Restricted to OATS & HIT majors. Graded: S/U. Grading (S/U, Audit). Restricted to Community Colleges campuses only.  
Prerequisite(s): OATS 221 and consent of instructor.

OATS 223. Medical Transcription I  
3 Credits (2+2P)  
Concepts in medical transcription are introduced on how to produce a variety of reports required in a medical office or facility utilizing accurate medical terminology, spelling, grammar, and document formatting. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.  
Prerequisite(s): HIT 150 or AHS 120 and HIT 158 and OATS 209.

OATS 228. Medical Insurance Billing  
3 Credits (2+2P)  
Comprehensive overview of the insurance concepts and applications required for successfully and accurately completing and submitting insurance claims and reimbursement processes for various insurance carriers, both private and government, will be emphasized. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.  
Prerequisite(s): HIT 150 or AHS 120.

OATS 233. Advanced Medical Transcription  
3 Credits (2+2P)  
Builds upon the concepts introduced in Medical Transcription I providing greater understanding of how to produce advanced reports dictated by physicians with increasing speed and accuracy. Emphasis will be on proofreading and editing of operative reports, patient history and physicals, office notes, labor and delivery reports, consultation reports, discharge summaries, and other medical reports. May be repeated up to 3 credits. Consent of Instructor required. Restricted to Community Colleges campuses only.  
Prerequisite(s): OATS 223 and HIT 130.

OATS 239. Personal Development  
3 Credits (3)  
Development of a marketable, employable office systems person, to include interview, voice, manners, and apparel.

OATS 240. Introduction to Individual Taxation  
3 Credits (3)  
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.

OATS 241. Auditing and Business Issues  
3 Credits (3)  
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. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.  
Prerequisite(s): OATS 120 or ACCT 2110.

OATS 244. Tax Preparation  
3 Credits (3)  
Introduces basic federal and state tax codes for preparing individual income tax returns. Emphasis on use of tax software.  
Prerequisite: keyboarding proficiency.

OATS 250. Electronic Office Systems  
3 Credits (2+2P)  
Management of the electronic office. Office use of computers, printers, fax machines, copiers, and scanner concepts will be covered.  
Prerequisite: OATS 211.

OATS 255. Special Topics  
1-4 Credits  
Specific subjects to be announced in the Schedule of Classes.

OATS 260. Bookkeeping Simulation Capstone  
3 Credits (2+2P)  
Refines the professional and technical skills students have learned while completing the Bookkeeping Assistant Option curriculum by demonstrating how coursework ties together. Designed as a bookkeeping assistant capstone course.  
Prerequisite(s): OATS 121 or ACCT 2110, OATS 140, OATS 205, and OATS 244, or consent of instructor.

OATS 270. Office Administration Technology Capstone  
3 Credits (2+2P)  
Refines professional skills learned in the BOT program and ties all BOT coursework together. May be repeated up to 3 credits. Consent of Instructor required. Restricted to Community Colleges campuses  
Prerequisite(s): OATS 102 or OATS 129; and OATS 120; and OATS 209 or ENGL 2210; and OATS 211 or OECS 211.  
Learning Outcomes  
1. Construct professional, error-free business documents that demonstrate appropriate formats and ideas in clear, concise, and correct written and spoken language.  
2. Utilize effective administration skills to enhance the productive operation of the workplace.  
3. Demonstrate professional behaviors and workplace ethics for the professional office environment.  
4. Demonstrate proficiency in the use of productivity software in business applications

OEBM-BIOMEDICAL TECHNOLOGY (OEBM)

OEBM 140. Applied Human Biology for Biomedical Technology  
3 Credits (3)  
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.
OEBS 141. Medical Electronics and Safety in Healthcare
3 Credits (3)
Introduction to the biomedical equipment technology field. Operation of common biomedical equipment to include pressure and temperature systems, infusion devices, patient monitors, and other physiologic and patient systems. Hospital safety and health regulations explained. Restricted to Community Colleges campuses only.
Prerequisite(s): OEBM 140.

OEBS 200. Biomedical Internship
1-4 Credits (3-12P)
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 up to 8 credits. Consent of Instructor required. Restricted to Community Colleges campuses only.
Prerequisite(s): OEBM 140 and OEBM 141.

OEBS 211. CBET Exam Preparation
1 Credit (1)
An overview of the Certified Biomedical Equipment Technician exam. Topics include anatomy and physiology, electronics principles, safety issues, equipment operation, and equipment troubleshooting.
Prerequisite(s)/Corequisite(s): OEBM 241 AND OEBM 240. Restricted to Community Colleges campuses only.

OEBS 240. Medical Imaging Systems
3 Credits (3)
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. Restricted to Community Colleges campuses only.
Prerequisite(s): OEBM 140.

OEBS 241. Advanced Medical Electronics
3 Credits (3+1P)
Advanced study in biomedical equipment to include cardiovascular, pulmonary, telemetry and other critical life support systems. Restricted to Community Colleges campuses only.
Prerequisite(s): OEBM 141.

OEBS-COMPUTER TECHNOLOGY (OECS)

OECS 101. Computer Basics
1 Credit (1)
Hands-on instruction to introduce computer use and commonly used software. Graded S/U.

OECS 105. Introduction to Information Technology
3 Credits (3)
Examination of information systems and their impact on commerce, education, and personal activities. Utilization of productivity tools for communication, data analysis, information management and decision-making. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.

OECS 110. Introduction to Power Point
1-3 Credits (1-3)
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. Restricted to Community Colleges campuses only.

OECS 125. Operating Systems
1-3 Credits
Installation, configuration and optimization of current operating systems. Restricted to: Community Colleges only.

OECS 128. Operating Systems Linux/Unix
3 Credits (3)
Installation, configuration, and use of Linux/Unix operating system software and utilities including hardware management, file management, use of command line, and scripting. Restricted to: Community Colleges only.

OECS 140. Introduction to Game Production Industry
1-3 Credits (1-3)
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. Restricted to Community Colleges campuses only.

OECS 141. Introduction to Interactive Game Programming
1-3 Credits (1-3)
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. Restricted to Community Colleges campuses only.

OECS 145. Mobile Application Development
1-3 Credits (1-3)
Introduction to elements of mobile application coding including concepts, design strategies, tools needed to create, test and deploy applications for mobile devices. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.

OECS 155. Special Topics - Introductory Computer Technology
0.5-4 Credits (.5-4)
Topics to be announced in the Schedule of Classes. May be repeated up to 8 credits.

OECS 185. PC Maintenance and Repair I
1-3 Credits
Introduction to most common types of PC configurations, installations, and failures. This course will explore troubleshooting skills for maintaining and repairing common hardware and software related problems. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.

OECS 192. C++ Programming I
3 Credits (3)
Development of skills in programming using the C++ programming language. Restricted to: Community Colleges only.

OECS 195. Java Programming I
1-3 Credits
Developing of skills in programming using the Java programming language. Restricted to: Community Colleges only.

OECS 200. Accounting on Microcomputers
3 Credits (3)
Fundamental accounting principles using popular microcomputer software to include G/L, A/R, A/P, purchase order, billing, inventory, and forecasting modules.
Prerequisite: ACCT 2110 or OATS 121.
OECS 204. Linux Operating System  
1-3 Credits
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. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.

Prerequisite: OECS 128.

OECS 207. Windows  
0.5-3 Credits
Covers local installation, configuration of core local services, managing users, and the general local management and maintenance of Windows workstations. May be repeated up to 6 credits.

Prerequisite(s)/Corequisite(s): OECS 185. Restricted to Community Colleges campuses only.

OECS 208. Internet Applications  
1-3 Credits
Survey of the Internet to include e-mail, file transfer, current search techniques, the World Wide Web and basic Web page development. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.

OECS 209. Computer Graphic Arts  
1-3 Credits
Basic graphics composition using computer programs to include editing and manipulating graphic images, clip-art, and printing of pictures. May be repeated for a maximum of 6 credits under different subtitles listed in the Schedule of Classes.

Prerequisite: OECS 105, BCIS 1110, or OECS 101.

OECS 211. Word Processing Applications  
1-3 Credits
Basic word processing to include composing, editing, formatting, and printing of documents. May be repeated under different subtitles listed in the Schedule of Classes for a maximum of 6 credits.

Prerequisites: BCIS 1110 or OECS 105.

OECS 215. Spreadsheet Applications  
1-3 Credits
Use of spreadsheets to include graphics and business applications. May be repeated for a maximum of 6 credits.

Prerequisites: BCIS 1110 or OECS 105.

OECS 220. Database Application and Design  
1-3 Credits
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. Restricted to: Community Colleges only.

Prerequisite(s): BCIS 1110 OR E T 120 OR E T 122 OR OECS 105.

OECS 221. Internship I  
1-3 Credits
Work experience that directly relates to a student’s major field of study that provides the student an opportunity to explore career paths and apply knowledge and theory learned in the classroom. Internships may be paid or unpaid. Students are supervised/evaluated by both the employer and the instructor. May be repeated up to 3 credits. Consent of Instructor required. Restricted to: OECS majors. Graded: S/U Grading (S/U, Audit). Restricted to Community Colleges campuses only.

Prerequisite(s): Consent of instructor.

OECS 222. Internship II  
1-3 Credits
Continuation of OECS 221. Each credit requires specified number of hours of on-the-job work experience. May be repeated up to 3 credits. Consent of Instructor required. Restricted to: OECS majors. Graded: S/U Grading (S/U, Audit). Restricted to Community Colleges campuses only.

Prerequisite(s): OECS 221 and consent of instructor.

OECS 223. Web Design for Business  
3 Credits (3)
Design and create a website using HTML, CSS, web development tools and industry-recognized software while applying best practices in site management and business web presence.

Learning Outcomes
1. Students will identify and apply best practices for web design in a business setting. Students will create a basic web page utilizing WC3 principles. Students will explain the importance and impact of web presence in today's business environment. Students will determine and utilize web page features and techniques for a specific business. Students will create a web design management plan for business. Students will discuss web page tools for performance and web traffic analytics. Students will identify web design components for a mobile society.

OECS 227. Computer Applications for Technicians  
3 Credits (3)
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 Credits
Definition of data communication; survey of hardware applications and teleprocessor software; examination and design of networks. May be repeated for a maximum of 6 credits.

Prerequisite: OECS 185.

OECS 231. Data Communications and Networks II  
1-3 Credits
Installation and application of popular microcomputer network software. May be repeated for a maximum of 6 credits.

Prerequisite: OECS 230.

OECS 234. Linux Server  
3-4 Credits (3-4)
This course addresses the implementation and support needs of IT professionals that are planning to deploy and support Linux Server(s). It provides in-depth, hands-on training for planning, implementation, management and support of Linux networking services. May be repeated up to 8 credits.

Prerequisite(s)/Corequisite(s): OECS 204. Restricted to: OECS majors. Restricted to Community Colleges campuses only.
O ECS 235. Structured Query Language (SQL)
1-3 Credits
Installation, configuration, administration, and troubleshooting of SQL client/server database management system. May be repeated up to 3 credits.
Prerequisite(s)/Corequisite(s): O ECS 220. Restricted to Community Colleges campuses only.

O ECS 237. Windows Server
3-4 Credits (3-4)
This course addresses the implementation and support needs of IT professionals that are planning to deploy and support Microsoft Windows Server Active Directory Domain Services in medium to large businesses. It provides in-depth, hands-on training for Information Technology (IT) professionals responsible for the planning, implementation, management, and support of Windows Active Directory services. May be repeated up to 4 credits.
Prerequisite(s)/Corequisite(s): O ECS 207. Restricted to Community Colleges campuses only.

O ECS 245. Game Programming I
3 Credits (3)
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.

O ECS 246. Game Programming II
3 Credits (3)
Continuation of O ECS 245. May be repeated for a maximum of 6 credits.
Prerequisite: O ECS 245.

O ECS 250. Systems Analysis and Design I
3 Credits (3)
Analysis, configuration, design and testing of organizations’ work flow as it relates to hardware, software, data, procedures and personnel. Systems Life Cycle approach matching end users’ needs to feasible financial, technical and operational solutions. Restricted to Community Colleges campuses only.
Prerequisite(s): O ECS 220.

O ECS 253. Applied Data Analysis and Management
3 Credits (3)
Applied use of advanced spreadsheet tools for data analysis and database tools for data and information management. Connect emerging topics in business to tools used in analyzing data and making raw data useful for business decision making.
Prerequisite: BCIS 1110.

Learning Outcomes
Plan, research, create, and revise spreadsheets and databases for a specific business application. Discuss emerging topics in business related to data analysis and management.

O ECS 255. Special Topics
1-4 Credits
Topics to be announced in the Schedule of Classes.

O ECS 261. Introduction to Networks
3-4 Credits (3-4)
Introduction to networking principles including the practical and conceptual skills for understanding basic networking, planning and designing networks, implementing IP addressing schemes, examining the OSI and TCP/IP layers, and performing basic configurations for routers and switches. Aligns to the first course of the Cisco Networking Academy CCNA curriculum. Restricted to Community Colleges campuses only.

O ECS 262. Essentials of Routing and Switching
3-4 Credits (3-4)
Examination of the architecture, components, and operations of routers and switches in a small network. Student will learn how to configure, verify and troubleshoot: routers and switches, static routing, default routing, VLANs, and ACLs. Aligns to the second course of the Cisco Networking Academy CCNA curriculum. May be repeated up to 4 credits.
Prerequisite(s)/Corequisite(s): O ECS 261. Restricted to Community Colleges campuses only.

O ECS 263. Network Fundamentals
3-4 Credits (3-4)
Fundamentals of networking architecture, components, and operations including practical and conceptual skills using routers and switches. Student will learn how to configure, verify and troubleshoot static routing, default routing, VLANs, and ACLs. This course aligns to the third course of the Cisco Networking Academy CCNA curriculum. May be repeated up to 4 credits.
Prerequisite(s)/Corequisite(s): O ECS 262. Restricted to Community Colleges campuses only.

O ECS 264. Network Routing Protocols
3-4 Credits (3-4)
Fundamentals of routing protocols for troubleshooting advanced network operations. Covers common networking issues such as RIP, OSPF, and EIGRP for IPv4 and IPv6 networks. This course aligns to the fourth course of the Cisco Networking Academy CCNA curriculum. May be repeated up to 4 credits.
Prerequisite(s)/Corequisite(s): O ECS 263. Restricted to Community Colleges campuses only.

O ECS 265. Network Security
3-4 Credits (3-4)
Fundamentals of design and implementation of network security solutions that will reduce the risk of system vulnerability. May be repeated up to 8 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): O ECS 204 or O ECS 207 or O ECS 216 or consent of instructor.

O ECS 275. PC Maintenance and Repair II
1-3 Credits
Continuation of O ECS 185. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): O ECS 185.

O ECS 280. Desktop Publishing I
3 Credits (3)
Design and production of publication materials to fill the needs of business communities, using a microcomputer. May be repeated for a maximum of 6 credits. Same as OATS 280.
Prerequisites: either BCIS 1110, O ECS 105.
OECS 290. Computer Technology Capstone  
1-3 Credits  
Refines skills learned in the OECS program. Culminates in a review and practice of advanced software applications. May be repeated up to 3 credits. Restricted to: OECS & OECT majors. Restricted to Community Colleges campuses only.  
Prerequisite(s): (OECS 125, OECS 128, OECS 207, OR OECS 203) AND (OECS 185 OR E T 283).

OECS 299. Independent Study  
1-3 Credits  
Specific subjects to be determined based on need. Restricted to: Community Colleges only.

OEEM- PARAMEDIC (OEEM)

OEEM 101. CPR for the Health Care Professional  
1 Credit (1)  
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 103. Heartsaver First Aid/CPR  
1 Credit (1)  
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 115. First Responder Prehospital Professional  
3 Credits (2+3P)  
Provides training in prehospital medical and traumatic emergencies. Consent of instructor required. Requires a C or better to pass. Restricted to majors.  
Corequisite(s): OEEM 101.

OEEM 120. Emergency Medical Technician Basic  
6 Credits (6)  
EMT-Basic skills to include care of soft tissue and muscular/skeletal injuries, circulatory, nervous, general medical and respiratory emergencies. Requires a "C" or better to pass. May be repeated up to 6 credits. Consent of instructor required.  
Corequisite(s): OEEM 101, OEEM 120L, OEEM 121.  
Prerequisite(s)/Corequisite(s): OEEM 153. Restricted to: OEEM majors. Restricted to Community Colleges campuses only.

OEEM 120 L. Emergency Medical Technician Basic Lab  
2 Credits (6P)  
EMT-Basic skills development with emphasis on assessment, skills competency, and team-work in patient care in the prehospital setting. May be repeated up to 2 credits.  
Corequisite(s): OEEM 101, OEEM 120, OEEM 121.  
Prerequisite(s)/Corequisite(s): OEEM 153. Restricted to: OEEM majors. Restricted to Community Colleges campuses only.

OEEM 121. Emergency Medical Technician Basic Field/Clinical  
1 Credit (3P)  
Covers the patient care experience provided through assigned shifts in the hospital and/or ambulance setting. Requires a "C" or better to pass. May be repeated up to 1 credits. Consent of instructor required.  
Prerequisite(s)/Corequisite(s): OEEM 101, OEEM 120, OEEM 120L, OEEM 153. Restricted to: OEEM majors. Restricted to Community Colleges campuses only.

OEEM 150. Emergency Medical Technician Intermediate Field/Clinical  
5 Credits (5)  
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. May be repeated up to 5 credits. Consent of Instructor required. Restricted to: OEEM majors. Restricted to Community Colleges campuses only.  
Prerequisite(s): Current EMT-basic license, pretest and consent of instructor.

OEEM 150 L. Emergency Medical Technician Intermediate Lab  
2 Credits (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.  
Prerequisite(s)/Corequisite(s): OEEM 150, OEEM 151. Restricted to: OEEM majors. Restricted to Community Colleges campuses only.

OEEM 151. Emergency Medical Technician Intermediate Field/Clinical  
5 Credits (5)  
EMT-Intermediate. Assessment and management of respiratory, cardiac, trauma, environmental, behavior, reproduction, and childhood emergencies. May be repeated up to 5 credits. Consent of Instructor required. Restricted to: OEEM majors. Restricted to Community Colleges campuses only.

OEEM 153. Introduction to Anatomy and Physiology for the EMS Provider  
3 Credits (3)  
To properly assess and manage a patient, a prehospital provider must have a solid foundation in human anatomy and physiology. This course provides a systematic approach to building this foundation. Grade of "C" or better is required to pass the course. Consent of Instructor required. Restricted to Community Colleges campuses only.

OEEM 155. Special Topics  
1-6 Credits  
Specific topics to be listed in Schedule of Classes. May be repeated for a maximum of 10 credits.

OEEM 177. Emergency Medical Services Instructor  
4 Credits (4)  
Theory of student learning, methodology, instructional components, evaluation, and course coordination for the EMS profession. May be repeated up to 4 credits. Consent of Instructor required. Restricted to Community Colleges campuses only.  
Prerequisite(s): Minimum of an EMT-Basic License required.

OEEM 201. Human Pathophysiology  
3 Credits (2+3P)  
Overview of anatomy and physiology. Emphasis on human body pathophysiology including a medical illness component. Requires a "C" or better to pass. May be repeated up to 3 credits. Consent of Instructor required. Restricted to: EMS, OEEM majors. Restricted to Community Colleges campuses only.  
Prerequisite(s): OEEM 120, OEEM 120 L.
OEEM 202. EMT-Paramedic Respiratory Emergencies
3 Credits (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. Requires a "C" or better to pass. May be repeated up to 3 credits. Consent of Instructor required. Restricted to: OEEMS,OEEM majors. Restricted to Community Colleges campuses only.
Prerequisite(s): OEEM 212.

OEEM 203. EMT-Paramedic Trauma Emergencies
3 Credits (2+3P)
Study of the effects of trauma on the human body. Assessment and management of trauma patients and scenes, including vehicular extrication. May be repeated up to 3 credits. Consent of Instructor required. Restricted to: OEEM majors. Restricted to Community Colleges campuses only.
Prerequisite(s): OEEM 216.

OEEM 206. Introduction to Advanced Prehospital Care
3 Credits (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. Restricted to: Community Colleges only. Restricted to OEEM majors.
Prerequisite(s): OEEM 120.

OEEM 207. Introduction to Pharmacology
3 Credits (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. Restricted to: Community Colleges only. Restricted to OEEM majors.
Prerequisite(s): OEEM 120.

OEEM 210. Cardiac Rhythm Interpretation
3 Credits (2+3P)
Cardiac conduction system: electrophysiology, electrocardiogram, monitor, atrial, sinus, ventricular and junctional dysrhythmias, multiple lead EKG and 12 lead EKG interpretation. Requires a "C" or better to pass. May be repeated up to 3 credits. Consent of Instructor required. Restricted to: OEEM, OEMS majors. Restricted to Community Colleges campuses only.
Prerequisite(s): OEEM 201, OEEM 206, OEEM 207.

OEEM 212. EMT-Paramedic Cardiovascular Emergencies
3 Credits (2+3P)
Review anatomy, physiology, and pathophysiology of cardiovascular system. Assessment and management of cardiovascular emergencies in the prehospital setting. Requires a "C" or better to pass. May be repeated up to 3 credits. Consent of Instructor required. Restricted to: OEEMS,OEEM majors. Restricted to Community Colleges campuses only.
Prerequisite(s): OEEM 210.

OEEM 213. EMT-Paramedic: Medical Emergencies I
3 Credits (2+3P)
Study of the disease process; assessment and management of neurological, endocrine, gastrointestinal, renal emergencies and infectious disease. Requires a "C" or better to pass. May be repeated up to 3 credits. Consent of Instructor required. Restricted to: OEEM, OEMS majors. Restricted to Community Colleges campuses only.
Prerequisite(s): OEEM 212.

OEEM 214. EMT-Paramedic: Medical Environmental Emergencies II
3 Credits (2+3P)
Study of disease process, assessment, and management of poisoning, drug and alcohol abuse, environmental, behavioral and geriatric emergencies. Requires a "C" or better to pass. May be repeated up to 3 credits. Consent of Instructor required. Restricted to: OEMS, OEEM majors. Restricted to Community Colleges campuses only.
Prerequisite(s): OEEM 213.

OEEM 216. EMT-Paramedic: Reproductive and Childhood Emergencies
3 Credits (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. Restricted to: Community Colleges only.
Prerequisite(s): OEEM 214 and consent of instructor.

OEEM 218. Pediatric Advance Life Support for the Healthcare Provider
1 Credit (1)
Identify and respond to life threatening pediatric emergencies. Taught using the American Heart Association guidelines for course completion. Graded S/U.
Prerequisite: OEEM 101.

OEEM 219. Advance Cardiac Life Support for the Healthcare Provider
1 Credit (1)
Identify and respond to life threatening cardiac emergencies. Taught using the American Heart Association guidelines for course completion. Graded S/U.
Prerequisite: OEEM 101.

OEEM 230. EMT-Paramedic Clinical Experience I
3 Credits (9P)
Assigned clinical experiences in patient assessment and specific management techniques. Successful completion includes minimum required hours and completion of course objectives. Restricted to majors. Requires a C or better to pass.
Prerequisite: consent of instructor.

OEEM 231. EMT-Paramedic Clinical Experience II
3 Credits (9P)
Assigned clinical experiences in patient assessment and specific management techniques. Successful completion includes minimum required hours and completion of course objectives. Requires a "C" or better to pass. May be repeated up to 3 credits. Consent of Instructor required.
Prerequisite(s)/Corequisite(s): OEEM 230. Restricted to: OEMS,OEEM majors. Restricted to Community Colleges campuses only.

OEEM 240. EMT-Paramedic Field Experience I
3 Credits (9P)
Advanced prehospital skills and knowledge. Successful completion of at least the minimum required hours and course objectives. Restricted to majors. Requires a C or better to pass.
Prerequisite: consent of instructor.

OEEM 241. EMT-Paramedic Field Experience II
3 Credits (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.
Prerequisite(s)/Corequisite(s): OEEM 240. Requires a C- or better to pass.
OEEM 242. EMT-Paramedic Field Internship
3 Credits (9P)
Emphasis on total patient care responsibility and team leadership skills. Successful completion includes meeting the minimum hours required and course objectives. Pre/ Consent of Instructor required. Restricted to: OEEM majors. Restricted to Community Colleges campuses only.
Prerequisite(s): OEEM 231, OEEM 241.

OEEM 243. EMT-Paramedic Preparation for Practice
2 Credits (2)
Comprehensive final program testing to prepare for licensing examination. Requires a "C" or better to pass. May be repeated up to 2 credits. Consent of Instructor required. Restricted to: EMS, OEEM majors. Restricted to Community Colleges campuses only.
Prerequisite(s): OEEM 242.

OEEM 253. Critical Care Emergency Medical Transport Program
6 Credits (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. Restricted to: Community Colleges only.
Prerequisite(s): Licensed Paramedic, Registered Nurse or Registered Respiratory Therapist with one or more years experience.

OEET- ELECTRICAL TRADES (OEET)

OEET 110. Basic Electricity and Electronics
4 Credits (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 120. Basic Motor Controls
5 Credits (2+6P)
Developing schematics and wiring simple manual and electromechanical control devices.
Prerequisite: OEET 110 or consent of instructor.

OEET 151. Electrical Apprenticeship I
6 Credits (6)
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 Credits (6)
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 Credits (6)
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 Credits (6)
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 205. National Electric Code
3 Credits (3)
Interpretation and application of the National Electric Code.
Prerequisite: OEET 110.

OEET 251. Electrical Apprenticeship V
6 Credits (6)
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 Credits (6)
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 Credits (6)
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 Credits (6)
Miscellaneous topics for the journeyperson 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 255. Special Topics
1-6 Credits
Topics to be announced in the Schedule of Classes.

OEGR-DIGITAL GRAPHIC TECH (OEGR)

OEGR 221. Cooperative Experience I
1-3 Credits
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. Restricted to majors. Graded S/U.
Prerequisite: consent of instructor.
OEGS—GEOGRAPHIC INFO SYS (OEGS)

OEGS 181. Introduction to Principles of Geographic Information Systems 4 Credits (3+3P)
This course will introduce students to fundamental software capabilities of geographic information systems (GIS), along with the underlying conceptual framework. Topics include origins, development, and methods of cartography, components of a GIS, the nature and characteristics of spatial data, methods of data capture and sources of data, review of typical GIS operations and applications. Producing useful, aesthetically pleasing maps will be an integral part of the course. ArcGIS software will be used for this course. May be repeated up to 4 credits.
Prerequisite(s): OEGS 181.

OEGS 291. Special Topics in Geographic Information Systems 1-3 Credits (1-3)
Topics to be announced in the Schedule of Classes. May be repeated up to 12 credits. Restricted to Community Colleges campuses only.

OETS—TECHNICAL STUDIES (OETS)

OETS 100. Industrial/Construction Safety 2 Credits (2)
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. Restricted to Dona Ana and Carlsbad campuses.

OETS 102. Career Readiness Certification Preparation 1 Credit (1)
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 Grading (S/U, Audit). May be repeated up to 3 credits. S/U Grading (S/U, Audit).

OETS 103. Technical Career Skills 4 Credits (4)
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 Credits (4)
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 117. Writing for Technicians 3 Credits (3)
Instruction in the skills for developing clear, written descriptions of processes and procedures used by technicians in various fields. Emphasis on correct grammar, logical organization, and receiving audience. Focuses on clarity, structure, and concise writing methods. Does not substitute for ENGL 111G. Restricted to: Community Colleges only.

OETS 118. Mathematics for Technicians 3 Credits (2+2P)
Analysis and problem solving of technical problems using measuring instruments and techniques of arithmetic, algebra, geometry, and trigonometry. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): Grade of "C-" or better in OETS 104 or CCDM 103 N, or appropriate placement test score.

OETS 120. Business Fundamentals 3 Credits (3)
Instruction in the skills for basic business concepts used by technicians in various fields. Emphasis placed on basic business concepts; business ownership including marketing, management, accounting, and customer services; interpersonal communication; and basic computer concepts including word processing, spreadsheets, and presentation software. Restricted to Community Colleges campuses only.

OETS 255. Special Topics Technical Studies 1-6 Credits
Topics to be announced in the Schedule of Classes. Restricted to: Community Colleges only.
Prerequisite(s): Consent of instructor.

PHED—PHYSICAL EDUCATION

PHED 1110. Dance: 1 Credit (1)
Individual sections vary based on topic content; "audience"; type or level of participation. May be repeated up to 6 credits.
Learning Outcomes
1. Varies

PHED 1230. Individual Sport: 1 Credit (1)
Individual sections vary based on topic content; "audience"; type or level of participation. May be repeated up to 6 credits.
Learning Outcomes
1. Varies

PHED 1290. Team Sport: 1 Credit (1)
Individual sections vary based on topic content; "audience"; type or level of participation. May be repeated up to 6 credits.
Learning Outcomes
1. Varies

PHED 1310. Swim I: 1 Credit (1)
Individual sections vary based on topic content; "audience"; type or level of participation. May be repeated up to 6 credits.
Learning Outcomes
1. Varies
PHED 1320. Aqua Fit:
1 Credit (1)
Individual sections vary based on topic content; "audience"; type or level of participation. May be repeated up to 6 credits.
Learning Outcomes
1. Varies

PHED 1410. Yoga:
1 Credit (1)
Individual sections vary based on topic content; "audience"; type or level of participation. May be repeated up to 6 credits.
Learning Outcomes
1. Varies

PHED 1430. Pilates:
1 Credit (1)
Individual sections vary based on topic content; "audience"; type or level of participation. May be repeated up to 6 credits.
Learning Outcomes
1. Varies

PHED 1510. Training:
1 Credit (1)
Individual sections vary based on topic content; "audience"; type or level of participation. May be repeated up to 6 credits.
Learning Outcomes
1. Varies

PHED 1620. Fitness:
1 Credit (1)
Individual sections vary based on topic content; "audience"; type or level of participation. May be repeated up to 6 credits.
Learning Outcomes
1. Varies

PHED 1630. Career Fitness:
1 Credit (1)
Individual sections vary based on topic content; "audience"; type or level of participation.
Learning Outcomes
1. Varies

PHED 1670. Aerobics:
1 Credit (1)
Individual sections vary based on topic content; "audience"; type or level of participation. May be repeated up to 6 credits.
Learning Outcomes
1. Varies

PHED 1710. Martial Arts:
1 Credit (1)
Individual sections vary based on topic content; "audience"; type or level of participation. May be repeated up to 6 credits.
Learning Outcomes
1. Varies

PHED 1830. Running:
1 Credit (1)
Individual sections vary based on topic content; "audience"; type or level of participation.
Learning Outcomes
1. Varies

PHED 1910. Outdoor Experience
1 Credit (1)
Individual sections vary based on topic content; "audience"; type or level of participation. May be repeated up to 6 credits.
Learning Outcomes
1. Varies

PHED 2996. Special Topics
1-3 Credits
Specific subjects to be announced in the Schedule of Classes. Each offering will carry appropriate subtitle. May be repeated for a maximum of 6 credits.
Learning Outcomes
1. Varies

PHIL-PHILOSOPHY (PHIL)

PHIL 1115G. Introduction to Philosophy
3 Credits (3)
In this course, students will be introduced to some of the key questions of philosophy through the study of classical and contemporary thinkers. Some of the questions students might consider are: Do we have free will? What is knowledge? What is the mind? What are our moral obligations to others? Students will engage with and learn to critically assess various philosophical approaches to such questions.
Learning Outcomes
1. Comprehend and differentiate between various philosophical approaches to questions within fields such as metaphysics, epistemology, ethics, and aesthetics.
2. Critically evaluate various philosophical arguments and positions.

PHIL 1120G. Logic, Reasoning, & Critical Thinking
3 Credits (3)
The purpose of this course is to teach students how to analyze, critique, and construct arguments. The course includes an introductory survey of important logical concepts and tools needed for argument analysis. These concepts and tools will be used to examine select philosophical and scholarly texts.
Learning Outcomes
1. Comprehend components of arguments.
2. Acquire a general understanding of the essential logical concepts needed for argument analysis, such as validity, soundness, deduction, and induction.
3. Critically assess arguments with an aim toward identifying what constitutes effective and reasonable argument strategies.
4. Learn to identify common logical fallacies.
5. Apply knowledge of argumentation principles to philosophical and scholarly texts.
PHIL 1140G. Quest for God  
3 Credits (3)  
An effort to understand the religious life; a consideration of some of the traditional approaches to God and what it means to be religious.  

Learning Outcomes  
1. Identify and describe theories regarding religion  
2. Develop and enhance your critical thinking skills, particularly in the evaluation of arguments about the truth or applicability of particular religious or secular viewpoints.  
3. Analyze the teachings of world religions by describing their similarities and differences.  
4. Explain the beliefs, practices, and ethical standards of the major world religions as well as emerging religious movements.  
5. While traditional expressions of each faith are emphasized, students will learn how each religion evolved historically and spiritually as well as the contemporary ideas and practices of each religion.

PHIL 1145G. Philosophy, Law, and Ethics  
3 Credits (3)  
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.  

Learning Outcomes  
1. The aim of this course is to familiarize students with some of the ethical and philosophical issues that arise in connection with laws/legality in general and criminal and constitutional law in the U.S. in particular.  
2. It examines issues in moral philosophy, political philosophy, and philosophy of law.  
3. A question to which we repeatedly return is whether the law does and/or ought to have some necessary relation to the demands of justice and morality. Among the topics we’ll cover are: What is a law? Natural law vs. positive law and legal positivism vs. natural law theory; Utilitarian, divine command, Kantian, and natural law theories of moral rightness/wrongness; The distinction between the normative and the non-normative; Is there a moral duty to obey the law? Plato’s Crito and R.P. Wolff’s “philosophical anarchism.”; J.S. Mill and classical liberalism; Mill’s “harm principle” (“the state should restrict the liberty of competent adults via the criminal law only to prevent them from wrongfully harming other persons”); Legal paternalism. Should the state make it harder for citizens to smoke tobacco and/or marijuana, for their own good? Should voluntary euthanasia be legal? Is there a constitutional “right to die”? How should judges determine the meaning of vaguely worded constitutional requirements (e.g. “free exercise of religion,” no “unreasonable search and seizure,” no “cruel and unusual punishment,” etc.)? Originalist vs. nonoriginalist approaches; The First Amendment, free speech, and freedom of religion; The death penalty and “cruel and unusual punishment”; The insanity defense in criminal law; Does the 14th Amendment’s requirement of “equal protection” under the law compel states to recognize same sex marriage?; The Fourth Amendment and its prohibition of “unreasonable search and seizure.”

PHIL 1155G. Philosophy of Music  
3 Credits (3)  
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 2110G. Introduction to Ethics  
3 Credits (3)  
This course introduces students to the philosophical study of morality and will explore questions concerning our human obligations to others and related issues. Students may be asked to relate various approaches to ethics to present-day ethical debates and their own lives.  

Learning Outcomes  
1. Differential between various ethical theories, which may include virtue ethics, deontology, and consequentialism.  
2. Critically evaluate various ethical theories and positions.

PHIL 2230G. Philosophical Thought  
3 Credits (3)  
In this course, students will grapple with some of the key questions of philosophy through the study of classical and contemporary thinkers. Students will become familiar with the perennial problems in subfields of philosophy such as metaphysics, epistemology, ethics, and aesthetics. They will learn to approach these problems both critically and sympathetically.  

Learning Outcomes  
1. Comprehend and differentiate between various philosophical approaches to questions within fields such as metaphysics, epistemology, ethics, and aesthetics.  
2. Critically evaluate various philosophical arguments and positions.  
3. Identify the differences that characterize the major subfields of philosophy.
PHLS-PUBLIC HEALTH SCIENCES (PHLS)

PHLS 1110G. Personal Health & Wellness
3 Credits (3)
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.

Learning Outcomes
1. Students will identify, describe and explain human health behaviors and how they are influenced by social structures, institutions, and processes within the contexts of complex and diverse communities. Students should: Develop an understanding of self and the world by examining content and processes used by social and behavioral sciences to discover, describe, explain, and predict human behaviors and social systems.
2. Students will articulate how beliefs, assumptions, and values are influenced by factors such as politics, geography, economics, culture, biology, history, and social institutions. Students should: Enhance knowledge of social and cultural institutions and the values of their society and other societies and cultures in the world.
3. Students will describe ongoing reciprocal interactions among self, society, and the environment. Students should: Understand the interdependent nature of the individual, family/social group, and society in shaping human behavior and determining quality of life.
4. Students will apply the knowledge base of the social and behavioral sciences to identify, describe, explain, and critically evaluate relevant issues, ethical dilemmas, and arguments. Students should: Articulate their role in a global context and develop an awareness and appreciation for diverse value systems in order to understand how to be good citizens who can critically examine and work toward quality of life within a framework of understanding and justice.

PHLS 2110. Foundations of Health Education
3 Credits (3)
Role and responsibility of the health educator with emphasis on small group dynamics, oral and written communication skills, building community coalitions and introduction to grant writing. Taught with PHLS 375. Cannot receive credit for both PHLS 2110 and PHLS 375. May be repeated up to 3 credits.

Prerequisite(s): PHLS 1110G, or consent of instructor.

Learning Outcomes
1. Define health, three levels of prevention, health education and health promotion, and describe the major determinants of health.
2. Describe the 7 major areas of responsibility, major competencies and sub-competencies of a professional health educator and the CHES's possible roles in various community health settings.
3. Describe and examine the historical context and development of the profession of health education.
4. Identify and critique major processes and practices of health education programming.
5. Describe the steps involved in conducting needs assessments, program and intervention planning, implementation, and program evaluation.
6. Identify, examine and describe elected health behavior change theories and models and explore possible applications in health education practice.
7. Describe and discuss the process of community mobilization and building of a community coalition.
8. Identify health issues and describe effective methods and strategies in health education advocacy.
9. Describe and discuss the future trends and issues in the professional preparation and practice of professional health educators.

PHLS 2120. Essentials of Public Health
3 Credits (3)
The course will focus on principles and major areas if public health, including ecological and total personal concept of health care system, epidemiological approaches to disease prevention and control. Consent of Instructor required.

Learning Outcomes
1. Understand the sources of public health data, and how to interpret that information.
2. Access existing health related data.
3. Analyze health related data.
4. Identify populations for health education programs.
5. Incorporate data analysis and principles of community organization.
6. Interpret results from evaluation and research.
7. Infer implications from findings for future health-related activities.
8. Have a basic understanding of health topics faced by various populations.
**PHYS-PHYSICS (PHYS)**

**PHYS 1111. Introductory Computational Physics**
3 Credits (2+2P)
Introduction to computational techniques for the solution of physics-related problems.

*Prerequisite(s):* a C- or better in MATH 1220G or MATH 1250G or MATH 1511G.

**PHYS 1112. Introductory Physics for the Health Sciences**
3 Credits (3)
Algebra-level introduction to topics required for the Health Sciences including basic mechanics (including sound, mechanical waves and fluids), heat and thermodynamics, electricity and magnetism, optics and electromagnetic waves, atomic and nuclear physics and applications to medical imaging. Restricted to Community Colleges campuses only.

*Prerequisite(s):* MATH 1215 or Equivalent.

**Learning Outcomes**
1. The objective of the course is to familiarize the student with the concepts and methods used in the underlying physics associated with various Health Science disciplines.
2. The course will demonstrate how the basic principles of mechanics, thermodynamics, electricity, magnetism, electromagnetic waves and optics can be applied to solve particular problems in Health Sciences applications. Introduces the student to selected topics in modern physics including quantum physics, atomic and nuclear physics.

**PHYS 1115G. Survey of Physics with Lab**
4 Credits (3+3P)
Overview of the concepts and basic phenomena of physics. This course provides a largely descriptive and qualitative treatment with a minimum use of elementary mathematics to solve problems. No previous knowledge of physics is assumed. Includes laboratory.

**Learning Outcomes**
1. Demonstrate converting units and other aspects of dimensional analysis in the working of numerical problems.
2. Apply principles of Newtonian mechanics to the case of static and dynamic incompressible fluids, including Archimedes' and Bernoulli's principles.
3. Apply principles of Newtonian mechanics to the motion of a rigid body in two dimensions.
4. Apply Newton's theory of gravitation to circular orbits and demonstrate understanding of how Kepler's laws of planetary motion provide the empirical foundation for Newton's theory.
5. Apply the mathematics of vectors to the principles of Newtonian mechanics.
6. Apply principles of Newtonian mechanics to the case of static and dynamic incompressible fluids, including Archimedes' and Bernoulli's principles.

**PHYS 1125G. Physics of Music**
4 Credits (3+2P)
Introduction for non-science majors to basic concepts, laws, and skills in physics, in the context of a study of sound, acoustics, and music.

**Learning Outcomes**
1. Demonstrate converting units and other aspects of dimensional analysis in the working of numerical problems.
2. Apply basic classical mechanics to static and dynamic fluids, including Archimedes’ principle and Bernoulli’s principle.
3. Apply the general properties of waves to simple models of musical instruments.
4. Demonstrate knowledge of basic operating principles of wind, string, and percussion instruments.
5. Demonstrate knowledge of how objectively measurable properties of sound waves correspond to the perceptions of pitch, loudness, and timbre.
6. Demonstrate understanding of the description of vibrations and waves in terms of Fourier’s Theorem and normal modes.
7. Demonstrate understanding of vocalization in terms of physical principles such as resonance and fluid dynamics.
8. Demonstrate understanding of how the ear works.

**PHYS 1230G. Algebra-Based Physics I**
3 Credits (3)
An algebra-based treatment of Newtonian mechanics. Topics include kinematics and dynamics in one and two dimensions, conservation of energy and momentum, rotational motion, equilibrium, and fluids.

**Learning Outcomes**
1. Demonstrate converting units and other aspects of dimensional analysis in the working of numerical problems.
2. Apply principles of Newtonian mechanics to predict and account for simple phenomena modeled by the motion of particles in one and two dimensions.
3. Apply principles of Newtonian mechanics to predict and account for simple phenomena modeled by the motion of a rigid body in two dimensions.
4. Apply Newton’s theory of gravitation to circular orbits and demonstrate understanding of how Kepler’s laws of planetary motion provide the empirical foundation for Newton’s theory.
5. Apply the mathematics of vectors to the principles of Newtonian mechanics.
6. Apply principles of Newtonian mechanics to the case of static and dynamic incompressible fluids, including Archimedes’ and Bernoulli’s principles.
PHYS 1230L. Algebra-Based Physics I Lab
1 Credit (1)
A series of laboratory experiments associated with the material presented in PHYS 1230G.
Prerequisite(s)/Corequisite(s): PHYS 1230G.
Learning Outcomes
1. Explain the scientific method.
2. Test ideas using modern laboratory equipment.
4. Use computers to analyze and report laboratory results.
5. Draw appropriate conclusions from quantitative scientific observations.
6. Accurately and clearly communicate the results of scientific experiments.

PHYS 1240G. Algebra-Based Physics II
3 Credits (3)
The second half of a two semester algebra-based introduction to Physics. This course covers electricity, magnetism and optics.
Prerequisite(s): a C- or better in PHYS 1230G or PHYS 2230G.
Learning Outcomes
1. Be able to state Coulomb's Law and Gauss's laws and apply them.
2. Apply the concepts of electric charge, electric field and electric potential to solve problems.
3. Analyze simple DC and AC circuits.
4. Apply the Lorentz force to solve problems.
5. Apply Faraday's law of induction (and Lenz's law) to solve problems.
6. Apply ray optics to practical lens systems such as microscopes and corrective lenses.
7. Apply the wave nature of light to the phenomena of reflection, refraction, and diffraction.

PHYS 1240L. Algebra-Based Physics II Lab
1 Credit (1)
A series of laboratory experiments associated with the material presented in PHYS 1240.
Prerequisite(s)/Corequisite(s): PHYS 1240G.
Learning Outcomes
1. Explain the scientific method.
2. Test ideas using modern laboratory equipment.
4. Use computers to analyze and report laboratory results.
5. Draw appropriate conclusions from quantitative scientific observations.
6. Accurately and clearly communicate the results of scientific experiments.

PHYS 1310G. Calculus-Based Physics I
3 Credits (3)
A calculus level treatment of classical mechanics and waves, which is concerned with the physical motion concepts, forces, energy concepts, momentum, rotational motion, angular momentum, gravity, and static equilibrium. May be repeated up to 3 credits.
Prerequisite(s): a C- or better in MATH 1511G or higher.
Learning Outcomes
1. Describe the relationships among position, velocity, and acceleration as functions of time.
2. Use the equations of kinematics to describe motion under constant acceleration.
3. Analyze linear motion using Newton's laws, force, and linear momentum.
4. Analyze rotational motion using torque and angular momentum.
5. Analyze motion using work and energy.

PHYS 1310L. Calculus -Based Physics I Lab
1 Credit (3P)
A series of laboratory experiments associated with the material presented in Calculus-based Physics I. Students will apply the principles and concepts highlighting the main objectives covered in coursework for Calculus-based Physics I.
Prerequisite(s)/Corequisite(s): PHYS 1310G.
Learning Outcomes
1. Develop a reasonable hypothesis.
2. Work effectively as part of a team.
3. Take measurements and record measured quantities to the appropriate precision.
4. Estimate error sources in experimental techniques.
5. Apply appropriate methods of analysis to raw data, including using graphical and statistical methods via computer-based tools.
6. Determine whether results and conclusions are reasonable.
7. Present experimental results in written form in appropriate style and depth.
8. Experience the relationship between theory and experiment.

PHYS 1311. Problems in Calculus-Based Physics I
0.5-1 Credits (.5-1)
This is a supplemental course for Calculus-based Physics I. May be repeated up to 1 credits.
Corequisite(s): PHYS 1310G.
PHYS 1320G. Calculus -Based Physics II
3 Credits (3)
A calculus level treatment of classical electricity and magnetism. It is strongly recommended that this course is taken at the same time as Calculus-Based Physics II laboratory. May be repeated up to 3 credits.
Prerequisite(s)/Corequisite(s): A C- or better in PHYS 2110 or PHYS 1310G and MATH 1521G or higher.

Learning Outcomes
1. Apply the concepts of electric charge, electric field and electric potential to solve problems.
2. Sketch the electric field in the vicinity of point, line, sheet, and spherical distributions of static electric charge.
3. Sketch the magnetic field in the vicinity of line, ring, sheet, and solenoid distributions of steady current.
4. Describe the relationship between electric field and electric potential.
5. Calculate the Lorentz force on a moving charge for simple geometries of the fields and use it to analyze the motion of charged particles.
6. Apply the integral forms of Maxwell's equations.
7. Calculate the energy of electromagnetic fields.
8. Analyze DC circuits.

PHYS 1320L. Calculus -Based Physics II Lab
1 Credit (3P)
A series of Laboratory experiments associated with the material presented in Calculus-Based Physics II. Students will apply the principles and concepts highlighting the main objectives covered in coursework for Calculus-Based Physics II.
Prerequisite(s)/Corequisite(s): PHYS 1320G. Prerequisite(s): A C- or better in PHYS 2110L or PHYS 1310L.

Learning Outcomes
1. Develop a reasonable hypothesis.
2. Work effectively as part of a team.
3. Take measurements and record measured quantities to the appropriate precision.
4. Estimate error sources in experimental techniques.
5. Apply appropriate methods of analysis to raw data, including using graphical and statistical methods via computer-based tools.
6. Determine whether results and conclusions are reasonable.
7. Present experimental results in written form in appropriate style and depth.
8. Experience the relationship between theory and experiment

PHYS 1321. Problems in Calculus-Based Physics II
0.5-1 Credits (.5-1)
This is a supplemental course for Calculus-based Physics II.
Corequisite(s): PHYS 1320G.

PHYS 2110. Mechanics
3 Credits (3)
Newtonian mechanics.
Prerequisite(s)/Corequisite(s): MATH 1511G or higher.

PHYS 2110L. Experimental Mechanics
1 Credit (3P)
Laboratory experiments associated with the material presented in PHYS 2110. Science majors.
Prerequisite(s)/Corequisite(s): PHYS 2110.

PHYS 2111. Supplemental Instruction to PHYS 2110
0.5-1 Credits (.5-1)
This Optional workshop as a supplement to PHYS 2110. The tutorial sessions focus on reasoning and hands-on problem solving. May be repeated up to 1 credits.
Corequisite(s): PHYS 2110.

Learning Outcomes
1. analyze real world phenomena by constructing simplified idealized models and appropriate mathematical reasoning to make predictions or explain a phenomena or function.
2. use multiple representations to build, interpret and communicate the model, including visual representations such as sketches or diagrams, mathematical expressions, graphs, or text.
3. in the contexts of concepts and physical laws discussed in PHYS 2110, apply quantitative analysis to solve problems, including the use of scientific notation, unit conversion and vector algebra.
4. self-check reasonableness of assumptions and solutions, making use of limiting cases or symmetry arguments.
5. develop learning strategies and use metacognition to promote thinking in the discipline.

PHYS 2120. Heat, Light, and Sound
3 Credits (3)
Calculus-level treatment of thermodynamics, geometrical and physical optics, and sound. May be repeated up to 3 credits.
Prerequisite(s): a C- or better in PHYS 2110 or PHYS 1310G, and MATH 1511G or higher.

PHYS 2120L. Heat, Light, and Sound Laboratory
1 Credit (3P)
Laboratory experiments associated with the material presented in PHYS 2120. Science majors.
Prerequisite(s)/Corequisite(s): PHYS 2120. Prerequisite(s): a C- or better in PHYS 2110L or PHYS 1310L.

PHYS 2121. Supplemental Instruction to PHYS 2120
0.5-1 Credits (.5-1)
This optional workshop supplements PHYS 2120 "Heat, Light, and Sound". Students actively apply concepts and methods introduced in PHYS 2120 to problem solving and quantitative analysis. May be repeated up to 1 credits.
Corequisite(s): PHYS 2120.

Learning Outcomes
1. analyze real world phenomena by constructing simplified idealized models and appropriate mathematical reasoning to make predictions or explain a phenomena or function.
2. use multiple representations to build, interpret and communicate the model, including visual representations such as sketches or diagrams, mathematical expressions, graphs, or text.
3. in the contexts of concepts and physical laws discussed in PHYS 2121, apply quantitative analysis to solve problems involving wave propagation and interference, geometric optics, heat transfer and thermodynamics.
4. self-check reasonableness of assumptions and solutions, making use of limiting cases or symmetry arguments.
5. develop learning strategies and use metacognition to promote thinking in the discipline.
PHYS 2140. Electricity and Magnetism
3 Credits (3)
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. May be repeated up to 3 credits.
Prerequisite(s)/Corequisite(s): MATH 1521G. Prerequisite(s): a C- or better in PHYS 2110 or PHYS 1310G, and MATH 1511G or higher.

PHYS 2140L. Electricity & Magnetism Laboratory
1 Credit (3P)
Laboratory experiments associated with the material presented in PHYS 2140.
Prerequisite(s)/Corequisite(s): PHYS 2140. Prerequisite(s): a C- or better in PHYS 2110 or PHYS 1310G.

PHYS 2141. Supplemental Instruction to PHYS 2140
0.5-1 Credits (.5-1)
Optional workshop as a supplement to PHYS 2140. The tutorial sessions focus on reasoning and hands-on problem solving. May be repeated up to 1 credits.
Corequisite(s): PHYS 2140.

PHYS 2230G. General Physics for Life Science I
3 Credits (3)
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. May be repeated up to 3 credits.
Prerequisite(s): A C or better in MATH 1215 or higher.

Learning Outcomes
1. Modeling: analyze real-world phenomena by deciding what information is relevant and constructing simplified idealized models and appropriate mathematical reasoning to make predictions or explain phenomena or function; use multiple representations to build, interpret and communicate the model, including visual representations such as sketches or diagrams, mathematical expressions, graphs, or text; critique assumptions and determine how to test the validity of a model and use the comparison of experimental data and prediction to refine the model.

2. Conceptual understanding: describe the motion of any object in terms of displacement, velocity, and acceleration; analyze external forces acting on an object and determine if a system is in equilibrium or relate the net force to changes in motion; predict or analyze motion using conservation laws for energy and momentum; analyze forces and torques for a rigid object in static equilibrium; for a static fluid determine pressure and the buoyant force; apply idealized models of fluid flow to the circulatory system; describe the properties of pressure waves known as sound, apply the model of standing waves to musical instruments and discuss how sound is used to sense the environment; predict qualitative changes in the internal energy of a thermodynamic system when energy has been transferred due to work or heat and justify those predictions using conservation of energy (First law of thermodynamics). Identify which heat transfer processes occur in a described situation.

3. Quantitative reasoning: use a physics problem-solving strategy (Identify relevant concepts; Introduce and study simplified models; Use symmetry arguments; Establish the relation between known and unknown quantities; Calculate a quantitative result using appropriate mathematical methods; Self-check reasonableness of assumptions and solutions); use scientific notation accurately and convert units if necessary.

4. Communicating scientific information: interpret or generate graphs or other visual representations and be able to switch between various representations including text, mathematical description, or diagrams.

PHYS 2230L. Laboratory to General Physics for Life Science I
1 Credit (1)
Laboratory experiments in topics associated with material presented in PHYS 2230G.
Prerequisite(s)/Corequisite(s): PHYS 2230G. Restricted to Las Cruces campus only.
PHYS 2231. Supplemental Instruction to General Physics for Life Sciences I
1 Credit (1)
This optional workshop supplements Physics for Life Sciences I. The tutorial sessions focus on reasoning and hands-on problem solving. May be repeated up to 1 credits.
Corequisite(s): PHYS 2230G.

Learning Outcomes
1. analyze real world phenomena by constructing simplified idealized models and appropriate mathematical reasoning to make predictions or explain a phenomena or function.
2. use multiple representations to build, interpret and communicate the model, including visual representations such as sketches or diagrams, mathematical expressions, graphs, or text.
3. in the contexts of concepts and physical laws discussed in PHYS 2230, apply quantitative analysis to solve problems, including the use of scientific notation, unit conversion and vector algebra.
4. self-check reasonableness of assumptions and solutions, making use of limiting cases or symmetry arguments.
5. develop learning strategies and use metacognition to promote thinking in the discipline.

PHYS 2240G. General Physics for Life Science II
3 Credits (3)
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. May be repeated up to 3 credits.
Prerequisite(s): a C- or better in PHYS 1230G or PHYS 2230G, and MATH 1220G or higher.

Learning Outcomes
1. Modeling: analyze real world phenomena by constructing simplified idealized models (an abstract description) that allow making predictions or explaining a phenomena or function; use multiple representations to build and communicate the model, including sketches, mathematical expressions, diagrams or graphs; decide what information is relevant and critique assumptions and models of others; determine how to test the validity of a model and use comparison of experimental data and prediction to refine the model.
2. Conceptual understanding: electric or magnetic fields can be used to describe interactions of objects that contain charges with their surroundings; changes that occur as a result of interactions are constrained by conservation laws (such as conservation of energy, conservation of charge or conservation of nucleon number); many macroscopic properties of materials can be described using microscopic models or related to their geometry; electromagnetic radiation can be modeled as a wave or as fundamental particles (photons); the direction of propagation of a wave may change when it encounters a boundary surface between two media of different properties (reflection or refraction); the spontaneous radioactive decay of nuclei is described by probability.
3. Quantitative reasoning: apply quantitative analysis and appropriate mathematical reasoning to describe or explain phenomena; use scientific notation accurately and convert units if necessary.
4. Communicating scientific information: interpreter generate graphs or other visual representations (e.g. field lines, equipotential lines) and be able to switch between various representations including text, mathematical description, or diagrams.

PHYS 2240L. Laboratory to General Physics for Life Science II
1 Credit (1)
Laboratory experiments in topics associated with material presented in PHYS 2240.
Prerequisite(s)/Corequisite(s): PHYS 2240G. Restricted to Las Cruces campus only.

PHYS 2241. Supplemental Instruction to General Physics for Life Sciences II
1 Credit (1)
This optional workshop is a supplement to Physics for Life Science II. The tutorial sessions focus on reasoning and hands-on problem solving. May be repeated up to 1 credits.
Corequisite(s): PHYS 2240G.

Learning Outcomes
1. analyze real world phenomena by constructing simplified idealized models and appropriate mathematical reasoning to make predictions or explain a phenomena or function.
2. use multiple representations to build, interpret and communicate the model, including visual representations such as sketches or diagrams, mathematical expressions, graphs, or text.
3. in the contexts of concepts and physical laws discussed in PHYS 2240, apply quantitative analysis to solve problems, including the use of scientific notation, unit conversion and vector algebra.
4. self-check reasonableness of assumptions and solutions, making use of limiting cases or symmetry arguments.
5. develop learning strategies and use metacognition to promote thinking in the discipline.

PHYS 2996. Special Topics
1-3 Credits
Topics to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits.

Learning Outcomes
1. Varies

PHYS 2997. Independent Study
1-3 Credits
Individual analytical or laboratory studies directed by a faculty member. May be repeated for a maximum of 6 credits.
Prerequisite: consent of instructor.

Learning Outcomes
1. Varies

PL-S-PARALEGAL SERVICES (PL S)

PL S 160. Legal System for the Paralegal
3 Credits (3)
Introduction to the court system, administrative agencies, functions of law offices, and professional conduct and legal ethics. Restricted to Community Colleges only.
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 ACT or 35-75 on Compass, successful complete of CCDE 105N or CCDE 110N; for those scoring 12 or below on the ACT standard score in English or 34 or below on the Compass, successful completion of CCDE 105N & CCDE 110N.

PL S 161. Legal Terminology
3 Credits (3)
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 Credits (3)
The Virtual Law Office class is a 'hands-on', project oriented course designated 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.
Prerequisite(s): PL S 160.

PL S 180. Constitutional Law for the Paralegal
3 Credits (3)
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 Credits (3)
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
3 Credits (3)
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. Restricted to: Community Colleges only.
Prerequisite(s): PL S 160.

PL S 203. Immigration Law
3 Credits (3)
Survey of the basics of immigration law including the rights and obligations of citizenship and the naturalization process.
Prerequisite: PL S 160.

PL S 221. Internship I
2-4 Credits
Work experience that directly relates to a student's major field of study that provides the student an opportunity to explore career paths and apply knowledge and theory learned in the classroom. Internships can be paid or unpaid. Students are supervised/evaluated by both the employer and the instructor. Restricted to Community Colleges campuses only.
Prerequisite(s): PL S 274.

PL S 222. Internship II
1-3 Credits
Continuation of PL S 221. Each credit requires specified number of hours of on-the-job work experience. Restricted to Community Colleges campuses only.
Prerequisite(s): PL S 221.

PL S 231. The Law of Commerce for the Paralegal
3 Credits (3)
Law of contracts, negotiable instruments, bank transfers, secured transactions, debtor-creditor relations, agency, and business types and their formation. Students will study the relevant statutes as well as draft documents associated with these types of legal practice. Restricted to: Community Colleges only.
Prerequisite(s): PL S 160.

PL S 272. Bankruptcy Law for the Paralegal
3 Credits (3)
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 Credits (3)
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 1110G.

PL S 275. Tort and Insurance for the Paralegal
3 Credits (3)
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 Credits (3)
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 Credits (3)
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 Credits (3)
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 Credits (3)
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 Credits (3)
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
1-3 Credits (1-3)
Individual studies directed by consenting faculty with prior approval by department head. Restricted to Community Colleges campuses only.
Prerequisite(s): PL S 160.
POLS-POLITICAL SCIENCE

POLS 1110G. Introduction to Political Science
3 Credits (3)
This course covers fundamental concepts in political science, such as political theories, ideologies, and government systems.
Learning Outcomes
1. Construct reasoned civic discourse to advocate a stance or examine alternate positions.
2. Identify fundamental concepts and theories in political science.
3. Analyze data and information in order to gain a deeper understanding of the material.
4. Articulate how the public influence and are influenced by politics.
5. Identify and compare government systems from democracy to authoritarian, as well as models of analysis of contemporary international relations.

POLS 1111. Introductory Government Seminar
1 Credit (1)
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.
Learning Outcomes
1. This course is designed for the “beginning” government major.
2. Its goal is to improve your educational experience at the university and within the Department of Government. In this class we hope to develop some basic skills necessary for successful completion of a degree in Government.
3. These include the skills of critical reading, critical writing, oral presentation and research methods.
4. Additionally, we will use this seminar to introduce you to Government faculty, to plan your government degree and to acquaint you with the services and opportunities the department and the university has to offer.
5. Finally, we hope to begin the discussion of where you will go next, when you complete your degree in Government.

POLS 1120G. American National Government
3 Credits (3)
This course explains the role of American national government, its formation and principles of the Constitution; relation of state to the national government; political parties and their relationship to interest groups. This course also explains the structure of the legislative, executive, and judicial branches.
Learning Outcomes
1. Explain the historical and political foundations of the government of the United States;
2. Explain the precursors to, and the development and adoption of the United States Constitution;
3. Explain the United States federal system, the basics of federalism, and the changing relationship of state and federal power;
4. Describe the power, structure and operation of the main institutions of government, namely the legislative, executive, judicial, and the federal bureaucracy;
5. Explain the development and role of political parties and interest groups;
6. Identify the constitutional basis of civil rights and civil liberties and their changing interpretation; and
7. Describe the role of demographics, public opinion and the media in American politics.

POLS 1130G. Issues in American Politics
3 Credits (3)
This course is designed to introduce the students to the contemporary study of American political issues. The course analysis of government policies, examining various approaches to the economy, democracy and the structure and the function of American political institutions.
Learning Outcomes
1. Explain the basic themes and concepts of political science and their application to contemporary issues.
2. Explain the major forces, interests, and institutions of American democratic politics.
3. Describe and define how beliefs, assumptions, and values are influenced by factors such as politics, geography, economics, culture, biology, history, and social institutions.
POLS 2120G. International Relations  
3 Credits (3)  
This course covers the analysis of significant factors in world politics, including nationalism, national interest, political economy, ideology, international conflict and collaboration, balance of power, deterrence, international law, and international organization.  
**Learning Outcomes**  
1. Explain the interrelationships between countries and people in the world,  
2. Demonstrate an awareness of current events in the world.  
3. Describe several theories of International Relations  
4. Explain and identify theories of power and decision making among states in the world.  
5. Describe and evaluate issues that relate to International Politics, and how individuals are affected by them.  
6. Describe the role of Intergovernmental Organizations in International Politics.  
7. Identify the role war plays in International Politics.  
8. Explain how economics is intertwined with International Politics.  
9. Demonstrate an understanding of role of international terrorism and its impacts on global diplomacy.  
10. Articulate how beliefs, assumptions, and values are influenced by factors such as politics, geography, economics, culture, history, government, and social institutions.

POLS 2996. Special Topics  
3 Credits (3)  
Specific topics to be announced in Schedule of Classes. Community Colleges only. May be repeated for a maximum of 12 credits.  
**Learning Outcomes**  
1. Varies

PORT 1110. Portuguese I  
3 Credits (3)  
Designed for students with no previous exposure to Portuguese, this course develops basic listening, speaking, reading, and writing skills. This is an introductory course aimed at teaching the student to communicate in Portuguese in everyday situations.  
**Learning Outcomes**  
1. Students can communicate and exchange information about familiar topics using phrases and simple sentences, sometimes supported by memorized language.  
2. Students can handle most short social interactions in everyday situations by asking and answering simple questions.  
3. Students can write short messages and notes on familiar topics related to everyday life.  
4. Students can often understand words, phrases, and simple sentences related to everyday life.  
5. Students can recognize pieces of information and sometimes understand the main topic of what is being said.  
6. Students can understand familiar words, phrases, and sentences within short and simple texts related to everyday life.  
7. Students can sometimes understand the main idea of what they have read.  
8. Students can make connections between beliefs, behaviors and cultural artifacts of the Portuguese-speaking world, and make informed cross-cultural comparisons.

PORT 1120. Portuguese II  
3 Credits (3)  
A continuation of Portuguese I, students will develop a broader foundation in skills gained during the first semester, including understanding, speaking, reading and writing Portuguese. Students will also gain more in-depth knowledge of Portuguese-speaking cultures.  
**Prerequisite:** C or better in PORT 1110 or consent of instructor.  
**Learning Outcomes**  
1. Students can participate in conversations on a number of familiar topics using simple sentences.  
2. Students can handle short social interactions in everyday situations by asking and answering simple questions.  
3. Students can write about familiar topics and present information using a series of simple sentences.  
4. Students can understand the main idea in short, simple messages and presentations on familiar topics.  
5. Students can understand the main idea of simple conversations that they overhear.  
6. Students can understand the main idea of short and simple texts when the topic is familiar.  
7. Students can begin to narrate and describe simple events in the past.  
8. Students can make broader connections between beliefs, behaviors and cultural artifacts of the Portuguese-speaking world, and make informed cross-cultural comparisons.
PSYC-PSYCHOLOGY

PSYC 1110G. Introduction to Psychology
3 Credits (3)
This course will introduce students to the concepts, theories, significant findings, methodologies, and terminology that apply to the field of psychology.
Learning Outcomes
1. Explain how the scientific method and psychological research methodologies are used to study the mind and behavior.
2. Recall key terms, concepts, and theories in the areas of neuroscience, learning, memory, cognition, intelligence, motivation and emotion, development, personality, health, disorders and therapies, and social psychology.
3. Explain how information provided in this course can be applied to life in the real world.
4. Identify the major theoretical schools of thought that exist in psychology as they relate to the self, the culture, and the society.

PSYC 2221. Applied Psychology
3 Credits (3)
Explanation of the psychological principles of everyday living. Emphasizes motivation, learning of intelligent behavior, and applications of psychology to social issues. Community Colleges only.
Learning Outcomes
1. The objective of this course is to orient students to the personality characteristics, interpersonal competencies, ethical decision-making skills, and other professional traits associated with pursuing a career in a helping profession.
2. Identify the requirements for becoming a helping professional, characteristics of a skilled helper, and cultural factors that impact helping professionals.
3. Explain your personal strengths and weaknesses as a potential helper.
4. Demonstrate appropriate helping strategies based upon the special characteristics of clients.
5. Compare the capabilities that individual, family, group, community, and online interventions offer you as a future helper.
6. Identify the ethical and legal issues that impact helping professionals.
7. Analyze the potential impact of your future ethical and professional standards as a helping professional.
8. Explain how your role as a helping professional is impacted by your professional affiliation and ethical principles.
9. Analyze how worsening personal problems and increasing stress can impact the kinds and quality of our responses to life and the people around us.

PSYC 2230. Psychology of Adjustment
3 Credits (3)
This course focuses on the individual's adjustment to society, and the application of psychological principles to the understanding of adjustment.
Learning Outcomes
1. Explain the internal and external factors associated with the psychology of adjustment.
2. Evaluate contributions from psychology to adjustment concepts and processes.
3. Describe the different explanations of how individuals adjust to their environments.
4. Describe how self-identities develop and how they affect relations with others.
5. Identify resources available for assistance with adjustment-related concerns.

PSYC 2311. A Study of Substance Abuse through Learning
3 Credits (3)
Physiological and psychological impact of drug use on human behavior. Emphasizes practical applications of intervention and prevention in the community. Community Colleges only.
Learning Outcomes
1. Through attendance of a Drug Court Hearing students will be knowledgeable of the role of Drug Courts in prevention and treatment of drug addiction.
2. Through completion of Service Learning and field assignment students will be able to discuss the role of AA/NA in Recovery Treatment.
3. Through readings and community service learning outing students will be able to discuss Alcohol/Drug Recovery Treatment Relapse Prevention.
4. Through readings and community service learning outing students will be able to discuss the role of AA/NA in Recovery Treatment.
5. Through completion of Service Learning and field assignment students will be able to discuss the role of AA/NA in Recovery Treatment.
6. Through attendance of a Drug Court Hearing students will be knowledgeable of the role of Drug Courts in prevention and treatment of drug addiction.
RADT-RADIOLOGIC TECHNOLOGY (RADT)

RADT 100. Introduction to Radiologic Technology and Patient Care
2 Credits (2)
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. Restricted to: Community Colleges only. Restricted to Majors.

RADT 101. Radiographic Positioning I
4 Credits (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 Credits (2+6P)
Continuation of RADT 101. Includes skull, gastrointestinal, urinary, reproductive, biliary systems, and more advanced skeletal positions. Includes positioning lab and clinical observation. Restricted to: Community Colleges only. Restricted to Majors.
Prerequisite: RADT 101.

RADT 103. Introduction to Radiographic Imaging
3 Credits (2+2P)
Provides the student with an in-depth knowledge of radiographic exposure technique and the factors affecting radiographic image quality. Includes lab experiments. Restricted to majors.

Learning Outcomes
1. Students will demonstrate the ability to safely produce quality diagnostic radiographic images. Students will demonstrate effective communication skills. Students will analyze radiographic images for technical and positioning accuracy to make modifications as needed.

RADT 104. Special Radiologic Modalities
2 Credits (2)
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 103.

RADT 105. Radiographic Physics and Equipment
3 Credits (3)
Fundamentals of radiographic physics and imaging theory. Includes the atom, electromagnetism, x-ray production and interactions, x-ray circuitry, digital fluoroscopic units, digital x-ray equipment and quality assurance/control; with brief overview of mammography, computed tomography (CT), and MRI imaging. Restricted to: Community Colleges only. Restricted to Majors.
Prerequisite/Corequisite: RADT 103.

Learning Outcomes
1. Students will have knowledge of and be able to operate radiographic equipment to produce quality diagnostic radiographic images Students will demonstrate radiation safety application through ALARA Principles

RADT 106. Independent Study
1-6 Credits (1-6)
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 154. Radiographic Anatomy and Physiology
3 Credits (3)
Basic A&P 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: RADT majors. Restricted to: Community Colleges only.
Prerequisite(s): AHS 153 or AHS 140 or BIOL 2210 or BIOL 1130, or consent of instructor.

RADT 156. Independent Study
3 Credits (3)
Skill development in the operation of computed tomographic equipment, focusing on routine protocols, image quality, and quality assurance and radiation protection. May be repeated up to 3 credits. Restricted to: CTOM or RADT majors. Restricted to Community Colleges campuses only.

RADT 200. Radiation Biology and Protection
2 Credits (2)
Biological effects of ionizing radiation on cells and tissues. Includes radiation measurements, policies and protection measures for self, patients, and others. Restricted to majors. Restricted to: Community Colleges only.
Prerequisite(s): RADT 103.

RADT 201. Clinical Education I
7 Credits (32P)
Supervised practice in a radiology department under direct supervision of a registered technician. Includes film critiques.
Prerequisite: RADT 105.

Learning Outcomes
1. Students will demonstrate the ability to safely produce diagnostic radiographic images. Students will be able to appropriately position patients, identify radiographic anatomy and pathological conditions. Students will demonstrate effective communication skills. Students will accurately document/record data in accordance with clinical site policies and procedures.

2. Students will demonstrate the ability to use independent judgement. Students will analyze radiographic images for technical and positioning accuracy to make modifications as needed. Students will conduct themselves in a professional manner to function effectively as a member of the healthcare team. Students will identify various opportunities for professional growth within medical imaging sciences.
RADT 202. Clinical Education II
11 Credits (33P)
Continuation of RADT 201. Student will work under indirect supervision of registered personnel.
Prerequisite(s): RADT 201.

Learning Outcomes
1. Students will demonstrate the ability to safely produce diagnostic radiographic images. Students will be able to appropriately position patients, identify radiographic anatomy and pathological conditions. Students will demonstrate effective communication skills. Students will accurately document/record data in accordance with clinical site policies and procedures. Students will demonstrate the ability to use independent judgement. Students will analyze radiographic images for technical and positioning accuracy to make modifications as needed. Students will conduct themselves in a professional manner to function effectively as a member of the healthcare team. Students will identify various opportunities for professional growth within medical imaging sciences.

RADT 203. Clinical Education III
11 Credits (33P)
Continuation of RADT 202 to include special rotations in advanced imaging modalities.
Prerequisite(s): RADT 202.

Learning Outcomes
1. Students will demonstrate the ability to safely produce diagnostic radiographic images. Students will be able to appropriately position patients, identify radiographic anatomy and pathological conditions. Students will demonstrate effective communication skills. Students will accurately document/record data in accordance with clinical site policies and procedures. Students will demonstrate the ability to use independent judgement. Students will analyze radiographic images for technical and positioning accuracy to make modifications as needed. Students will conduct themselves in a professional manner to function effectively as a member of the healthcare team. Students will identify various opportunities for professional growth within medical imaging sciences.

RADT 205. Radiographic Image Critique
1 Credit (1)
Review of radiographs produced in clinical settings to evaluate anatomy and technical issues. Restricted to majors.
Prerequisite: RADT 201.

RADT 206. Applied Radiographic Procedures
2 Credits (1+3P)
Advanced course which integrates the principles and techniques of radiologic technology. Restricted to majors.
Prerequisite: RADT 202.

RADT 207. Cross Sectional Anatomy for Medical Imaging
3 Credits (3)
Anatomic relationships that are present under various sectional orientations as depicted by computed tomography or magnetic resonance imaging. May be repeated up to 3 credits. Restricted to: CTOM or RADT majors. Restricted to Community Colleges campuses only.

RADT 208. Clinical I (Computed Tomography)
3 Credits (9P)
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. Direct supervision is provided by the clinic professional. May be repeated up to 3 credits. Restricted to: RADT or CTOM majors. Restricted to Community Colleges campuses only.

RADT 209. Clinical II (Computed Tomography)
3 Credits (9P)
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. Direct supervision is provided by the clinic professional. (Capstone Course). May be repeated up to 3 credits. Restricted to: CTOM or RADT majors. Restricted to Community Colleges campuses only.

RESP - RESPIRATORY THERAPY (RESP)

RESP 110. Respiratory Therapy I
3 Credits (3)
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 Credits (2)
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 115. Respiratory Therapy Pharmacology
3 Credits (3)
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
4 Credits (4)
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. May be repeated up to 4 credits. Students must be admitted into program to enroll in this course. Restricted to Community Colleges campuses only.
Prerequisite(s): RESP 110. Corequisite(s): RESP 120 L.

RESP 120 L. Respiratory Therapy II Lab
2 Credits (2)
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. Students must be admitted to the program to enroll in this course. Corequisite(s): RESP 120. Restricted to: Community Colleges only. Restricted to RESP majors.
Prerequisite(s): RESP 110, RESP 110L and RESP 112.

RESP 124. Respiratory Therapy II Clinical
3 Credits (9P)
Supervised practice and application in a hospital setting. Requires a C or better to remain in program. Students must be admitted into program to enroll in this course. Restricted to: Community Colleges only. Restricted to RESP majors.
Prerequisite(s): RESP 110, RESP 110L and RESP 112. Corequisite(s): RESP 120 and RESP 120L.
RESP 155. Respiratory Therapy Special Topics
1-4 Credits
Topics to be announced in the Schedule of Classes. May be repeated for a maximum of 10 credits. Consent of instructor required. Restricted to: Community Colleges only. Restricted to RESP majors.
Prerequisite(s): Admission to program.
RESP 210. Respiratory Therapy III
2 Credits (2)
Introduction to adult, mechanical, neonatal ventilator theory and concepts of critical care medicine. Requires a C or better to remain in program. Students must be admitted into program to enroll in this course. Restricted to: Community Colleges only. Restricted to RESP majors.
Prerequisite(s): RESP 115, RESP 120, RESP 120L, and RESP 124.
Corequisite(s): RESP 210L.
RESP 210 L. Respiratory Therapy III Lab
2 Credits (2)
Advanced practice procedures using mechanical ventilation devices. Requires a C or better to remain in program. Students must be admitted into program to enroll in this course. Restricted to: Community Colleges only. Restricted to RESP majors.
Prerequisite(s): RESP 115, RESP 120, RESP 120 L, and RESP 124.
Corequisite(s): RESP 210.
RESP 224. Respiratory Therapy IV Clinical
3 Credits (9P)
Continuation of RESP 124. Emphasis on mechanical ventilators. Requires a C or better to remain in program. Restricted to: Community Colleges only. Restricted to RESP majors.
Prerequisite(s): Admission to program, and RESP 115, RESP 120, RESP 120 L, and RESP 124.
Responsive to: RESP 224.
Corequisite(s): RESP 230, RESP 230L, RESP 233, and RESP 234.
RESP 230. Respiratory Therapy V
3 Credits (3)
Continuation of RESP 215. Emphasis on special modalities. Requires a C or better to remain in program. Restricted to: Community Colleges only. Restricted to RESP majors.
RESP 230 L. Respiratory Therapy V Lab
2 Credits (2)
Advanced practice and procedures of respiratory care. Requires a C or better to remain in program. Restricted to: Community Colleges only. Restricted to RESP majors.
RESP 233. Respiratory Therapy Cardiopulmonary
2 Credits (2)
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 RESP majors.
RESP 234. Respiratory Therapy V Clinical
3 Credits (3)
Continuation of RESP 214. Emphasis on special modalities. Restricted to: Community Colleges only. Restricted to RESP majors.
RESP 240. Respiratory Therapy VI
3 Credits (3)
Advanced theory of hemodynamics, neonate, pediatric, and new specialties that apply to respiratory care. Requires a C or better to remain in program. Students must be admitted into program to enroll in this course. Restricted to: Community Colleges only. Restricted to RESP majors.
Prerequisite(s): RESP 230, RESP 230L, RESP 233 and RESP 234.
Corequisite(s): RESP 240L.
RESP 240 L. Respiratory Therapy VI Lab
2 Credits (6P)
Advanced laboratory practice and procedures. Requires a C or better to remain in program. Students must be admitted into program to enroll in this course. Restricted to: Community Colleges only. Restricted to RESP majors.
Prerequisite(s): RESP 230, RESP 230L, RESP 233 and RESP 234.
Corequisite(s): RESP 240.
RESP 242. Pediatric Advanced Life Support (PALS)
1 Credit (1)
Etiology, diagnosis, clinical manifestations, and management of cardiopulmonary disorders related to respiratory care. Restricted to: RESP majors.
Corequisite(s): RESP 230.
RESP 243. Respiratory Therapy Neonatal Resuscitation
1 Credit (1)
Advanced practice of the neonatal resuscitation and certification. Students must be admitted into program to enroll in this course. Restricted to: Community Colleges only. Restricted to RESP majors.
Prerequisite(s): RESP 230, RESP 230L, RESP 233, and RESP 234.
Corequisite(s): RESP 240 and RESP 244.
RESP 244. Respiratory Therapy VI Clinical
3 Credits (9P)
Clinical experience on special modalities. Requires a C or better to remain in program. Students must be admitted into program to enroll in this course. Restricted to: Community Colleges only. Restricted to RESP majors.
Prerequisite(s): RESP 230, RESP 230L, RESP 233 and RESP 234.
Corequisite(s): RESP 240.
RESP 255. Respiratory Therapy Special Topics
1-4 Credits
Specific subjects to be announced in the Schedule of Classes. May be repeated for a maximum of 4 credits. Consent of instructor required. Restricted to: Community Colleges only. Restricted to RESP majors.
Prerequisite(s): Admission to program.

RGSC-RANGE SCIENCE (RGSC)

RGSC 1110. The Range Science Profession
1 Credit (1)
Introduction to scientific disciplines and career opportunities in rangeland science and management.

Learning Outcomes
1. To introduce students to the Range Science program and to a variety of career opportunities in Range Science.
2. To develop an individualized course curriculum that prepares the student to achieve their career goals.
3. To examine opportunities to gain practical work experience through internships and cooperative employment.
RGSC 2110. Introduction to Rangeland Management  
3 Credits (3)  
This course covers the principles of managing and understanding pasture and rangelands. Plant physiology and ecology, plant communities and rangeland sustainability and how they relate to livestock production and wildlife management will be discussed. Restricted to: Main campus only.  
Learning Outcomes  
1. Understand rangeland management operations.  
2. Identify rangeland plants.  
3. Gain a perspective of watershed management.  
4. Discuss the management of rangeland resources.  
5. Understand the process of rangeland evaluation through a broad understanding of monitoring and production of these rangelands.  
6. Gain a perspective of the correlation of rangelands and the economic principles guiding resource management.  
7. Understand the process of rangeland condition.  
8. Understand the concepts of stocking rates and usage of rangelands.  
9. Gain a broad perspective of different classes of land ownership; Tribal, federal, private and state.  
10. Recognize vegetative communities, ecological sites, plant physiology and application to rangeland management considerations.  

RGSC 2996. Special Topics  
1-4 Credits  
Specific subjects and credits announced in the Schedule of Classes. Maximum of 4 credits per semester and a grand total of 9 credits.  
Learning Outcomes  
1. Varies  

SIGN-SIGN LANGUAGE  
SIGN 1110. American Sign Language I  
3 Credits (3)  
American Sign Language I is an introductory level language course in the language of the American Deaf Culture. Content includes ASL vocabulary and conversational skills; linguistic features of ASL; and skills in narrative/storytelling. In-class activities, comprehension and expressive examinations, narrative and storytelling assignments in addition to semester projects are venues for students to demonstrate their learning. In addition, Deaf Culture and Deaf Community issues are addressed.  
Learning Outcomes  
1. Engage in basic conversations using ASL, such as introducing oneself, exchanging personnel information, and talking about one's surroundings.  
2. Demonstrate the use of grammatical structures, including spatial referencing, use of classifiers, role shifting, ASL syntax, and non-manual signals (NMS).  
3. Demonstrate clear sign production using an understanding of sign parameters: handshapes, movement, location, palm orientation, and NMS in targeted lexicon.  
4. Demonstrate the use of basic ASL vocabulary and expressions necessary for conversations about real-life situations.  
5. Evaluate and provide feedback concerning peers' and one's own uses of ASL.  
6. Develop culturally-appropriate behaviors and conversation strategies within a variety of contexts for interacting with people who are Deaf.  
7. Demonstrate effective use of comprehension and expressive ASL skills through narrative and/or storytelling activities.  
8. Describe issues of the American Deaf community and Culture.  

SIGN 1120. American Sign Language II  
3 Credits (3)  
American Sign Language II is a continuation course that builds on concepts and skills developed in American Sign Language I. Students gain further exposure to ASL structure and grammar, and Deaf Culture and the Deaf community. Emphasis is on increasing students' ability to comprehend other signers and express themselves with more elaboration when conversing or presenting in ASL.  
Prerequisite: SIGN 1110 or consent of instructor.  
Learning Outcomes  
1. Further develop basic conversational skills in ASL, taking on more complicated topics.  
2. Apply knowledge of ASL grammar, including classifiers, spatial referencing and agreement, role shifting, and non-manual markers.  
3. Develop ASL vocabulary, fingerspelling, number, narrative and storytelling skills.  
4. Evaluate and provide feedback concerning peers' and one's own uses of ASL.  
5. Demonstrate effective use of comprehension and expressive ASL skills through conversation, discussion, narrative and/or storytelling activities.  
6. Demonstrate knowledge and appreciation of the American Deaf community and ASL.  
7. Through first-hand experience in the American Deaf community and ASL, relate and reflect on perspectives of the community.
SIGN 2110. American Sign Language III
3 Credits (3)
This is an intermediate level course in American Sign Language (ASL). Expected areas of intermediate skill and knowledge development include: language comprehension and production, conversational use, narratives, ASL language features and further knowledge of and interaction with Deaf culture and the Deaf community.
Prerequisite: SIGN 1120.
Learning Outcomes
1. Demonstrate intermediate ASL vocabulary, conversation and narrative/storytelling skills.
2. Demonstrate fundamental ASL features including visual/spatial orientation, constructed dialogue and action, spatial referencing, classifiers, non-manual behaviors and syntax/word order.
3. Demonstrate appropriate use of cultural behaviors and conversational strategies.
4. Translate written and spoken English to ASL and vice versa.
5. Self-evaluate and provide feedback to peers concerning ASL usage.
6. Examine the culture of the American Deaf community through engaging in community activities and its language.

SMET-SCIENCE/MATH/ENG/TECH (SMET)

SMET 101. Introduction to Science, Mathematics, Engineering, and Technology
1 Credit (1)
An introductory course for science, mathematics, engineering, or technology students, emphasizing introduction to their disciplines. Development of critical thinking and academic success skills for technical disciplines, as well as degree planning for the major.
Learning Outcomes
1. Apply the scientific method of constructing and testing hypotheses. Design and conduct an experiment using Radio Jove. Apply astrobiological knowledge to solve human problems. Develop competence in appropriate scientific laboratory techniques.

SMET 102. Introduction to Engineering Design.
1 Credit (1)
Fundamental concepts of engineering design developed through analysis of case studies and hands-on design projects.
Learning Outcomes
1. Identify assumptions within a given context and be able to predict outcomes through data analysis. Obtain, interpret and analyze numerical information through the use of appropriate tables, diagrams, and algorithms. Develop competency in conveying astrobiological knowledge through laboratory reports and/or written assignments following proper APA documentation style. Design antenna configurations to increase the frequency of the radio Jove.

SMET 201. Research for Visiting Community College Students
1 Credit (1)
Research experience for visiting community college students. Consent of instructor required. Restricted to: Main campus only.

SOCI-SOCIOLOGY

SOCI 1110G. Introduction to Sociology
3 Credits (3)
This course will introduce students to the basic concepts and theories of sociology, as well as to the methods utilized in sociological research. The course will address how sociological concepts and theories can be utilized to analyze and interpret our social world, and how profoundly our society and the groups to which students belong influence them. Students will be given the opportunity to challenge their “taken-for-granted” or “common sense” understandings about society, social institutions, and social issues. Special attention will also be paid to the intimate connections between their personal lives and the larger structural features of social life. In addition, the implications of social inequalities, such as race/ethnicity, gender, and social class will be central to the course’s examination of social life in the United States.
Learning Outcomes
1. Define sociological perspectives and the contributions that sociological knowledge can bring to the social sciences.
2. Understand the sociological imagination and explain the relationships between social structures, social forces and individuals.
3. Demonstrate the ability to apply the perspectives of symbolic interactionist theory, conflict theory, and structural-functionalist theory to qualitative and/or quantitative data.
4. Understand and explain intersectionality and the connections between race, class, gender, disability, sexual identity and other forms of structural inequality.

SOCI 2230. Sociology of Sexuality
3 Credits (3)
This course explores all aspects of human sexuality from a sociological perspective. Topics include, but are not limited to, sex work, intimate relationships, sexual response, political movements, power, and the social construction of sexuality. The course also considers how various social statuses such as ethnicity, gender, and social class intersect with sexuality.
Learning Outcomes
1. Identify the central research questions, theories, and methodologies used in the study of human sexuality.
2. Identify and describe biological, cultural, social, and psychological sexual behaviors and response across the lifespan.
3. Identify and describe trends and changes that influence sexual attitudes and values in the U.S. and globally.
4. Describe how sexuality is influenced by contextual factors, such as race/ethnicity, gender, socioeconomic status, disability, and nationality.
SOCI 2240. Sociology of Intimate Relationships and Family
3 Credits (3)
This course provides an overview of contemporary intimate relationships and families from sociological perspectives. We will examine intimate relationships and families as social constructions whose meanings have changed over time and from place to place. This course will aid students in developing a greater understanding of intimate relationships and families as institutions in contemporary U.S. society. Intersections of race, class, gender, sexual orientation, nationality, and other factors within these institutions will be addressed. Community Colleges only.
Learning Outcomes
1. Explain the sociological approaches to researching intimate relationships and families.
2. Describe important sociological research findings concerning intimate relationships and families.
3. Explain how intimate and familial relationships are affected by multiple intersecting inequalities and ongoing events in other social institutions.

SOCI 2261. Issues in Death and Dying
3 Credits (3)
Major personal and social issues related to the process of dying in our culture. Community Colleges only.
Learning Outcomes
1. be able to understand the diversity of the death experience and the various options available in coping with death and bereavement as shown by the student's participation in class discussions and field trips.
2. better understand death and dying as social phenomena as shown by the student's reaction papers.
3. have taken an in-depth look at her or his own death with a researched paper. Comprehension will be shown by the student's grade on the paper.

SOCI 2310G. Contemporary Social Problems
3 Credits (3)
This course studies the nature, scope, and effects of social problems and their solutions. The course will concentrate on sociological perspectives, theories, and key concepts when investigating problems, such as inequality, poverty, racism, alienation, family life, sexuality, gender, urbanization, work, aging, crime, war and terrorism, environmental degradation, and mass media. This course is designed to build students' sociological understanding of how sociological approaches attempt to clarify various issues confronting contemporary life, as well as how sociologists view solutions to these problems.
Learning Outcomes
1. Identify and explain major social problems in the United States, and how social problems become constructed as problems.
2. Describe and analyze policy related solutions associated with social problems from various perspectives.
3. Critically examine social problems through the use of sociological theories, methods, and empirical techniques.
4. Identify connections, both national and global, between social problems and social inequalities (e.g., social class, race/ethnicity, and gender/sexuality).
SOWK-SOCIAL WORK

SOWK 2110G. Introduction to Human Services & Social Work
3 Credits (3)
This course is for students who are interested in social welfare issues and/or are considering entering a social service profession. The course presents an overview of social problems, issues and trends, and the network of social agencies developed to address these concerns. The course examines the influence of personal and professional values and ethics on the helping relationship. The concept of social welfare will be discussed from a social work perspective (with an emphasis on social justice), and students will gain a basic understanding of social work in U.S. society, social work career opportunities, and contemporary issues facing social workers. Approaches relevant to work with individuals, families, groups and communities are presented, with special emphasis on Hispanic and Indigenous populations of New Mexico and the Southwest.

Learning Outcomes
1. Explain the interactions of social institutions, cultural factors, dimensions of identity, and environment with the human development and behavior of individuals.
2. Demonstrate knowledge of the social work profession’s focus on addressing contemporary social issues in the United States.
3. Describe the mission and services provided by social service agencies at the regional, national, and global levels.
4. Demonstrate a basic understanding of the social work profession, its history, career opportunities, and contemporary issues facing social workers in the United States today.
5. Recognize how students’ knowledge, skills, and attitudes impact their competence as helping professionals.

SOWK 2111. Women's Issues in Social Work
3 Credits (3)
Examines gender-specific social problems and their identification and resolution through the use of social agencies and community resources. Community Colleges only.

Learning Outcomes
1. Understand the commonalties among all women, identifying commonalties and differences among oppressed and dominant groups, recognize multiple oppressions, and respect diversity while conducting social work practice through readings, class discussions, and/or written assignments.
2. Identify the various needs of women as individuals, family members and community members through readings, class discussions, and/or written assignments.
3. Demonstrate skills in working effectively with diverse issues involving women with an emphasis on building strengths, interdependence, self-direction, shared power, and cooperation through experiential exercises, written assignments, companion book, and instructor presentations.
4. Demonstrate skills in addressing issues that affect women such as parental issues, relationship problems, physical abuse, sexual abuse, crime, substance abuse, eating disorders, housing concerns, psychological issues and physical abilities written reports.
5. Understand the importance of and demonstrating skills in caring and empathetic connection in the change process through written assignments, experiential activities in the companion book.
6. Understanding the Importance of the Professionals Self-Care through experiential activities and journaling in the companion book.
SPAN-Spanish (SPAN)

SPAN 1110. Spanish I
4 Credits (4)
Designed for students with little exposure to Spanish, this course develops basic listening, speaking, reading, and writing skills and basic intercultural competence in interpretive, interpersonal, and presentational modes of communication at the Novice Level of proficiency based on ACTFL guidelines. During this course, students perform better and stronger in the Novice Mid level while some abilities emerge in the Novice High range. This is an introductory course aimed at helping the student to communicate in Spanish in everyday familiar situations via recognition and production of practiced or memorized words, phrases, and simple sentences.

Prerequisite(s): language placement and/or assessment by departmental examination.

Learning Outcomes
1. Students can communicate on very familiar topics using a variety of words and phrases that they have practiced and memorized.
2. Students can present information about myself and some other very familiar topics using a variety of words, phrases, and memorized expressions.
3. Students can write short messages and notes on familiar topics related to everyday life.
4. Students can often understand words, phrases, and simple sentences related to everyday life.
5. Students can recognize pieces of information and sometimes understand the main topic of what is being said.
6. Students can understand familiar words, phrases, and sentences within short and simple texts related to everyday life.
7. Students can sometimes understand the main idea of what they have read.

SPAN 1120. Spanish II
4 Credits (4)
Designed for students with some degree of exposure to Spanish in high school and/or at home, this course continues to develop basic listening, speaking, reading, and writing skills and basic intercultural competence in interpretive, interpersonal, and presentational modes of communication based at the Novice High Level of proficiency based on ACTFL guidelines, although a few abilities may emerge in the Intermediate Low Level. Students in this course communicate in Spanish in familiar topics using a variety of words, phrases, simple sentences and questions that have been highly practiced and memorized.

Prerequisite: language placement and/or assessment by departmental examination or a C- or better in SPAN 1110.

Learning Outcomes
1. Students can participate in conversations on a number of familiar topics using simple sentences.
2. Students can handle short social interactions in everyday situations by asking and answering simple questions.
3. Students can present basic information on familiar topics using language they have practiced using phrases and simple sentences.
4. Students can write briefly about most familiar topics and present information using a series of simple sentences.
5. Students can understand the main idea in short, simple messages and presentations on familiar topics.
6. Students can understand the main idea of simple conversations that they overhear.
7. Students can understand the main idea of short and simple texts when the topic is familiar.
SPAN 1210. Elementary Spanish for Heritage Learners I
3 Credits (3)
This is a beginning-level Spanish course designed for students who have a cultural connection to the Spanish language. Some students have had very little exposure to the language and enter the class to develop beginning-level skills. Other students may have grown up hearing the heritage language in the community and may understand some Spanish and speak at a basic level as a result. The objective is to draw upon the connection to the heritage language as a source of motivation and engagement for our learning communities. At the same time, we build upon the language base that students may already have as a result of their heritage learner experience in order to develop new proficiencies in Spanish and reactivate the Spanish that students have learned previously. By the end of this course, students will be able to describe their home, campus surroundings and common activities including cultural traditions. At the same time, students gain cultural competency and develop a critical understanding of their linguistic and cultural background. Students who have previously earned a C or better in SPAN 1110 or SPAN 1120 may not receive credit for this course.

Learning Outcomes
1. Interpersonal Communication: Students can engage in exchanges in culturally appropriate ways using understandable pronunciation on familiar topics using contextualized words, phrases, common idiomatic expressions, and simple sentences.
2. Written expression: Students can write an essay/poem/story/creative sketch/lyric in the target language, and that describes a past (fictional) event to the reader.
3. Interpretive listening: Students can understand familiar questions and statements from simple sentences in conversations.
4. Interpretive reading: Students can identify the topic and some isolated facts from simple sentences in informational and fictional texts.
5. Critical cultural awareness: Students can recognize and explain some of the issues facing bilingual communities in accordance to the instructor expertise and articulation with subsequent courses.

SPAN 1220. Spanish for Heritage Learners II
3 Credits (3)
Spanish as a Heritage Language II is a second semester class designed for students who have developed some basic Spanish proficiency from previous classes and/or from community experiences. This course provides students with the opportunity to develop their proficiency in the four language skills (speaking, listening, reading, and writing). Class activities are designed to strengthen oral communication skills (speaking and listening) through a variety of group activities. By the end of the course students will be able to understand and produce narrations of past events in oral and written Spanish. In order to foster a desire to revitalize and maintain the Spanish language in the US context we attempt to raise students’ critical awareness of what it means to be part of a specific speech community.

Learning Outcomes
1. Interpersonal Communication: Students can engage in basic but authentic conversations through providing and obtaining information, expressing likes and dislikes, describing their daily lives, and narrating simple events in the past.
2. Written expression: Students can write an essay/poem/story/creative sketch/lyric in the target language, and that describes a past (fictional) event to the reader.
3. Interpretive listening: can identify the main idea in short conversations.
4. Interpretive reading: Students can identify the topic and related information from simple sentences in short informational and fictional texts.
5. Critical cultural awareness: Students can recognize and explain some of the issues facing bilingual communities in accordance to the instructor expertise and articulation with previous and subsequent courses.
SPAN 2110. Spanish III
3 Credits (3)
This course is based on the integration of learning outcomes across Interpersonal, Interpretive, and Presentational Modes of Communication at the Intermediate Low Level of proficiency based on ACTFL guidelines. Students accomplish real-world communicative tasks in culturally appropriate ways as they gain familiarity with the target culture(s). This is an intermediate course aimed at helping the student to communicate in Spanish on familiar topics about self, others and everyday life at the same time that they recognize and handle short social interactions in interactions in everyday situations by asking and answering a variety of questions.
Prerequisite: language placement and assessment by departmental examination or C or better in SPAN 1120.
Learning Outcomes
1. Students can participate in conversations on familiar topics using sentences and series of sentences.
2. Students can handle short social interactions in everyday situations by asking and answering a variety of questions.
3. Students can usually say what they want to say about themselves and their everyday life.
4. Students can make presentations on a wide variety of familiar topics using connected sentences.
5. Students can write on a wide variety of familiar topics using connected sentences.
6. Students can understand the main idea in messages and presentations on a variety of topics related to everyday life and personal interests and studies.
7. Students can understand the main idea in conversations that they overhear.
8. Students can understand the main idea of texts related to everyday life and personal interests or studies.

SPAN 2120. Spanish IV
3 Credits (3)
This course is based on the integration of learning outcomes across Interpersonal, Interpretive, and Presentational Modes of Communication at the Intermediate Low Level of proficiency based on ACTFL guidelines. Students accomplish real-world communicative tasks in culturally appropriate ways as they gain familiarity with the target culture(s). This is an intermediate course aimed at helping the student to communicate in Spanish on familiar topics about self, others and everyday life at the same time that they recognize and handle short social interactions in interactions in everyday situations by asking and answering a variety of questions.
Prerequisite: language placement and assessment by departmental examination or C or better in SPAN 2110.
Learning Outcomes
1. Students can participate with ease and confidence in conversations on familiar topics.
2. Students can usually talk about events and experiences in various time frames.
3. Students can usually describe people, places, and things.
4. Students can handle social interactions in everyday situations, sometimes even when there is an unexpected complication.
5. Students can make presentations in a generally organized way on school, work, and community topics, and on topics they have researched.
6. Students can make presentations on some events and experiences in various time frames.
7. Students can write on topics related to school, work, and community in a generally organized way.
8. Students can write some simple paragraphs about events and experiences in various time frames.
9. Students can easily understand the main idea in messages and presentations on a variety of topics related to everyday life and personal interests and studies.
10. Students can usually understand a few details of what they overhear in conversations, even when something unexpected is expressed.
11. Students can sometimes follow what they hear about events and experiences in various time frames.
12. Students can easily understand the main idea of texts related to everyday life, personal interests, and studies.
13. Students can sometimes follow stories and descriptions about events and experiences in various time frames.
SPAN 2210. Spanish for Heritage Learners III  
3 Credits (3)  
Intermediate Spanish for Heritage Speakers I is a third semester course designed for students who have been raised in a Spanish-speaking environment and speak, or understand, some Spanish as a result of hearing it in the home, and in the community by family, friends, and neighbors. Students in this course will continue to develop their ability to narrate events in the past and will be able to describe hypothetical situations. Students will also develop their ability to express wishes, desires, and necessities. This course will help the student build confidence in their Spanish abilities and expand the language use in the areas of writing, reading, oral production and listening comprehension. In order to foster a desire to revitalize and maintain the Spanish language we attempt to raise students' critical awareness of wider issues facing Spanish speakers in the US context.  
Learning Outcomes  
1. Interpersonal Communication: Students can exchange information on a wide variety of familiar topics in which the students use appropriate vocabulary to describe their daily lives and narrate events in the past with some degree of ease and confidence.  
2. Written expression: Students can write an essay/poem/story/creative sketch/lyric in the target language, and that effectively conveys a series of past (fictional) events to the reader that may include recent and distant past.  
3. Interpretive listening: Students can identify the main idea and key information in short straightforward conversations.  
4. Interpretive reading: Students can understand the main idea and key information in short straightforward informational and fictional texts.  
6. Critical cultural awareness: Students can recognize and explain some of the issues facing bilingual communities in accordance to the instructor expertise and articulation with previous and subsequent courses.

SPED-SPECIAL EDUCATION (SPED)  
SPED 2130. Society  
3 Credits (3)  
Development of culturally responsive learning strategies, skills and utilization of support services, to enhance academic achievement. Restricted to: Main campus only.  

SPED 2996. Topics  
3 Credits (3)  
Offered under various subtitles that indicate the subject matter to be covered. May be repeated 3 times for a maximum of 9 credits.  
Learning Outcomes  
1. Varies

SPHS-SPEECH & HEARING SCIENCE  
SPHS 2110. Introduction to Communication Disorders  
3 Credits (3)  
This introductory course provides an overview of common speech, language, and hearing disorders in children and adults including etiologies, characteristics, prevention, identification, assessment and intervention. The course provides an overview of the field of speech-language pathology and audiology.  
Learning Outcomes  
1. Describe normal human communication anatomy and processes as they relate to speech and language production.  
2. Describe the nature of speech, language, and hearing disorders and differences.  
3. Describe the principles of prevention, assessment and intervention of communication disorders.  
4. List requirements for licensure, certification, and other relevant professional credentials.  
5. Exhibit basic knowledge of contemporary professional issues in speech-language pathology.  
6. List possible psychosocial implications of various communication disorders.  
7. Identify cultural, educational, legal, and ethical issues related to communication disorders.  
8. Describe the scope of practice of speech-language pathologists and audiologists.

SPMD-SPORTS MEDICINE  
SPMD 1110. Introduction to Athletic Training  
3 Credits (3)  
Introduction to the principles of athletic training. May be repeated up to 3 credits. Consent of Instructor required. Restricted to Las Cruces campus only.  
Learning Outcomes  
1. Understand the historical development of athletic training and sports medicine.  
2. Understand the knowledge and experiences needed to become a Certified Athletic Trainer.  
3. Understand the specific responsibilities and duties of an athletic trainer.  
4. Understand the diverse jobs settings within the profession of athletic training.  
5. Understand the relationship between the athletic trainer and the sports medicine team.  
6. Understand some of the general and specific injuries and medical conditions that occur in athletics; their causes, signs and symptoms, treatments, rehabilitation, and prevention.  
7. Understand some of the contemporary issues and problems facing the athletic training profession.
Learning Outcomes

3 credits. Consent of Instructor required. Restricted to: Athletic Training and clinical practice. Must maintain a 3.0 GPA. May be repeated up to 4 credits. Consent of Instructor required. Restricted to Las Cruces campus only.

Emphasis is on competencies and proficiencies previously instructed. Athletic training related content and psycho-motor skills are introduced, including but not limited to taking vital signs.

1. Master the fundamentals of word analysis, including the separation of terms into word roots or combining forms, common prefixes, and suffixes.
2. Differentiate types of medical terms and the relationships among terms.
3. Develop a proficiency in the use of physiological and anatomical terms as reflected in medical documents.
4. Master the terms, words, phrases, and symbols that describe the human body in its various states of health and disease, including essential anatomical terms.

SPMD 1195. Clinical Practicum II

3 Credits (3)

Introduction to the clinical aspects of the athletic training education program. Must maintain at least 3.0 GPA. May be repeated up to 4 credits. Consent of Instructor required. Restricted to Athletic Training majors. Restricted to Las Cruces campus only.

Learning Outcomes

1. The Athletic Training Program application procedures.
2. The ability to perform selected taping and wrapping techniques.
3. Knowledge of HIPAA guidelines, pre-participation physical examinations, environmental illnesses, the history of Athletic Training and its governing bodies, Evidence Based Practice and its implications in the field of athletic training, evaluation procedures for the injured athlete, NMSU AT program and its affiliated clinical sites.
4. Proper documentation for the athletic training environment including SOAP notes.
5. The ability to perform selected taping and wrapping techniques.
6. Knowledge of HIPAA guidelines, pre-participation physical examinations, environmental illnesses, the history of Athletic Training and its governing bodies, Evidence Based Practice and its implications in the field of athletic training, evaluation procedures for the injured athlete, NMSU AT program and its affiliated clinical sites.
7. Proper documentation for the athletic training environment including SOAP notes.

SPMD 1180. Medical Terminology

3 Credits (3)

Study of the structure of medical language with emphasis on sports medicine-related terminology. To include analysis and interpretation of medical documentation. Restricted to Las Cruces campus only.

Learning Outcomes

1. Master the fundamentals of word analysis, including the separation of terms into word roots or combining forms, common prefixes, and suffixes.
2. Differentiate types of medical terms and the relationships among terms.
3. Develop a proficiency in the use of physiological and anatomical terms as reflected in medical documents.
4. Master the terms, words, phrases, and symbols that describe the human body in its various states of health and disease, including essential anatomical terms.
SPMD 2130. Emergency Response in Sports Medicine
2 Credits (2)
Designed to provide knowledge and experience in emergency care procedures, blood borne pathogens, and first aid. Students will receive certification in CPR/AED for the Professional Rescuer and in First Aid, upon successful completion of course. May be repeated up to 4 credits. Restricted to Las Cruces campus only.
Prerequisite(s): Consent of Instructor.
Learning Outcomes
1. Identify the individuals involved in the Emergency Response Team
2. Construct the components of an effective emergency Action Plan
3. Assess the scene and patient during an emergency situation
4. Demonstrate proper universal precautions and wound care
5. Demonstrate effective Cardiopulmonary Resuscitation, AED use
6. Demonstrate effective Rescue Breathing Airway Management techniques
7. Demonstrate effective splinting techniques
8. Demonstrate understanding of the techniques utilized in cervical stabilization
9. Identify components of acute care for general medical and orthopedic emergencies.

SPMD 2210. Anatomy and Physiology I
3 Credits (3)
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.
Learning Outcomes
1. The student will learn and identify bones, connective tissue, joints and muscular structures of the human body. The student will study joints and associated structures of the body. The student will learn about skeletal muscle, origins, insertions, and actions. The student will learn about the fundamentals of the nervous system and associated structures. The student will learn about smooth and cardiac muscle and their association actions. The student will learn the structures associated with the cardiovascular system (heart and blood vessels). The student will learn the location of all visceral organs. Evaluation of knowledge is determined through practical identification of anatomical structures via written opened ended exams.

SPMD 2210L. Anatomy and Physiology Laboratory
1 Credit (1P)
Students will engage in activities designed to enhance appreciation of the anatomical structures related to the content areas for SPMD 2210. Restricted to Las Cruces campus only.
Learning Outcomes
1. The student will learn and identify bones, connective tissue, joints and muscular structures of the human body.
2. The student will study joints and associated structures of the body.
3. The student will learn about skeletal muscle, origins, insertions, and actions.
4. The student will learn about the fundamentals of the nervous system and associated structures.
5. The student will learn about smooth and cardiac muscle and their association actions.
6. The student will learn the structures associated with the cardiovascular system (heart and blood vessels).
7. The student will learn the location of all visceral organs.
8. Evaluation of knowledge is determined through practical identification of anatomical structures via written opened ended exams.

SPMD 2250. Fitness for Health and Sport
3 Credits (3)
A study of the fitness needs for health enhancement and sport participation.
Learning Outcomes
1. Recognize the importance of incorporating positive fitness/wellness habits within one's lifestyle in terms of enhancing longevity, disease prevention, and overall quality of life. Examine various physiological benefits and adaptations to such factors as muscular strength, muscular endurance, cardiovascular fitness, flexibility, and body composition when certain stimuli are applied to each. Assessment of these characteristics will be witnessed primarily in practical experiences within the course's laboratory settings. Identify current trends and/or health patterns within society in regards to scientific findings, declination in health habits, and increases in health ailments. Compare various nutritional concepts, specifically proper dietary habits and their impact on weight management aspects. Describe the role physical activity and sport specific training play on competitive athletic performance.
**SPMD 2310. Career Preparation**  
1 Credit (1)  
From concept to implementation: Career exploration, setting up degree plans, finding graduate programs, developing professional resumes, writing letters of application, seeking letters of recommendation, and interview preparation. Graded: S/U Grading (S/U, Audit).  
**Learning Outcomes**  
1. Career opportunities within human movement and allied health fields  
2. Chose both a primary and secondary career of their interest  
3. Search for appropriate graduate schools to match their career choices  
4. Create a plan by aligning their undergraduate curriculum with their career choices  
5. Explore additional education (dual majors, minors, and certifications specific to their chosen field)  
6. Study and create a professional resume  
7. Create a curriculum vita as a historical reference for future job prospects  
8. Write a professional letter of application for jobs and school applications  
9. Learn how to seek "outstanding" letters of recommendation  
10. Study appropriate interview protocol  
11. Practice interviews (one on one, panel and group)

**SUR-SURVEYING (SUR)**

**SUR 143. Civil/Survey Drafting I**  
3 Credits (2+2P)  
Introduction to drafting in the field of Civil Engineering. Drawings, projects, and terminologies related to topographic mapping, contour drawings, plan, and profiles as street/highway layout.  
**Prerequisite:** DRFT 109.  
**Learning Outcomes**  
1. Students will develop a basic knowledge of AutoCad Civil 3D software as they relate to the civil drafting process. Students will become familiar with a basic understanding of computers, drafting and trigonometry is required. Use of long-term projects will be utilized to simulate real-world work environments to aid the understanding and applying vocabulary on surveying drafting plans. An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology

**SUR 222. Introduction to Geomatics**  
3 Credits (2+3P)  
Theory and practice of geomatics as applied to plane surveying in the areas of linear measurements, angle measurements, area determination, differential and trigonometric leveling, and topographic mapping. Crosslisted with: DRFT 222.  
**Prerequisite:** MATH 1250G or MATH 1430G.  
**Learning Outcomes**  
1. Various

**SUR 285. Precise Digital Mapping**  
3 Credits (3)  
Photogrammetric Mapping Principles, digital sensor including optical cameras, terrestrial, surveying control, IMU & GPS integration, stereo photography, analytical triangulation, orthorectification, precision and accuracy of measurement systems, SUAS (Small Unmanned Aerial Vehicles) applications to geospatial data collection and practical applications project flight/pre planning, sensor platform, FAA regulations and restrictions, introduction to laser scanning systems. Restricted to Las Cruces campus only.

**SUR 292. Legal Principles and Boundary Law I**  
3 Credits (3)  
Fundamentals of real property law; principles of land description; survey evidence and procedure in boundary determination, order of importance of conflicting elements; and liability, ethical and professional principles in boundary surveying; contemporary issues in boundary determination.  
**Learning Outcomes**  
1. Understand how the USPLSS was developed and used  
2. Be able to locate and identify USPLSS survey monuments  
3. Be able to apply single and double proportion methods  
4. Be able to subdivide USPLSS sections  
5. Be able to read, write and interpret USPLSS legal descriptions

**SURG-SURGICAL TECHNOLOGY (SURG)**

**SURG 120. Surgical Technology Clinical I**  
2-4 Credits (6P)  
This is a health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. This course is designed to prepare the student to enter the surgical environment. This course provides an introduction to the operating room, observation of surgical procedures, direct participation in the preoperative (pre-op, intra-op, post-op) preparation of individual cases and professional roles and responsibilities of individual members of the surgical team. Direct supervision is provided by the clinical professional. May be repeated up to 4 credits. Students must be admitted into Surgical Technology Program to enroll in this course.  
**Prerequisite(s):** BIOL 2310, BIOL 2210, BIOL 2225, NURS 150.  
**Corequisite(s):** SURG 140, SURG 145.  
**SURG 140. Introduction to Surgical Technology**  
4 Credits (4)  
This is an orientation to surgical technology theory, surgical pharmacology and anesthesia, technology sciences and patient care concepts and is designed to prepare the student to enter the surgical environment with entry-level knowledge necessary to understand patient responses to disease, illness, hospitalization, surgical procedures, commonly used pharmacological and anesthetic agents, and legal, moral, and ethical issues that could be encountered in the surgical environment. Restricted to Community Colleges campuses only.  
**Prerequisite(s):** Admission to Surgical Technology Program; BIOL 2310, BIOL 2225, & NURS 150.
SURG 145. Fundamentals of Perioperative Concepts & Techniques
4-5 Credits (3+3P)
This is an in-depth coverage of perioperative concepts such as aseptic/sterile principles and practice, infectious processes, wound healing and creation and maintenance of the sterile field. This course is designed to prepare the student to enter the surgical environment with entry-level knowledge of aseptic technique principles and practices, the creation and maintenance of the sterile field including equipment, supplies and instrumentation, and basic case preparation and procedures. An introduction to diseases and disease processes that may be displayed by the surgical patient and the patient's bodily responses to disease are also included. May be repeated up to 5 credits.
Prerequisite(s): Admission to Surgical Technology Program, BIOL 2310, BIOL 2210, BIOL 2225, & NURS 150.

SURG 150. Surgical Procedures I
4-5 Credits (3-5+3P)
This course is an introduction to surgical procedures and its related pathologies. Emphasis on surgical procedures related to general, obstetrics/gynecology, genitourinary, otorhinolaryngology and orthopedic surgical specialties incorporating instruments, equipment. It is designed to prepare the student to function actively in the surgical environment with entry-level knowledge of surgical procedures. This course expands the basic foundation principles and combines the study of common surgical procedures to include anatomy, physiology and pathophysiology. Specific patient care concepts, medications, instrumentation, equipment, supplies and complication related to selected surgical procedures will be discussed. Admission to Surgical Technology Program necessary to enroll in the course.
Prerequisite(s): SURG 140, SURG 145, and SURG 120.

SURG 155. Pharmacology for the Surgical Technology
2 Credits (2)
This is an orientation to surgical pharmacology and anesthesia and is designed to prepare the student to enter the surgical environment with knowledge necessary to categorize the classification of drugs, calculate drug dosages and identify the therapeutic use, routes of administration, indications, contraindications and adverse effects of pharmacologic agents used in the perioperative setting. This course is the foundation for the acquisition of program specific competencies as identified by the AST Core Curriculum. Restricted to Carlsbad campus only.

SURG 160. Surgical Procedures II
6 Credits (6)
This an introduction to surgical procedures and related pathologies. Emphasis on surgical procedures related to thoracic, peripheral vascular, plastic/reconstructive, ophthalmology, cardiac and neurological surgical specialties incorporating instruments. The course is designed to prepare the student to continue to function actively in the surgical environment with entry-level knowledge of more complex surgical procedures. This course expands the basic foundation principles and combines the study of complex surgical procedures to include anatomy, physiology, and pathophysiology. Specific patient care concepts, medications, instrumentation, equipment, supplies, and complications related to specific surgical procedures will be discussed. Realities of clinical practice and concepts of death and dying will also be discussed. Admission to Surgical Technology Program necessary to enroll in the course.
Prerequisite(s): SURG 150, SURG 260.

SURG 230. Professional Readiness
2 Credits (2)
This course transitions the student into professional readiness for employment, professional readiness for attaining certification and professional readiness for maintaining certification status. Admission to Surgical Technology Program necessary to enroll in the course.
Prerequisite(s): SURG 140, SURG 145, SURG 120, SURG 150, SURG 260.
Corequisite(s): SURG 160, SURG 265.

SURG 260. Surgical Technology Clinical II
4 Credits (12P)
This is a health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. This course is designed to provide the student the opportunity to function actively in the role as a surgical technologist and health care team member in a clinical setting under the direct supervision of faculty and health care staff. Applications of basic principles and practices combined with a supervised clinical experience participating in common surgical procedures is the focus. Admission to Surgical Technology Program necessary to enroll in the course. Restricted to Community Colleges campuses only.
Prerequisite(s): SURG 120, SURG 140, & SURG 145.

SURG 265. Surgical Technology Clinical III
4 Credits (9P)
This is a health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. This course is designed to provide the student the opportunity to function actively in the role as a surgical technologist and health care team member in a clinical setting under the direct supervision of faculty and health care staff. Refinement and application of basic principles and practices combined with entry-level employment competency expectations is the focus. Preparation for the National Certification Examination for Surgical Technologists is also included. Admission to Surgical Technology Program necessary to enroll in the course.
Prerequisite(s): SURG 260.

TCEN-ENVIRONMENTAL/ENERGY TECH (TCEN)

TCEN 101. Energy for the Next Generation
3 Credits (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. Crosslisted with: OETS 101.
Prerequisite(s)/Corequisite(s): OETS 118 or MATH 1215. Restricted to: Community Colleges only.

TCEN 105. Building Analyst I
3 Credits (2+2P)
This course is designed to provide the foundational knowledge and expertise necessary for the energy auditor and home performance contractor. Crosslisted with: OETS 105. Restricted to: Community Colleges only.
TCEN 106. Building Analyst II
3 Credits (2+2P)
Reviewed to prepare the student for the BPI Building Analyst Certification. 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. Crosslisted with: OETS106.
Prerequisite(s)/Corequisite(s): TCEN 105 or OETS 105. Restricted to: Community Colleges only.

TCEN 110. Photovoltaic Application
4 Credits (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. Crosslisted with: OETS110.
Prerequisite(s)/Corequisite(s): TCEN 101 or OETS 101. Restricted to: Community Colleges only.

TCEN 111. Basic Electrical Principles I, DC Circuits
4 Credits (3+2P)
Course begins with the basics of electricity and DC circuits. Includes categorization of material properties within conductors, semiconductors, and insulators. Gradual progression tackles more complex topics like DC circuit analysis of series and parallel circuits, including Kirchhoff's laws, Thevenin's & Norton's theorems, and superposition. Finally DC combination circuits, magnetism and electromagnetism, generators and motors are covered. Emphasis on safety throughout. May be repeated up to 4 credits.
Prerequisite(s)/Corequisite(s): OETS 104 or MATH 1215. Restricted to Community Colleges campuses only.

TCEN 112. PV Power Generation Design Fundamentals
3 Credits (2+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. May be repeated up to 3 credits.
Prerequisite(s)/Corequisite(s): TCEN 111 and (OETS 104 or MATH 1215). Restricted to Community Colleges campuses only.

TCEN 113. OSHA 10 Hour Construction Hazard Identifications
1 Credit
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 115. Wind Power Generation Design Fundamentals
3 Credits (2+2P)
Course covers wind turbine module descriptions and functions and wind system installation, operation, and troubleshooting. Additional topics include wind energy harvesting and the conversion process from the generator system to electricity. May be repeated up to 3 credits.
Prerequisite(s)/Corequisite(s): TCEN 111 and (OETS 104 or MATH 1215). Restricted to Community Colleges campuses only.

TCEN 121. Basic Electrical Principles II, AC Circuits
4 Credits (3+2P)
Course begins with an overview of the primary components of AC circuits, such as resistors, inductors, rectifiers, transformers and capacitors, and then gradually introduces new, more complicated topics like applying AC principles in power generation and generators, motors, parallel and combination circuits, troubleshooting and evaluation of circuit conditions. May be repeated up to 4 credits.
Prerequisite(s)/Corequisite(s): TCEN 111 and (OETS 104 or MATH 1215). Restricted to Community Colleges campuses only.

TCEN 156. Building Envelope
3 Credits (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. Crosslisted with: OETS156. Restricted to: Community Colleges only.

Prerequisite(s): TCEN 106 or OETS 106.

TCEN 205. NEC for Alternative Energy
4 Credits (2+4P)
This hands-on course will cover the National Electrical Code specifics concerning photovoltaic installation. Also code compliant wiring of basic electrical systems will be covered. Existing installations will be visited and studied. Restricted to: Community Colleges only.
Prerequisite(s): TCEN 101 and ELT 105.

TCEN 220. Cooperative Experience
1-3 Credits (1-3)
Supervised cooperative work program. Student is employed in an approved occupation and supervised and rated by the employer and instructor. May be repeated up to 6 credits. Consent of Instructor required.
Prerequisite(s)/Corequisite(s): MAT 235. Prerequisite(s): TCEN 180. Restricted to: TCEN majors. Graded: S/U Grading (S/U, Audit). Restricted to: Community Colleges only.

TCEN 221. Roofing Materials and Methods
3 Credits (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
4 Credits (3+2P)
This is a more advanced course culminating in a PV system-to-grid connection. This course includes gathering site specific data, design, wire type and sizing specific to project, installation of all solar modules and balance of system (BOS)components, and grounding and bonding of system components, all in accordance with the latest NEC. Upon project design approval a system will be commissioned for the grid. Decommissioning will commence after measurements and troubleshooting as directed by the instructor. May be repeated up to 4 credits.
Prerequisite(s)/Corequisite(s): TCEN 121 and TCEN 223. Prerequisite(s): TCEN 111 and TCEN 112. Restricted to Community Colleges campuses only.
TCEN 223. National Electric Code Principles in Relation to Photo Voltaic Systems 2 Credits (2+1P)
Focuses on all sections of the National Electrical Code and local code requirements applicable to photovoltaic 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: TCEN 112.
Prerequisite/Corequisite: TCEN 222.

Learning Outcomes
1. Identify the requirements for safe and practical solar PV installations.
2. Accurately reference, read, and interpret NEC code as it relates to PV installations (Code 690). Present a compelling case of when the PV electricity market will reach "grid parity."

TCEN 224. Field Experience 1-3 Credits (1-3)
Student will collaborate with instructor in proposing, defining, implementing, and analyzing outcomes of a project in the Environmental and Energy fields of study. May be repeated up to 6 credits. Consent of Instructor required. Restricted to: TCEN majors. Restricted to: Community Colleges campuses only.

Prerequisite(s): OETS 104 or MATH 1215.

TCEN 241. Solar Thermal SHW Principles/Installation and Maintenance of Systems 3 Credits (2+2P)
Course presents the theory, installation, operation, and maintenance of solar hot water (SHW) systems. Topics include the types of systems to choose, the costs associated with SHW installation and operation, system sizing requirements, batteries and battery chemistry. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.

Prerequisite(s): OETS 104 or MATH 1215.

TCEN 246. Building Weatherization & Auditor Fundamentals 3 Credits (3)
Course provides information on how to locate air leaks and identify heat losses or gains through specific testing. Students will learn how to inspect and evaluate building envelopes, mechanical systems, and ventilation systems to determine the safety and energy consumption for each system. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.

Prerequisite(s): TCEN 113 and OETS 104.
Corequisite(s): TCEN 221.

TCEN 251. Advanced Photo Voltaic On/Off Grid Installation 3 Credits (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. May be repeated up to 3 credits.

Prerequisite(s)/Corequisite(s): TCEN 222. Restricted to Community Colleges campuses only.

TCEN 252. NABCEP Entry-Level Exam Review 2 Credits (2)
Course presents knowledge, key terms, and concepts of photovoltaic systems and solar hot water systems as related to the NABCEP Entry-level exam. This exam is for those wanting to enter the workforce in either solar thermal or solar PV. Scheduling and taking the exam is the responsibility of the student. Consent of Instructor required. Restricted to Community Colleges campuses only.

Prerequisite(s): TCEN 222.

Learning Outcomes
1. Analyze photovoltaic markets and application trends
2. Complete practice questions for the NABCEP PV Associate Exam
3. Develop a practice of safe work environment as it relates to the installation and maintenance of photovoltaic systems according to OSHA standards
4. Apply electrical concepts to the operation and maintenance of photovoltaic systems and related equipment
5. Apply solar energy fundamentals, i.e. photovoltaic module essentials, system components, system sizing principles, system electrical design, system mechanical design, performance analysis, maintenance, and troubleshooting
6. Pass the NABCEP PV Associate exam with at least 70 percentile.

TCEN 253. Renewable Energy System Troubleshooting and Maintenance 3 Credits (2+2P)
Covers wind, solar and solar thermal system troubleshooting and maintenance topics to include equipment, electrical, and installation problem areas. May be repeated up to 3 credits.

Prerequisite(s)/Corequisite(s): TCEN 251. Prerequisite(s): TCEN 222. Restricted to Community Colleges campuses only.

TCEN 254. Renewable Energy Internship 2 Credits (2)
Student will receive industry-related renewable energy experiences at an approved industry location. Typical areas of hands-on practices will be installing solar PV, solar hot-water systems, or wind energy systems. May be repeated up to 6 credits. Consent of Instructor required. Restricted to Community Colleges campuses only.

Prerequisite(s): TCEN 112 and 113 and 222.

THEA-THEATER

THEA 1110G. Introduction to Theatre 3 Credits (3)
This course provides an introduction to the study of theatre. Students will examine various components that comprise theatre, such as acting, directing, playwriting, dramaturgy, scenic and costume design, stagecraft, spectatorship, history, theory, and criticism.

Learning Outcomes
1. Define and discuss basic theater terms and concepts.
2. Discuss the fundamental elements of theatre, and the ways in which theatre differs from other art forms.
3. Analyze and critique the elements of a live theatrical production.
4. Identify and describe the roles of various theatre artists including actors, directors, playwrights, dramaturges, and designers.
THEA 1210G. Acting for Non-Majors
3 Credits (3)
This class gives non-majors experience in the depth and craft of the actor’s art. Students will learn various terms, techniques, and practices of acting and will demonstrate their understanding in class. Through exercises and improvisations, partnered scenes, and group work, students will be better able to appreciate the work of others as they learn techniques of performing. May be repeated up to 3 credits.

Learning Outcomes
1. Develop fundamental physical, vocal, analytical, and imaginative skills for acting for the stage.
2. Apply fundamental techniques of voice and movement for the stage.
3. Apply principles of play text analysis to understand story, character, and meaning.
4. Gain a better understanding of an actor’s approach to goals, tactics, and obstacles.
5. Engage in character creation and development while preparing and performing monologues and scenes.
6. Learn a common vocabulary to help discuss the process of acting.
7. Employ collaborative methods of work with a partner and in groups.
8. Observe and evaluate acting skills of other actors.
9. Increase verbal and physical communication skills which are applicable in any field.
10. Develop personal and social responsibility via group work, research and self-reflection.
11. Increase confidence and self-esteem via continuous presentations with supportive feedback.

THEA 1221. Beginning Acting
3 Credits (3)
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.

Learning Outcomes
1. Apply a common vocabulary that serves as a foundation in acting for the theatre major and minor.
2. Communicate effectively in front of an audience, applying learned concepts while exercising freedom and control of voice, body, and imagination.
3. Analyze the written character and live performance.
4. Provide objective feedback to your classmate’s work as well as your own, that supports a greater understanding of our craft while building trust within the collaborative ensemble.

THEA 1222. Stage Movement
3 Credits (3)
Physical techniques for the actor to develop kinesthetic awareness and skills in characterization, archetypes, and stage combat. Restricted to: THTR majors.

Learning Outcomes
1. To provide fundamental training in a variety of movement techniques which can be applied to both theatrical performance and physical communication in everyday life.
2. Observation and critical skills will be advanced through class participation and outside assignments.
3. Class exercises are aimed at guiding participants to uncover their own creative expression, while working with efficient, healthy body alignment.

THEA 1223. The Art of Theatre
3 Credits (3)
This course introduces the variety and scope of theatre professions, the value and goals of the theatre major and an analysis of the art form from script to stage. Restricted to: Required for THTR majors.

Learning Outcomes
1. An overview of the history of theatre in the Western world.
2. A general understanding of the artistic roles and functions within the theatre industry (including within NMSU Theatre as a model).
3. A strong preparation for independent in-depth script analysis and theatre critique.

THEA 1310. Introduction to Costuming
3 Credits (3)
This course introduces students to basic skills generally used in creating costumes for theatre. During the semester students will be introduced to the costume shop, equipment, supplies, and processes. They will learn the process of sewing a garment and running a stage production.

Prerequisite(s)/Corequisite(s): THEA 1310L. Restricted to: THTR majors.

Learning Outcomes
1. Demonstrate basic hand and machine sewing skills.
2. Use basic costume craft tools and techniques.
3. Analyze fabric selection for the stage.
4. Draft and use patterns.
5. Take body measurements for patterning and construct a costume from those measurements.
6. Combine interpersonal communication skills with costume construction skills.
7. Analyze a script for costume design purposes.
8. Build a garment.

THEA 1310L. Costume Craft Lab
1 Credit (1)
Class members will assist in construction for productions in a studio environment.

Prerequisite(s)/Corequisite(s): THEA 1310.

Learning Outcomes
1. This laboratory class compliments THEA 1310: Costume Crafts.
2. It gives the student an opportunity to put into practice the skills learned in THEA 1310 as well as be introduced to and participate in the day-to-day operations of the Costume Shop.

THEA 1415. Running Crew I
2 Credits (1+2P)
Students learn about backstage and front of house production positions and work on a technical aspect of a product in a rehearsal and performance environment.

Learning Outcomes
1. Students will learn one, or more, of the basic technical elements of theatrical crew work.
THEA 221. Intermediate Acting: Scene Study and Monologues
3 Credits (3)
Monologues and scene work, using character and script analysis.
Prerequisite(s):
Prerequisite(s): THEA 1221 or THEA 1210 with C- or above.
Learning Outcomes
1. Students will gain further insight into the craft of acting and the
techniques and skills required to present a successful stage
performance.
2. Via the presentation of varied scenes and monologues, students will
be exposed to a variety of theatrical literature.
3. Via research, students will gain knowledge of successful actors,
acting techniques, and career advice.

THEA 222. Intermediate Acting for Non-Majors
3 Credits (3)
A continuation of THEA 1210 with an emphasis on monologues, scenes
and characterization. Prerequisite(s): THEA 1210
Learning Outcomes
1. Apply fundamental techniques of voice and movement for the stage.
2. Analyze a dramatic text and interpret a character and develop the
skills necessary to score a script for character development.
3. Perform specific choices to create and perform goal-driven
characters.
4. Demonstrate various physical and mental relaxation techniques.
5. Identify internal and external techniques to increase actor’s emotional
range.
6. Demonstrate sensory exercises and apply this technique to scene
work.
7. Articulate and implement key terminology of modern acting
techniques.
8. Develop and articulate a basic personal artistic process.
9. Demonstrate the ability to work cooperatively on a creative/
interpretative project.
10. Begin to develop professionalism and development of a critical eye
through practice giving and receiving peer feedback, adherence to
deadlines, memorization, flexibility and coachability.

THEA 2310. Stagecraft
3 Credits (3)
Student will explore basic skills for scenic designers and techniques
of set construction for the stage, including building scenery, rigging,
painting and properties.
Prerequisite(s)/Corequisite(s): THEA 2310L.
Learning Outcomes
1. Demonstrate a range of technical skills, which will qualify them to
assist in the basic technical
2. production of a play.
3. Demonstrate and apply how to safely and competently use hand
tools, power tools, electrical, and electronic stage equipment.
4. Analyze the technical aspects of a play in performance.
5. Read and construct scenery from ground plans, elevations, and
drawings.
6. Analyze a script from the perspective of a designer, artistic, and/or
technical director.

THEA 2310L. Stagecraft Laboratory
1 Credit (1)
Class members will assist with construction for productions in a studio
environment.
Prerequisite(s)/Corequisite(s): THEA 2310.
Learning Outcomes
1. History of scenic design and the development of present day stage
design.
2. How to create and interpret basic scenic ground plans, elevations,
and detail drawings.
3. To construct basic scenic structures to include flats and platforms.
4. Various techniques of scenic painting and decorating.
5. The installations of theatre lighting instruments and sound
equipment.

THEA 2340. Introduction to Design
3 Credits (3)
Introduction into our visual world via the language of designers, focusing
on collaboration, creative thinking and presentation skills. The varied
design professions in theatre and the performing arts will be explored.
Restricted to: Required of all THTR Majors.
Learning Outcomes
1. Apply design vocabulary and descriptions when speaking about
design.
2. Identify design tools and make choices about where to use them.
3. Apply the foundation information in understanding how design tools
work.
4. Apply correct terminology in assessing design and script analysis.
5. Read and understand some of the design documents commonly used
in the industry.

THEA 2415. Running Crew II
1 Credit (1)
Students learn about backstage and front of house production
positions and work on a technical aspect of a product in a rehearsal and
performance environment.
Learning Outcomes
1. To provide students with “hands on” experience participating in being
a member of a running crew on a theatrical production.
2. Students will learn one, or more, of the basic technical elements of
theatrical crew work.

THEA 2421. Vocal Production for the Actor
3 Credits (3)
Exploration and development of the actor’s vocal instrument, including
relaxation, projection, diction and articulation. May be repeated up to 3
credits. Restricted to: THTR majors.
THEA 2993. Theatre Workshop I
0.5 Credits (.5)
Required for all freshman and sophomore theatre majors, this course coordinates all processes within Theatre Arts, providing a forum for discussion and feedback. May be repeated up to 4 credits. Restricted to Las Cruces campus only.

Learning Outcomes
1. This lab course is designed to create community via group meetings with your peers while providing a platform for our guest artists to present information regarding our profession.
2. As time allows, group discussions and sharing will further the sense of community and collaboration with your peers.
3. This forum also provides an opportunity to discuss and provide feedback for each production in the ASTC season.

THEA 2996. Theatre Topics
1-3 Credits (1-3)
Specific subjects to be announced in the Schedule of Classes. May be repeated for a maximum of 9 credits.

Learning Outcomes
1. Varies

WATR-WATER UTILITIES (WATR)

WATR 120. Introduction to Water Systems
3 Credits (3)
Introduction to and theory of groundwater sources, production, treatment, and distribution.

WATR 130. Wastewater Collection and Basic Treatment Systems
3 Credits (3)
Introduction to wastewater characteristics, collection, and basic treatment operations.

WATR 140. Applied Water and Wastewater Math I
3 Credits (3)
Introduction to basic water and wastewater mathematics, flows through distribution networks and collection systems, and fundamentals of flow measurement.
Prerequisite: CCDM 114 N or equivalent.

WATR 160. Systems Maintenance
4 Credits (2+4P)
Basic tools, equipment, maintenance schedules, chlorinator troubleshooting, and chlorine safety. Hands-on training with valves, pumps, meters and chlorination equipment.

WATR 175. Programmable Logic Controllers
2 Credits (2)
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 only.

WATR 180. Water Chemistry
3 Credits (3)
Basic chemistry with applications to water and wastewater analysis.
Prerequisite: CCDM 114 N or consent of instructor.

WATR 182. Water Chemistry Analysis
1 Credit (3P)
Beginning water and wastewater laboratory analysis including gravimetric, volumetric, and quality control techniques.
Prerequisite: CCDM 114 N or equivalent or consent of instructor.

WATR 190. Water and Wastewater Microbiology
3 Credits (3)
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 Credit (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. Internship
3-5 Credits
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. May be repeated up to 5 credits. Consent of Instructor required. Restricted to: Water Technology majors. Graded: S/U Grading (S/U, Audit). Restricted to Community Colleges campuses only.

WATR 220. Water Treatment Systems
3 Credits (3)
Theory of water systems operation including surface water treatment, fluoridation, 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 Credit (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 Credits (4)
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 Credit (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 Credits (2+2P)
Prerequisites: WATR 140.

WATR 250. Municipal Systems Management
4 Credits (4)
Management of water utility systems including laws, finance, records, and safety.
Prerequisites: WATR 120, WATR 130.

WATR 270. Special Topics
1-4 Credits
Specific subjects to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits.
WATR 275. Certification Review
3 Credits (3)
Review of water and wastewater plant operations and laws in preparation for state certification exams. May be repeated up to 3 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): WATR 120, WATR 130, WATR 140, WATR 160.

WATR 285. High Purity Water Treatment Systems
3 Credits (3)
Principles of high purity water production including microfiltration, ultrafiltration, reverse osmosis, and deionization.
Prerequisite: WATR 220.

WATR 287. Advanced Water Chemistry Analysis
3 Credits (6P)
Sampling techniques, analysis, and evaluation of potable water contaminants using gravimetric, volumetric, spectrophotometric, and other instrumentation methods. May be repeated up to 3 credits.
Prerequisite(s)/Corequisite(s): WATR 285. Restricted to Community Colleges campuses only.

WATR 290. Advanced Wastewater Microbiology and Chemistry
3 Credits (3)
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 Credits (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)

WELD 100. Structural Welding I
6 Credits (3+6P)
Development of basic skills in SMAW, OFC, and OFW in accordance with the AWS entry-level welder program.

WELD 102. Welding Fundamentals
3 Credits (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 Credits (3)
Welding practices, procedures, and terminology. Welding safety, equipment types, electrode types in usage, joint design and testing procedures.

WELD 110. Blueprint Reading (Welding)
3 Credits (3)
Interpretation of prints related to welding. Emphasis on AWS standard symbols for welding, brazing, and nondestructive examination.

WELD 115. Structural Welding II
6 Credits (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 120. Basic Metallurgy
3 Credits (3)
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 Credits (2+2P)
Pipe fit-up and welding techniques for pipe fitting and pipe weld joint using SMAW, GMAW, GTAW, and FCAW, 2G welding of pipe. Restricted to: Community Colleges only.
Prerequisite(s): WELD 100, WELD 130, and WELD 140, or consent of instructor.

WELD 126. Industrial Pipe Welding
3 Credits (3)
Enhancement of WELD 125. Development of more advanced pipe welding skills.
Prerequisite(s): WELD 110, WELD 130 and WELD 140.
Corequisite(s): WELD 125.

WELD 130. Introduction to GMAW MIG
3 Credits (2+2P)
Development of basic skills with gas metal arc welding (MIG) in accordance with AWS entry/advanced welder objectives. Wire electrodes, shielding/purge gases, and modes of metal transfer.

WELD 140. Introduction to GTAW TIG
3 Credits (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 Credits (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 Credits (3)
Prerequisite(s): WELD 125 and WELD 126.
Corequisite(s): WELD 150.

WELD 160. Introduction to SAW and FCAW
3 Credits (2+2P)
Submerged arc and flux-cored arc welding. Demonstrations and practice with machine travel submerged arc welding (SAW), flux-cored arc welding (FCAW-G, FCAW-S) on mild steel plate and pipe. Restricted to: Community Colleges only.
WELD 170. Welded Fabrication
3 Credits (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 Credits (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 Credits (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. May be repeated up to 12 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): WELD 102.

WELD 211. Welder Qualification
6 Credits (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. Restricted to majors.
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.

WELD 221. Cooperative Experience I
1-6 Credits
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. Restricted to majors.
Prerequisites: WELD 100 or WELD 101 and consent of instructor.

WELD 255. Special Problems in Welding Technology
1-6 Credits
Individual studies in areas of welding technology. May be repeated for a maximum of 12 credits.
Prerequisite: consent of instructor.

WELD 295. Special Topics
1-4 Credits
Topics to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits.

Governance and Personnel

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Administration - Las Cruces
- Dan Arvizu, Chancellor, New Mexico State University
- John Floros, President, New Mexico State University

Advisory Board - Grants/Cibola County Public School Board Members
- Ortiz, Ron, President
- Jones, Richard, Vice President
- Sandoval, Dion, Secretary
- Archambau, Dr. Guy, Member
- Hunt-Dailey, Emily E., Member

Grants Campus Administration
- Van Winkle, Ken, Branch Executive Director, DMA, University of Oregon
- Chavez-Toivanen, Marlene, Vice President for Academic Affairs/Associate Campus Director, Ph.D., Educational Leadership, New Mexico State University
- Clingman, Patrick, Vice President for Student Services, Master's Engineering Management, New Mexico Tech
- Salcido, Alice, Business Manager III – B.B.A., New Mexico State University

Regular Faculty
- Bedasso, Eyrusalem, College Instructor/Program Manager, Chemistry, Doctor of Philosophy in Chemistry, Northern Illinois University
- Bishop, David, Associate Professor, Mathematics, M.S., Western Illinois University
- Erben, Joan, Professor, Communications, D.A. (Doctor of Arts, English), Idaho State University
- Gallagher, Neal, Associate Professor/Program Manager, Health Sciences, B.S.N. (Nursing), Western Connecticut State University
- Gutierrez, Richard, Professor/Program Manager, Welding/Drafting, B.A. (Industrial Engineering), University of Northern Colorado
- Humphreys, Elizabeth, Associate Professor, M.A., St. John's College
- Johnson, Sarah, Assistant Professor computer science, M.S. Computer Science-Hartford Graduate Center
- O'Connor, Kathleen, Associate Professor/Program Manager, M.A., Counseling, Prescott College; M.A., Early Childhood Development, The University of New Mexico
- Oskey, Eric, College Instructor/Program Manager, Automotive Technology, A.A.S., Automotive Technology, New Mexico State University
- Prewett, Janet, College Instructor Mathematics, B.A.
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• **Strange, Patricia**, Associate Professor, English, M.A.T., Western New Mexico University
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