



# NEW MEXICO STATE UNIVERSITY

## GRANTS CAMPUS

### ACADEMIC CATALOG 2025-2026



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**New Mexico State University**

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# GRANTS ACADEMIC CATALOG

## New Mexico State University Grants

### Course Catalog 2025 - 2026

(Effective Summer 2025 through Spring 2033)

1500 N. Third Street  
Grants, New Mexico 87020  
Phone: (505) 287-6678  
Fax: (505) 287-2329  
<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.

## Welcome

### Congratulations on making the decision to transform your life!

We are excited you have decided to become an Aggie and believe you are making a great decision to improve your life through higher education.

We have degree and certificate programs that will help you achieve your academic and career goals and find your purpose. Whether it be a transfer degree, an associate's, or certificate in one of our many Career & Technical Education programs, we will help you quickly get on a desired career path.

You may decide to earn an Associate's degree in Education, Business, Criminal Justice, or Science while simultaneously completing the first two years of study toward a bachelor's degree. By starting first at NMSU Grants and then transferring to a university, you will save approximately \$15,000 in tuition alone on your bachelor's degree.

NMSU Grants works hard to increase educational attainment levels in our region, and ensure everyone has access to affordable higher education. We strive to empower students to succeed through innovative pathways and quality education. When you succeed, NMSU Grants and our communities succeed.

I know college will be challenging and that is why NMSU Grants has a Student Success Center staffed with people who can help you along the way. We offer free tutoring, assistance with math, coaching in writing, and much more. Our faculty are known for their thoughtful and caring approach to teaching and learning. Take the time to get to know them and seek assistance when needed. We all are here to help you overcome obstacles and attain your desired degree or certificate.

Remember, NMSU Grants is YOUR college. Make the most out of your experience, achieve at a high level, use the resources available, get involved, make a difference, and succeed at all your academic endeavors.

Welcome to the NMSU family and GO Aggies!

*Dr. Marlene Chavez-Toivanen*

*Campus Executive and Academic Officer*

## About NMSU Grants

### History of NMSU Grants

NMSU at Grants was established as a branch campus of New Mexico State University in 1968 through the cooperative efforts of New Mexico State University and Grants Municipal Schools.

During the first year of operation, classes were held in the evening in the public school facilities and were taught by qualified part-time instructors from the community.

In August 1969, the college moved to its present site, which previously housed the Grants Job Corps Center. During 1977–78 a Main Building was constructed which housed the academic classrooms, student lounge, library, law library, as well as faculty and administration offices. Later the former Vocational Building and Gymnasium became Fidel Hall, which remain from the Job Corps Center, were also renovated during the same period.

In May of 1987, the Main Building was dedicated as "Walter K. Martinez Memorial Hall," in memory of Walter K. Martinez, former State Representative from 1966–1984 and Speaker of the House from 1971–1978. During his tenure in the legislature, NMSU-Grants received significant appropriations for capital improvements to plan, remodel and construct the present physical plant. In addition, two buildings were named and dedicated to leaders in the development of the NMSU at Grants Campus:

- the gymnasium became the "Joseph A. Fidel Activities Center,"
- while the new name of the Annex, the "McClure Building," honored former state Senator Frank McClure for his pioneering efforts in establishing this campus.

NMSU Grants celebrated its 50th anniversary in 2018 and dedicated the new Teacher Education and Health Care building as "Lucy Belle Ma Hall", in memory of Lucy Belle Ma, a former employee who dedicated her time to recruiting and helping our students.

In the 21<sup>st</sup> century, NMSU Grants is distinguished by serving as both a Hispanic Serving Institution (HSI) and a Non-Tribal Native American Serving Institution (NASNTI). This reflects the local service base of Cibola and Catron counties, including the tribal communities of the Laguna Pueblo, Acoma Pueblo and Navajo Nation.

Academic programs at NMSU Grants range from a bachelor's of science in nursing to a variety of associate and applied science associate degrees as well as a wide range of certificates that prepare students for additional bachelor's study or careers in trades, technology or health and social services. Recently NMSU Grants has increased collaboration with area schools including Grants Cibola County Schools and Pine Hill High School to foster dual enrollment opportunities. The establishment of the Early College High School on campus elevates the commitment to education in Cibola County. Additional emphasis is on our Adult Education program, increases in our on-line course offerings, and efforts

to hire and retain highly qualified professional faculty and staff. These activities all contribute to the institutional mission of providing quality education through innovative teaching and learning that promotes respect for our diverse students and community.

## Mission, Vision, & Values

**Mission Statement:** NMSU Grants provides an accessible quality education through innovative teaching and learning that promotes respect and service for our diverse students and community.

**Vision Statement:** To embrace innovation in teaching and learning to promote a sustainable prosperous community.

**Values Statement:**

- Personal Success
- Growth
- Respect
- Healthy Lifestyles
- Teamwork
- Community Partnerships
- Stewardship
- Excellence
- Integrity
- Positive Attitude
- Employability
- Empowerment
- Intellectual Inquiry
- Social Justice
- Creativity
- Safe Environment

## NMSU Grants Institutional Learning Outcomes

| Goals                                 | Goal Articulation  |
|---------------------------------------|--|
| Critical Thinking and Problem Solving | Actively and skillfully engage in the process of analyzing and evaluating in order to make judgments to solve problems.          |
| Goal Setting and Initiative           | Develop self-motivation and self-confidence in identifying and ranking priorities for achievements in life.                      |
| Technology and Information Literacy   | Use technology effectively as a tool for communication and to complete tasks as well as to locate, evaluate and use information. |
| Professionalism                       | Use time management to meet deadlines and approach collaborations objectively.   |
| Citizenship                           | Improve and affect positive change in communities at all levels including sustainability and global issues.                      |
| Lifelong Learning                     | Expose students to new and diverse modes of learning to spark a continuing quest for knowledge.                                  |

|                              |   |
|------------------------------|---|
| Reading/Writing/Math Ability | Acquire foundational abilities in reading, writing, and math that will enhance future studies, career, and citizenship. |
| Diversity and Cultural Value | Celebrate and enhance students' sense of identity while encouraging inclusion and empathy.                              |
| Communication Skills         | Practice essential listening, speaking, writing, and other forms of communication to advance and share ideas.           |
| Ethics                       | Develop principles and standards of behavior supporting honesty and integrity while avoiding dishonesty and harm.       |
| Commitment and Leadership    | Cultivate perseverance and the ability to move ideas and positions forward.   |
| Creativity                   | Foster and amplify innovation and imagination by connecting creative efforts to enhance life experiences.               |

## Catalog Intent

The catalog is a summary of information of interest to students. Readers should be aware of the following:

1. This catalog is not a complete statement of all procedures, policies, rules and regulations. See the Schedule of Courses and the Student Code of Conduct for additional information.
2. The university reserves the right to change, without notice, any academic or other requirements, course offerings, course content, programs, procedures, policies, rules, and regulations as published in this catalog.

Special procedures, policies, rules, and regulations, whether or not contained in this catalog, may be applicable to students.

Students planning to earn degrees or certificates may elect to fulfill requirements as outlined in the catalog in effect at the date of initial enrollment or as outlined in catalogs published subsequent to their initial enrollment.

## Notice of Non-Discrimination

New Mexico State University (NMSU) is dedicated to providing equal opportunities in our employment and learning environments. NMSU does not discriminate on the basis of age, ancestry, color, disability, gender identity, genetic information, national origin, race, religion, retaliation, serious medical condition, sex (including pregnancy), sexual orientation, spousal affiliation, or protected veteran status in its programs and activities as required by equal opportunity regulations and laws and university policy and rules.

NMSU's Office of Institutional Equity (OIE) is responsible for compliance with state and federal equal employment opportunity laws and regulations. If you believe you have been treated in a manner inconsistent with equal opportunity, contact the Office of Institutional Equity.

NMSU has designated the Executive Director of OIE as the Title IX Coordinator and is responsible for ensuring compliance with Title IX and other state and federal laws addressing sexual and gender-

based harassment, including sexual assault, sexual exploitation, sexual intimidation, dating and domestic violence, stalking, and other forms of sexual violence based on sex, gender, sexual orientation, or gender identity.

NMSU recognizes that individuals with disabilities are entitled to access, support and, when appropriate, reasonable accommodation. The Executive Director of OIE is also assigned to coordinate compliance with the American's with Disabilities Act ("ADA"), Section 504 of the Rehabilitation Act, and other state and federal laws that prohibit discrimination on the basis of disability in admission, treatment and/or access to its programs and activities.

Inquiries regarding equal employment opportunity, Title IX, and/or ADA/ Section 504 should be directed to:

Office of Institutional Equity

Executive Director

Title IX Coordinator and ADA

O'Loughlin House

Las Cruces, NM 88003

(575) 646-3635

Website: [equity.nmsu.edu](http://equity.nmsu.edu)

Email: [equity@nmsu.edu](mailto:equity@nmsu.edu)

OIE's Deputy Director can be contacted at the O'Loughlin House or by telephone (575) 646-3635.

Complaints of discrimination, harassment, sexual violence, and retaliation may be directed to the Office of Institutional Equity at [equity@nmsu.edu](mailto:equity@nmsu.edu).

Complaints may also be filed with the United States Department of Education, Office for Civil Rights at <https://ocrportal.hhs.gov/ocr/smartscreen/main.jsf>, the U.S. Equal Employment Opportunity Commission, and/or New Mexico Human Rights Bureau.

#### Equal Opportunity/Affirmative Action Statement

New Mexico State University, in compliance with applicable laws and in furtherance of its commitment to fostering an environment that welcomes and embraces diversity, does not discriminate on the basis of age, ancestry, color, disability, gender identity, genetic information, national origin, race, religion, retaliation, serious medical condition, sex (including pregnancy), sexual orientation, spousal affiliation, or protected veteran status in its programs and activities, including employment, admissions, and educational programs and activities. Inquiries may be directed to the Executive Director, Title IX and Section 504 Coordinator, Office of Institutional Equity, P.O. Box 30001, 1130 E. University Avenue, Las Cruces, NM 88003; 575-646-3635; [equity@nmsu.edu](mailto:equity@nmsu.edu).

NMSU is committed to providing reasonable accommodations to qualified individuals with disabilities upon request. To request an accommodation, students should contact Student Accessibility Services on their campus or on Main Campus at Corbett Center Student Union, Room 2008, Las Cruces, NM 88003; 575-646-6840 or [sas@nmsu.edu](mailto:sas@nmsu.edu).

Employees requiring accommodation should contact the Office of Institutional Equity, O'Loughlin House, 1130 E. University Avenue, Las Cruces, NM 88003; 575-646-3635 or [equity@nmsu.edu](mailto:equity@nmsu.edu).

## 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

NMSU Grants Community College is accredited with the NMSU Campus as branch location.

## General Information

### New Mexico State University Grants

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

- Academic Affairs - (505) 287-6641
- Student Services – (505) 287-6678  
[ssgrants@nmsu.edu](mailto:ssgrants@nmsu.edu)
- Business Office -- (505) 287-6653  
[gr\\_boffice@nmsu.edu](mailto:gr_boffice@nmsu.edu)
- Human Resources – (505) 287-6625
- Library Services -- (505) 287-6638
- Computer/IT Support – (505) 287-6666
- Small Business Development Center (SBDC) - (505) 287-6688

View Maps & Directions (<https://grants.nmsu.edu/webpages/about/contactinfo.html>)

## Admissions

A student may be accepted for undergraduate admission to NMSU as:

1. Degree-seeking student or
2. Nondegree student under the policies and conditions as set forth in this section.

## Regular Admission Domestic Students

Requirements for admission as a regular student include the following:

- An official transcript of the student's high school credits is to be sent directly from the high school to the NMSU Grants Admissions Office. Students who attended a college or university while in high school must request to have official transcripts(s) forwarded directly to the NMSU Grants Admissions Office by the Registrar of each college or educational institution previously attended.

Qualifications for undergraduate admissions to NMSU are as follows:

- Graduation from any state high school or academy in the United States accredited by a regional accrediting association or approved by a state department of education or state universities.

## Home School Students

Students enrolled in a home school program may be accepted to NMSU if they meet the requirements for regular admission as previously stated. In addition, the home school educator must submit a signed transcript or document that lists the courses completed and grades earned by the student as well as indicate the date the student completed or graduated from the home school program. Home school students who are New Mexico residents and wish to participate in the Lottery Success Scholarship program are required to submit official New Mexico GED or HiSET test results in English.

## Admission by GED OR HiSET

Any student that has successfully completed the GED or HiSET can be considered for admission upon satisfactory scores on the General Education Development (GED) test or HiSET. If the high school transcripts or GED/HiSet test results do not provide adequate information for a final admission's decision, NMSU Grants may require the applicant to submit official results of the American College Testing (ACT) Program test battery.

Students must complete the GED and HiSET in English.

## Early Admission

Currently enrolled high school students, home-schooled, or Adult Education of high quality academic ability may be admitted as non-degree students prior to earning a high school diploma or equivalency. Students are responsible for all tuition, fees, and books. Requirements include:

- NMSU Application;
- Written permission from the high school principal (or Adult Education Director), counselor, and parent/guardian;
- Official home school/high school transcript;
- College Placement Exam;
- Interview with Vice President for Student Services who will verify admission and approve courses;
- Limit to 7 credit hours

Minimum 16 years of age or equivalent of a high school student, with appropriate approval.

## Readmission (Degree Seeking)

Former students of NMSU, or of one of its community colleges, who have been out of school for more than two consecutive terms are required to make a formal application for readmission. Applications should be submitted to NMSU Grants at least two weeks before the opening of the semester or summer session for which the student plans to enroll.

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

## Application Materials

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

## Out-of-State Students and Legal Jurisdiction

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

## Dual Credit for High School Students

The Dual Credit Program is designed to give high school students an opportunity to enroll at NMSU prior to high school graduation. Under Senate Bill 158 signed by the Governor and effective July 1, 2014, support for dual credit privileges at post-secondary institutions is now available for private and home school-eligible students. Under a Statewide Dual Credit Master Agreement between NMSU and the school district, students enrolled in approved dual credit courses are eligible to have the full cost of tuition and general fees waived.

Dual credit students must:

- Apply for Undergraduate Admission
- Provide official high school transcript and
- Complete the State of New Mexico Dual Credit Request Form

High school students who wish to take college courses at NMSU Grants must meet the following requirements:

- Obtain permission from your high school counselor, the student's parent or guardian (if the student is under 18 years old), and an NMSU Grants representative
- Sophomores must have a minimum high school GPA of 3.0 or equivalent scores on the ACT or SAT; and meet all prerequisite and placement requirements
- Juniors and Seniors must have a minimum high school GPA of 2.0 or equivalent scores on the ACT or SAT; and meet all prerequisite and placement requirements

The course a student is allowed to take is based on their GPA, placement assessment results, and the courses authorized by their high school. For approved courses, students must visit with the Dual Credit college advisor or the Dual Credit Representative for their high school.

Consult with NMSU Grants Student Services for more information and waivers

**Dual Credit for Home School Students:** Home school students who choose to participate in college courses must meet the same requirements mentioned above and will have their tuition and general fees waived by NMSU Grants. The student will be required to purchase the book and pay any course fee. These students will be required to provide the college with a graded transcript. This transcript must provide a graded (**A-F**) transcript showing courses, course levels, grade level, and grades signed by the home school program evaluator. Students must also meet the GPA requirements for each grade level.



## Course Placement

### Course Placement for Math, and English

At the time of registration, the academic skill level of all entering first-time students is evaluated using Accuplacer scores combined with High School GPA, and if available, the SAT/ACT scores. Advisors will assist students in determining the best sequence of courses to meet their academic goals. Placement methodology and scoring are subject to change, and scores are valid for one year.

**Developmental Courses in Math** - For students without MATH placement information, the Accuplacer exam is used to determine appropriate MATH course placement. Based on the score received, students will be placed into the appropriate developmental Mathematics course before enrolling in a 1000 level Math course. Students must complete all prerequisite math courses, as listed in the catalog, or obtain an override with appropriate approvals.

**Developmental Courses in English** - For students without ENGL placement information, the Accuplacer exam is used to determine appropriate ENGL course placement. Based on the score received, students will be placed into the appropriate developmental English course before enrolling in ENGL 1110G Composition I.

## Aggie Pathways

Student applicants who do not meet NMSU Las Cruces admission requirements may apply to participate in the Aggie Pathway to the baccalaureate program at any of the NMSU community colleges located in Grants, Alamogordo & Dona Ana County. Aggie Pathway students may transition to the NMSU Las Cruces campus after successful completion of any required developmental education courses and 24 degree credits with a 2.5 cumulative college GPA. Each student will follow an individualized study plan developed in partnership with an academic advisor that typically includes study skills courses, developmental education courses, and/or general education courses.

For more information, go to <http://aggiepathway.nmsu.edu> (<https://aggiepathway.nmsu.edu/>), or call (575) 646-8011.

## New Student Orientation

New Student Orientation allows students the opportunity to learn about NMSU Grants' services, resources, academic expectations, strategies for success, and student organizations. New Student Orientation is mandatory for all new incoming Freshman or transfer students. Orientation is offered online or in-person on the NMSU Grants campus. The online New Student Orientation is available to students at any time with permission from Admissions. Students can learn more about in-person options by contacting Admissions at (505) 287-6678.

## Nondegree Admission

Nondegree admission is designed to meet the needs of mature, part-time students who do not wish to pursue a degree at this university. Courses taken in this status may not be used to meet university admission requirements. Students interested in using nondegree credit for initial teacher certification or recertification in a new field need to contact the College of Education. Also students who wish to take a course without a graded credit may choose to audit courses with the consent of the instructor, provided the facilities are not required for regular students.

Students on nondegree status are ineligible to receive financial aid or student employment; nor are they eligible to participate in student

government or intercollegiate athletics. They are also ineligible to receive benefits from any veterans' program.

Transcripts from previous institutions, high school, and/or results of college entrance exams may be required to assure readiness for university-level courses.

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

## Changing from Nondegree Status

A nondegree student in good academic standing at NMSU must submit a formal application for a change of status from nondegree to degree seeking. Requirements for regular admission must be met.

## Contact Information

### NMSU Grants Admissions Office

1500 Third St.

Grants, NM 87020

Phone: (505) 287-6678

Email: [gradmissions@nmsu.edu](mailto:gradmissions@nmsu.edu)

## Financial Aid & Scholarship Services

University Financial Aid and Scholarship Services administers a broad spectrum of grants, scholarships, work-study funds, and loans in an attempt to meet the financial need of NMSU students.

Students applying for financial aid must complete the Free Application for Federal Student Aid (FAFSA). Students must submit the FAFSA every year. The information reported on the FAFSA calculates the Student Aid Index (SAI). The SAI is an eligibility index number used to determine your eligibility for federal financial aid. The formula that establishes the SAI is instituted by law and is a result of the information provided on the FAFSA.

NMSU uses the SAI to determine your financial aid award. Some college scholarships also require an SAI. All information provided to the University Financial Aid and Scholarship Services is confidential.

Students can begin applying for financial aid by submitting a FAFSA through [studentaid.gov](https://studentaid.gov) (<https://studentaid.gov/>). Please refer to the NMSU-Las Cruces, Financial Aid and Scholarship Services web site for more information on awards and policies at [fa.nmsu.edu](https://fa.nmsu.edu).

## General Eligibility Requirements

To receive financial aid you must be admitted to NMSU as a degree-seeking student in an eligible degree or certificate program and demonstrate that you are qualified to obtain an education by:

- Having a high school diploma or recognized equivalent such as a General Education Development (GED) certificate or
- Completing a high school education in a home-school setting approved under state law or
- Achieving a passing score on an independently administered ATB test approved by the Education Department as a student who first enrolled in an eligible program *prior* to July 1, 2012 without a high school diploma, recognized equivalent, or did not complete home schooling, and could continue to qualify based on completing 6 credit hours from that eligible program.
- Being a U.S. citizen or eligible noncitizen (state funded scholarships are available to undocumented students).

- Having a valid Social Security number. If you do not have a Social Security number, you can find out more about applying for one at [ssa.gov](http://www.ssa.gov) (<http://www.ssa.gov/>).
- Meeting satisfactory academic progress (SAP).
- Signing a statement on the FAFSA certifying that you will use Federal student aid only for educational purposes.
- Certifying that you are not in default on a loan under any title IV or HEA loan program, and have not exceeded annual or aggregate loan limits, and you are not liable for grant overpayment.

## Financial Aid Awards

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

## Grants

The Federal Pell Grant is a federal grant available to undergraduate students with documented financial need. If the Pell Grant is insufficient to pay educational expenses, the student may be eligible to receive other types of aid, including a Federal Supplemental Educational Opportunity Grant (SEOG) or Leveraging Education Assistance Partnership Program Grant (LEAP), and/or other miscellaneous grants. These grants are offered to undergraduate students who demonstrate exceptional financial need. Funds are limited and are awarded based on need and the priority date. For more information, contact University Financial Aid and Scholarship Services or visit the university's financial aid website at [fa.nmsu.edu/](http://fa.nmsu.edu/). (<http://fa.nmsu.edu/>) Generally, grants do not have to be repaid.

## Work-Study Programs

Work-study is a federal or state-funded financial aid program that provides funds for part-time employment to students. Students earn their semester work-study award through hourly pay within on-campus or academic-related jobs. These awards are based on early FAFSA submission, financial need as determined by FAFSA, and funding availability, so students are encouraged to apply before the March 1st priority deadline. Work-study jobs are a great opportunity for students to earn income and work within a professional career-oriented position. Students can apply for work-study positions using the NMSU Handshake application at [nmsu.joinhandshake.com/](https://nmsu.joinhandshake.com/). For more information on the U.S. Department of Education student aid programs, go to [studentaid.gov](https://studentaid.gov) or visit the NMSU Financial Aid web site at [fa.nmsu.edu](http://fa.nmsu.edu).

## Scholarships and Other Aid

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

The NMSU System offers a variety of scholarships to incoming freshman, transfer, continuing and graduate students. State, institutional and private scholarships may also be available but amounts, deadlines and eligibility requirements vary. For more information, contact University Financial Aid and Scholarship Services or visit the university's

scholarship web site at [fa.nmsu.edu/scholarships](http://fa.nmsu.edu/scholarships) (<http://fa.nmsu.edu/scholarships/>)

To be considered for most scholarships through the NMSU System you are required to apply online through Scholar Dollar\$, at [scholarships.nmsu.edu](https://scholarships.nmsu.edu) (<https://scholarships.nmsu.edu/>) each academic year. One scholarship application serves all students in the NMSU system, regardless of campus.

## Federal Direct Subsidized Loans

This is a loan program for eligible undergraduate students who demonstrate financial need. The U.S. Department of Education pays the interest on a Direct Subsidized Loan while the student is enrolled in school at least half-time (six-credit hours).

All undergraduate students who borrow for the first time after July 1, 2013 are subject to a maximum-time period to receive Federal Direct Subsidized Loans. Students may not receive Federal Direct Subsidized Loans for more than 150% of the published length of their academic program (measured in academic years). A complete explanation of Subsidized Loan usage limits is available at: [fa.nmsu.edu/loans/federal-direct-loans](http://fa.nmsu.edu/loans/federal-direct-loans). (<https://fa.nmsu.edu/loans/>)

## Federal Direct Unsubsidized Loans

Loans that are not need-based and offered to eligible undergraduate and graduate students. Unlike other federal loans, interest accrues while the student is attending school.

## Federal Direct Loan Requirements

Students receiving a subsidized or unsubsidized Federal Direct Loan, must complete an online Entrance Counseling session and a Master Promissory Note (MPN) before NMSU will issue the funds. In addition, students are required to complete the Student Loan Acknowledgment every academic year. Once Federal Loan Borrowers graduate, or withdraw from the institution, they must complete the Exit Counseling to avoid delays in receiving their transcripts or diplomas. Students may complete all these requirements at [studentaid.gov](https://studentaid.gov) (<https://studentaid.gov>).

Repayment of a Federal Direct loan begins six months after graduation or six months after enrollment drops below half time (less than six credits for undergraduate students and less than 5 credits for graduate students).

## Withdrawals

Recipients of financial aid grants and loans who stop attending class, drop credit hours, or withdraw may be required to return all or a portion of awarded Title IV funds. Further information regarding the Return of Title IV funds is available on the NMSU-Las Cruces web site at [fa.nmsu.edu/return-of-title-iv-funds](http://fa.nmsu.edu/return-of-title-iv-funds) (<https://fa.nmsu.edu/title-iv/>).

## Major Scholarships for Entering Freshmen

For consideration, students must be admitted (tentative or final) to NMSU by March 1, and meet eligibility criteria at that time. Students must be NM residents and graduate from a New Mexico High School, NM GED or HiSet. Students must enroll within 16 months following high school/GED/HiSet graduation to be considered for the NM Lottery Scholarship, which is awarded the second semester attending NMSU Grants. Recipients must be enrolled in a degree-seeking program.

A FAFSA application is or may be required for most scholarships. Scholarships are competitive and number of awards granted is limited.

**NMSU Grants Tuition Scholarship:** Requirements: minimum 2.5 GPA cumulative GPA and 12 graded credits each semester. High School Seniors and current students are advised to apply early. Priority deadline is March 1.

## Financial Aid Satisfactory Academic Progress

Federal regulations require that financial aid recipients meet certain academic standards to be eligible for federal aid. The NMSU Office of Financial Aid will review the Satisfactory Academic Progress of financial aid recipients at the end of each payment term/semester to ensure continued eligibility. When evaluating SAP, all enrollment periods are considered regardless of whether the student received financial aid during those terms. For transfer students, credits accepted for their NMSU-degree program are counted toward Maximum Timeframe, but the transfer GPA is not calculated in the cumulative GPA for the Completion Rate. The Financial Aid SAP standards are not the same as the NMSU System's Academic Standards of Progress criteria. Students may learn more by visiting [fa.nmsu.edu/sap](http://fa.nmsu.edu/sap).

### Elements of Financial Aid Satisfactory Academic Progress

- Federal regulations require all students receiving financial aid to meet minimum qualitative and quantitative standards in order to maintain their eligibility for aid. Below are the minimum standards for SAP. The qualitative component of SAP measures a student's academic achievement by their cumulative GPA. The quantitative component is comprised of two parts: Completion Rate and Maximum Timeframe. Below are the descriptions of each SAP standard:

#### Grade Point Average (GPA)

- Undergraduate students must maintain a 2.0 cumulative GPA or greater on all hours attempted at NMSU. This is equivalent to an average letter grade of "C" or better.
- Graduate students must maintain a 3.0 cumulative GPA or greater. This is equivalent to an average letter grade of "B" or better.
- **Completion Rate: Pace of Progression**
- All students, both undergraduate and graduate are required to pass and complete 70% of all classes attempted.
- Grades of F, W, U, I or RR will be considered hours attempted but not completed.
- **Maximum Time Frame: Pace of Progression**
- Students must attain their degree within 150% of the published credits required for a degree program.
- Transfer-credit hours counted towards the student's degree program will be included in the maximum timeframe.
- Limited developmental coursework will not count in the maximum timeframe.

## Financial Aid Warning

"Warning" is a status assigned to a student who fails to meet satisfactory academic progress at the end of the payment term/semester. A student on Financial Aid warning may continue to receive financial aid for one payment term while in this status. If the student has not returned to satisfactory standing after this additional semester, they will be

suspended from further financial assistance until the satisfactory progress standards are met.

## Financial Aid Suspension

Students who do not meet the SAP standards will be placed on Financial Aid Suspension. Students who have their financial aid revoked due to the failure to meet the SAP standards are ineligible to receive financial aid and are responsible for payment of their own tuition and fees. Students will remain on financial aid suspension until they are able to meet both the quantitative and qualitative SAP standards, or have an appeal approved by the campus' Financial Aid Office.

## Contact Information

For more information, contact:

Las Cruces Campus University Financial Aid and Scholarship Services  
MSC 5100  
PO Box 30001  
Las Cruces, NM 88003-8001  
Phone: (575) 646-4105

Email: [financialaid@nmsu.edu](mailto:financialaid@nmsu.edu)

<http://fa.nmsu.edu/> (<http://fa.nmsu.edu/>)

### NMSU Grants

1500 N. Third Street  
Grants, NM 87020  
Phone: (505) 287-6678  
<https://grants.nmsu.edu/webpages/student-services/fa.html>

## General Education Requirements

### Associate's Degree

#### The New Mexico General Education Requirements

General Education at NMSU provides all students with a broad foundation and common framework upon which to develop knowledge and skills, social consciousness and respect for self and others, thus enabling them to function responsibly and effectively now and in the future. General education courses at NMSU can be identified by the G suffix.

In accordance to state law (Post-Secondary Education Articulation Act) (<https://www.srca.nm.gov/parts/title05/05.055.0006.html>), the New Mexico Higher Education Department has established a state-wide model for General Education. Within the General Education model, is nine credits of electives that will be determined at an institutional level. The current approved NMSU General Education courses are listed below under each of the six general education areas.

| Prefix                                 | Title                                    | Credits   |
|--|--|-----------|
| <b>Area I: Communications</b>          |  | <b>10</b> |
| Select one course from each sub group: |  |           |
| <i>English Composition-Level 1</i>     |  |           |
| ENGL 1110G                             | Composition I                            |           |
| ENGL 1110H                             | Composition I Honors                     |           |
| ENGL 1110M                             | Composition I Multilingual               |           |
| <i>English Composition-Level 2</i>     |  |           |
| ENGL 2130G                             | Advanced Composition                     |           |
| ENGL 2210G                             | Professional and Technical Communication |           |

|   |  |
|---|--|
| ENGL 2210H  | Professional and Technical Communication Honors  |
| ENGL 2210M  | Professional and Technical Communication for Multilingual Students   |
| ENGL 2215G  | Advanced Technical and Professional Communication  |
| ENGL 2221G  | Writing in the Humanities and Social Science   |
| <i>Oral Communication</i>   |  |
| ACOM 1130G  | Effective Leadership and Communication in Agriculture  |
| COMM 1115G  | Introduction to Communication  |
| COMM 1130G  | Public Speaking  |
| HNRS 2175G  | Introduction to Communication Honors   |
| <b>Area II: Mathematics</b>   | <b>3-4</b>   |
| MATH 1130G  | Survey of Mathematics  |
| MATH 1220G  | College Algebra  |
| MATH 1250G  | Trigonometry & Pre-Calculus  |
| MATH 1350G  | Introduction to Statistics   |
| MATH 1430G  | Applications of Calculus I   |
| MATH 1511G  | Calculus and Analytic Geometry I   |
| MATH 1521G  | Calculus and Analytic Geometry II  |
| MATH 1521H  | Calculus and Analytic Geometry II Honors   |
| MATH 2134G  | Fundamentals of Elementary Math II   |
| MATH 2350G  | Statistical Methods  |
| MATH 2530G  | Calculus III   |
| <b>Area III/IV: Laboratory Sciences and Social/Behavioral Sciences <sup>1</sup></b> | <b>10-11</b>   |
| <i>Area III: Laboratory Sciences</i>  |  |
| AGRO 1110G/<br>HORT 1115G   | Introduction to Plant Science (Lecture & Lab)  |
| ANTH 1135G<br>& ANTH 1135L  | Introduction to Biological Anthropology and Introduction to Biological Anthropology Lab  |
| ASTR 1115G  | Introduction to Astronomy Lecture & Laboratory   |
| ASTR 1120G  | The Planets Lecture & Laboratory   |
| BIOL 1120G<br>& BIOL 1120L  | Human Biology and Human Biology Laboratory   |
| BIOL 1130G  | Introductory Anatomy & Physiology (non-majors)   |
| BIOL 1190G  | Contemporary Problems in Biology   |
| BIOL 2110G<br>& BIOL 2110L  | Principles of Biology: Cellular and Molecular Biology and Principles of Biology: Cellular and Molecular Biology Laboratory             |
| BIOL 2610G<br>& BIOL 2610L  | Principles of Biology: Biodiversity, Ecology, and Evolution and Principles of Biology: Biodiversity, Ecology, and Evolution Laboratory |
| C S 171G  | Modern Computing in Practice   |
| CHEM 1120G  | Introduction to Chemistry Lecture and Laboratory (non majors)  |
| CHEM 1215G  | General Chemistry I Lecture and Laboratory for STEM Majors   |
| CHEM 1225G  | General Chemistry II Lecture and Laboratory for STEM Majors  |
| EPWS 1110G<br>& EPWS 1110L  | Applied Biology and Applied Biology Lab  |
| ENVS 1110G  | Environmental Science I  |
| FSTE 2110G  | Food Science I   |

|  |   |
|--|---|
| FWCE 1110G                                 | Introduction to Natural Resources Management  |
| GEOG 1110G                                 | Physical Geography  |
| GEOL 1110G                                 | Physical Geology  |
| HNRS 1135G<br>& HNRS 1135L                 | Introduction to Biological Anthropology and Introduction to Biological Anthropology Lab   |
| HNRS 2116G                                 | Earth, Time and Life  |
| PHYS 1115G                                 | Survey of Physics with Lab  |
| PHYS 1125G                                 | Physics of Music  |
| PHYS 1230G<br>& PHYS 1230L                 | Algebra-Based Physics I and Algebra-Based Physics I Lab                                   |
| PHYS 1240G<br>& PHYS 1240L                 | Algebra-Based Physics II and Algebra-Based Physics II Lab                                 |
| PHYS 1310G<br>& PHYS 1310L                 | Calculus -Based Physics I and Calculus -Based Physics I Lab                               |
| PHYS 1320G<br>& PHYS 1320L                 | Calculus -Based Physics II and Calculus -Based Physics II Lab                             |
| PHYS 2230G<br>& PHYS 2230L                 | General Physics for Life Science I and Laboratory to General Physics for Life Science I   |
| PHYS 2240G<br>& PHYS 2240L                 | General Physics for Life Science II and Laboratory to General Physics for Life Science II |
| <i>Area IV: Social/Behavioral Sciences</i> |   |
| AEEC 2130G                                 | Survey of Food and Agricultural Issues  |
| ANTH 1115G                                 | Introduction to Anthropology  |
| ANTH 1140G                                 | Introduction to Cultural Anthropology   |
| ANTH 1160G                                 | World Archaeology   |
| ANTH 2140G                                 | Indigenous Peoples of North America   |
| BEST 1110G                                 | Introduction to Borderlands and Ethnic Studies  |
| BUSA 2230G                                 | Human Relations in Business   |
| CEPY 1120G                                 | Human Growth and Behavior   |
| CJUS 1110G                                 | Introduction to Criminal Justice  |
| ECON 1110G                                 | Survey of Economics   |
| ECON 2110G                                 | Macroeconomic Principles  |
| ECON 2120G                                 | Microeconomics Principles   |
| ECON 2120H                                 | Principles of Microeconomics Honors   |
| FSTE 2130G                                 | Survey of Food and Agricultural Issues  |
| GEOG 1120G                                 | World Regional Geography  |
| GEOG 1130G                                 | Human Geography   |
| GNDR 2110G                                 | Introduction to Women, Gender, and Sexuality Studies                                      |
| GNDR 2120G                                 | Representing Women Across Cultures  |
| HNRS 2161G                                 | Window of Humanity  |
| HNRS 2170G                                 | The Human Mind  |
| HNRS 2172G                                 | Archaeology: Search for the Past  |
| HNRS 2180G                                 | Citizen and State Great Political Issues  |
| HRTM 1120G                                 | Introduction to Tourism   |
| JOUR 105G                                  | Media and Society   |
| LING 2110G                                 | Introduction to the Study of Language and Linguistics                                     |
| PHLS 1110G                                 | Personal Health & Wellness  |
| PHLS 1110H                                 | Personal Health and Wellness Honors   |
| POLS 1110G                                 | Introduction to Political Science   |
| POLS 1120G                                 | American National Government  |
| POLS 1130G                                 | Issues in American Politics   |
| POLS 2120G                                 | International Relations   |
| PSYC 1110G                                 | Introduction to Psychology  |

|  |   |
|--|---|
| SOCI 1110G                             | Introduction to Sociology                                   |
| SOCI 2310G                             | Contemporary Social Problems                                |
| SOWK 2110G                             | Introduction to Human Services & Social Work                |
| <b>Area V: Humanities</b>              | <b>3</b>  |
| AFST 1110G                             | Introduction to Africana Studies                            |
| AFST 2110G                             | African American History                                    |
| AFST 2140G                             | Black Women in the African Diaspora                         |
| CCST 2110G                             | Introduction to Chicana and Chicano Studies                 |
| ENGL 1410G                             | Introduction to Literature                                  |
| ENGL 2520G                             | Film as Literature  |
| ENGL 2650G                             | World Literature I  |
| FREN 2120G                             | French IV   |
| FREN 2135G                             | Frontiers and Border Crossings in the French-Speaking World |
| HIST 1110G                             | United States History I                                     |
| HIST 1120G                             | United States History II                                    |
| HIST 1130G                             | World History I   |
| HIST 1140G                             | World History II  |
| HIST 1150G                             | Western Civilization I                                      |
| HIST 1160G                             | Western Civilization II                                     |
| HIST 2245G                             | Islamic Civilizations to 1800                               |
| HIST 2246G                             | Islamic Civilizations since 1800                            |
| HIST 2250G                             | East Asia to 1600   |
| HIST 2251G                             | East Asia since 1600  |
| HNRS 2117G                             | The World of the Renaissance: Discovering the Modern        |
| HNRS 2140G                             | Plato and the Discovery of Philosophy                       |
| HNRS 2141G                             | Bamboo and Silk: The Fabric of Chinese Literature           |
| HNRS 2145G                             | Celtic Literature   |
| HNRS 2160G                             | New Testament as Literature                                 |
| HNRS 2165G                             | Introduction to Humanities in the 21st Century              |
| HNRS 2190G                             | Claiming a Multiracial Past                                 |
| NATV 1150G                             | Introduction to Native American Studies                     |
| PHIL 1115G                             | Introduction to Philosophy                                  |
| PHIL 1120G                             | Logic, Reasoning, & Critical Thinking                       |
| PHIL 1140G                             | Philosophy and World Religions                              |
| PHIL 1145G                             | Philosophy, Law, and Ethics                                 |
| PHIL 2110G                             | Introduction to Ethics                                      |
| PHIL 2230G                             | Philosophical Thought                                       |
| <b>Area VI: Creative and Fine Arts</b> | <b>3</b>  |
| ARTH 1115G                             | Orientation in Art  |
| ARTH 2110G                             | History of Art I  |
| ARTH 2120G                             | History of Art II   |
| ARTS 1145G                             | Visual Concepts   |
| DANC 1110G                             | Dance Appreciation  |
| ENGL 2310G                             | Introduction to Creative Writing                            |
| HNRS 2114G                             | Music in Time and Space                                     |
| HNRS 2115G                             | Encounters with Art   |
| HNRS 2130G                             | Shakespeare on Film   |
| HNRS 2178G                             | Theatre: Beginnings to Broadway                             |
| MUSC 1110G                             | Music Appreciation: Jazz                                    |
| MUSC 1130G                             | Music Appreciation: Western Music                           |
| THEA 1110G                             | Introduction to Theatre                                     |
| THEA 1210G                             | Acting for Non-Majors                                       |

**General Education Elective**

3-4

This requirement can be met with any "G" course in any area, excluding Area I: Communications and any crosslisted courses, that exceeds the minimum requirement.

or

ENGR 100G Introduction to Engineering  
or ENGR 100GH Introduction to Engineering Honors

**Total Credits****32-35**

<sup>1</sup> For Area III: Laboratory Sciences and Area IV: Social/Behavioral Sciences, students **must** take one course from each for a total of 7 credits.

Students will then take an additional course in either Area III or Area IV for 3-4 credits depending on the students selection (i.e. Area III is 4 credits, Area IV is 3 credits).

**Alternatives for Meeting General Education Requirements (9 credit hour rule)**

Students taking nine or more credits in a specific subject area, even though the courses are not designated as General Education courses, will have met the general education requirements for that subject area. The courses can meet both major and general education requirements for the degree. For example, a student may complete ARTS 2610 Drawing II, ARTS 1240 Design I and ARTS 1250 Design II (9 hours) and thereby satisfy one course from the Area VI: Creative and Fine Arts category even though none of those courses carries a G suffix. Please check with the Center for Academic Advising and Student Support.

**Applied Associate Degree****The New Mexico General Education Requirements**

General Education at NMSU provides all students with a broad foundation and common framework upon which to develop knowledge and skills, social consciousness and respect for self and others, thus enabling them to function responsibly and effectively now and in the future. General education courses at NMSU can be identified by the G suffix.

In accordance to state law (Post-Secondary Education Articulation Act) (<https://www.srca.nm.gov/parts/title05/05.055.0006.html>), the New Mexico Higher Education Department has established a state-wide model for General Education. Within the General Education model, is nine credits of electives that will be determined at an institutional level. The current approved NMSU General Education courses are listed below under each of the six general education areas.

| Prefix   | Title | Credits      |
|--|-------|--------------|
| <b>Select one course from four of the following six content areas for a total of 12-14 credits</b> |       | <b>12-14</b> |

Each course selected must be from a different area and students cannot take multiple courses in the same area.

*Area I: Communications*

|            |   |
|------------|---|
| ACOM 1130G | Effective Leadership and Communication in Agriculture |
| COMM 1115G | Introduction to Communication                         |
| COMM 1130G | Public Speaking                                       |
| ENGL 1110G | Composition I   |
| ENGL 1110H | Composition I Honors                                  |
| ENGL 1110M | Composition I Multilingual                            |
| ENGL 2130G | Advanced Composition                                  |
| ENGL 2210G | Professional and Technical Communication              |
| ENGL 2210H | Professional and Technical Communication Honors       |

|            |  |
|------------|--|
| ENGL 2210M | Professional and Technical Communication for Multilingual Students |
| ENGL 2215G | Advanced Technical and Professional Communication                  |
| ENGL 2221G | Writing in the Humanities and Social Science                       |
| HNRS 2175G | Introduction to Communication Honors                               |

*Area II: Mathematics*

|            |  |
|------------|--|
| MATH 1130G | Survey of Mathematics                    |
| MATH 1220G | College Algebra                          |
| MATH 1250G | Trigonometry & Pre-Calculus              |
| MATH 1350G | Introduction to Statistics               |
| MATH 1430G | Applications of Calculus I               |
| MATH 1511G | Calculus and Analytic Geometry I         |
| MATH 1521G | Calculus and Analytic Geometry II        |
| MATH 1521H | Calculus and Analytic Geometry II Honors |
| MATH 2134G | Fundamentals of Elementary Math II       |
| MATH 2350G | Statistical Methods                      |
| MATH 2530G | Calculus III                             |

*Area III: Laboratory Sciences*

|                            |  |
|----------------------------|--|
| AGRO 1110G/<br>HORT 1115G  | Introduction to Plant Science (Lecture & Lab)  |
| ANTH 1135G<br>& ANTH 1135L | Introduction to Biological Anthropology and Introduction to Biological Anthropology Lab  |
| ASTR 1115G                 | Introduction to Astronomy Lecture & Laboratory   |
| ASTR 1120G                 | The Planets Lecture & Laboratory   |
| BIOL 1120G<br>& BIOL 1120L | Human Biology and Human Biology Laboratory   |
| BIOL 1130G                 | Introductory Anatomy & Physiology (non-majors)   |
| BIOL 1190G                 | Contemporary Problems in Biology   |
| BIOL 2110G<br>& BIOL 2110L | Principles of Biology: Cellular and Molecular Biology and Principles of Biology: Cellular and Molecular Biology Laboratory             |
| BIOL 2610G<br>& BIOL 2610L | Principles of Biology: Biodiversity, Ecology, and Evolution and Principles of Biology: Biodiversity, Ecology, and Evolution Laboratory |
| C S 171G                   | Modern Computing in Practice   |
| CHEM 1120G                 | Introduction to Chemistry Lecture and Laboratory (non majors)  |
| CHEM 1215G                 | General Chemistry I Lecture and Laboratory for STEM Majors   |
| CHEM 1225G                 | General Chemistry II Lecture and Laboratory for STEM Majors  |
| CHEM 1215G                 | General Chemistry I Lecture and Laboratory for STEM Majors   |
| CHEM 1225G                 | General Chemistry II Lecture and Laboratory for STEM Majors  |
| EPWS 1110G<br>& EPWS 1110L | Applied Biology and Applied Biology Lab  |
| ENVS 1110G                 | Environmental Science I  |
| FSTE 2110G                 | Food Science I   |
| FWCE 1110G                 | Introduction to Natural Resources Management   |
| GEOG 1110G                 | Physical Geography   |
| GEOL 1110G                 | Physical Geology   |

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|----------------------------|---|
| HNRS 1135G<br>& HNRS 1135L | Introduction to Biological Anthropology and Introduction to Biological Anthropology Lab   |
| HNRS 2116G                 | Earth, Time and Life  |
| PHYS 1115G                 | Survey of Physics with Lab  |
| PHYS 1125G                 | Physics of Music  |
| PHYS 1230G<br>& PHYS 1230L | Algebra-Based Physics I and Algebra-Based Physics I Lab                                   |
| PHYS 1240G<br>& PHYS 1240L | Algebra-Based Physics II and Algebra-Based Physics II Lab                                 |
| PHYS 1310G<br>& PHYS 1310L | Calculus -Based Physics I and Calculus -Based Physics I Lab                               |
| PHYS 1320G<br>& PHYS 1320L | Calculus -Based Physics II and Calculus -Based Physics II Lab                             |
| PHYS 2230G<br>& PHYS 2230L | General Physics for Life Science I and Laboratory to General Physics for Life Science I   |
| PHYS 2240G<br>& PHYS 2240L | General Physics for Life Science II and Laboratory to General Physics for Life Science II |

*Area IV: Social/Behavioral Sciences*

|                 |   |
|-----------------|---|
| AEEC/FSTE 2130G | Survey of Food and Agricultural Issues                |
| ANTH 1115G      | Introduction to Anthropology                          |
| ANTH 1140G      | Introduction to Cultural Anthropology                 |
| ANTH 1160G      | World Archaeology                                     |
| ANTH 2140G      | Indigenous Peoples of North America                   |
| BEST 1110G      | Introduction to Borderlands and Ethnic Studies        |
| BUSA 2230G      | Human Relations in Business                           |
| CEPY 1120G      | Human Growth and Behavior                             |
| CJUS 1110G      | Introduction to Criminal Justice                      |
| ECON 1110G      | Survey of Economics                                   |
| ECON 2110G      | Macroeconomic Principles                              |
| ECON 2120G      | Microeconomics Principles                             |
| ECON 2120H      | Principles of Microeconomics Honors                   |
| GEOG 1120G      | World Regional Geography                              |
| GEOG 1130G      | Human Geography                                       |
| GNDR 2110G      | Introduction to Women, Gender, and Sexuality Studies  |
| GNDR 2120G      | Representing Women Across Cultures                    |
| HNRS 2161G      | Window of Humanity                                    |
| HNRS 2170G      | The Human Mind  |
| HNRS 2172G      | Archaeology: Search for the Past                      |
| HNRS 2180G      | Citizen and State Great Political Issues              |
| HRTM 1120G      | Introduction to Tourism                               |
| JOUR 105G       | Media and Society                                     |
| LING 2110G      | Introduction to the Study of Language and Linguistics |
| PHLS 1110G      | Personal Health & Wellness                            |
| PHLS 1110H      | Personal Health and Wellness Honors                   |
| POLS 1110G      | Introduction to Political Science                     |
| POLS 1120G      | American National Government                          |
| POLS 1130G      | Issues in American Politics                           |
| POLS 2120G      | International Relations                               |
| PSYC 1110G      | Introduction to Psychology                            |
| SOCI 1110G      | Introduction to Sociology                             |
| SOCI 2310G      | Contemporary Social Problems                          |
| SOWK 2110G      | Introduction to Human Services & Social Work          |

*Area V: Humanities*

|            |                                  |
|------------|----------------------------------|
| AFST 1110G | Introduction to Africana Studies |
|------------|----------------------------------|

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|--|---|
| AFST 2110G                             | African American History                                    |
| AFST 2140G                             | Black Women in the African Diaspora                         |
| CCST 2110G                             | Introduction to Chicana and Chicano Studies                 |
| ENGL 1410G                             | Introduction to Literature                                  |
| ENGL 2520G                             | Film as Literature  |
| ENGL 2650G                             | World Literature I  |
| FREN 2120G                             | French IV   |
| FREN 2135G                             | Frontiers and Border Crossings in the French-Speaking World |
| HIST 1110G                             | United States History I                                     |
| HIST 1120G                             | United States History II                                    |
| HIST 1130G                             | World History I   |
| HIST 1140G                             | World History II  |
| HIST 1150G                             | Western Civilization I                                      |
| HIST 1160G                             | Western Civilization II                                     |
| HIST 2245G                             | Islamic Civilizations to 1800                               |
| HIST 2246G                             | Islamic Civilizations since 1800                            |
| HIST 2250G                             | East Asia to 1600   |
| HIST 2251G                             | East Asia since 1600  |
| HNRS 2117G                             | The World of the Renaissance: Discovering the Modern        |
| HNRS 2140G                             | Plato and the Discovery of Philosophy                       |
| HNRS 2141G                             | Bamboo and Silk: The Fabric of Chinese Literature           |
| HNRS 2145G                             | Celtic Literature   |
| HNRS 2160G                             | New Testament as Literature                                 |
| HNRS 2165G                             | Introduction to Humanities in the 21st Century              |
| HNRS 2190G                             | Claiming a Multiracial Past                                 |
| NATV 1150G                             | Introduction to Native American Studies                     |
| PHIL 1115G                             | Introduction to Philosophy                                  |
| PHIL 1120G                             | Logic, Reasoning, & Critical Thinking                       |
| PHIL 1140G                             | Philosophy and World Religions                              |
| PHIL 1145G                             | Philosophy, Law, and Ethics                                 |
| PHIL 2110G                             | Introduction to Ethics                                      |
| PHIL 2230G                             | Philosophical Thought                                       |
| <b>Area VI: Creative and Fine Arts</b> |   |
| ARTH 1115G                             | Orientation in Art  |
| ARTS 1145G                             | Visual Concepts   |
| ARTH 2110G                             | History of Art I  |
| ARTH 2120G                             | History of Art II   |
| DANC 1110G                             | Dance Appreciation  |
| ENGL 2310G                             | Introduction to Creative Writing                            |
| HNRS 2114G                             | Music in Time and Space                                     |
| HNRS 2115G                             | Encounters with Art   |
| HNRS 2130G                             | Shakespeare on Film   |
| HNRS 2178G                             | Theatre: Beginnings to Broadway                             |
| MUSC 1110G                             | Music Appreciation: Jazz                                    |
| MUSC 1130G                             | Music Appreciation: Western Music                           |
| THEA 1110G                             | Introduction to Theatre                                     |
| THEA 1210G                             | Acting for Non-Majors                                       |

**General Education Elective**

3-4

This requirement can be met with any "G" course in any area, excluding any crosslisted courses.

or

ENGR 100G Introduction to Engineering

or ENGR 100GH Introduction to Engineering Honors

**Total Credits****15-18****Alternatives for Meeting General Education Requirements (9 credit hour Rule)**

Students taking nine or more credits in a specific subject area, even though the courses are not designated as General Education courses, will have met the general education requirements for that subject area. The courses can meet both major and general education requirements for the degree. For example, a student may complete ARTS 2610 Drawing II, ARTS 1240 Design I and ARTS 1250 Design II (9 hours) and thereby satisfy one course from the Area VI: Creative and Fine Arts category even though none of those courses carries a G suffix. Please check with the Center for Academic Advising and Student Support.

## 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 (<https://catalogs.nmsu.edu/nmsu/regulations-policies/#academicprogramsofstudytext>) 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 (<https://catalogs.nmsu.edu/nmsu/tuition-fees-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 (<https://commencement.nmsu.edu/apply-to-graduate/>). 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, degree candidates who 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 Academic 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 are being offered in the upcoming summer schedule of classes
5. Submit a degree application and approved petition form (available in the Dean's office of the student's primary major) by the late application deadline 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 University Student Records. 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.

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 courses 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.

## 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 complete the total number of credit hours 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 within the NMSU system including Las Cruces Main Campus, Global Campus, and 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.

## International Students

### International Student Admission

International students are an essential and valuable part of the NMSU community. International students are subject to different responsibilities than domestic students and must ensure to follow federal regulations to maintain their status. The Office of International Student and Scholar Services (ISSS) ensures these requirements are met and works with international students to maintain their immigration status. Some students not seeking degrees, such as international exchange students, may work directly with the Office of Education Abroad.

### Federal Regulations

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 the following:

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 three online credits can apply to the full-time requirement).
  - b. Full-time status for fall and spring semesters is defined as 9 or more credits for graduate students (only three online credits can apply to the full-time requirement).
  - c. Full-time status for summer is defined according to NMSU requirements. 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. Before 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

### Undergraduate Admission

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 post-secondary institution attended. The ISSS department highly recommends that applicants consider using SpanTran for their FCE. NMSU has worked with SpanTran to provide applicants with a clear understanding 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://spantran.com/web/>

### Undergraduate – New

- GPA requirement of 2.75 or higher
- Minimum TOEFL of 68 iBT, or 6.0 IELTS, or Duolingo 95 or higher
- Secondary school equivalency with a minimum 2.75 GPA or ACT composite score of 21 or SAT score of 1060 or Ranked in the top 20 percent of their high school graduating class or a GED cumulative score of 480 or HiSET cumulative score of 45.

### Undergraduate – Transfer

- 2.00 or better GPA on transfer college or university credits.
- 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).

### English Language Proficiency Requirements

For undergraduate admission to the university, NMSU requires a score of 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 (DET) for international students for both non-degree and degree seeking. International students attending another US institution and having a valid I-20 may enroll as a non-degree seeking student and take course(s) at the undergraduate level.

Students who are citizens from one of the following countries will be exempt from providing a TOEFL, IELTS, or DET score for admission purposes. NMSU requires all admitted international students to take the English Language Placement Test (ELPT) for placement purposes.

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

For students not from the countries listed above, a waiver of the TOEFL/ IELTS/DET requirement may be considered for:

1. Students completing high school in the United States who have attended the high school for at least two full years.
2. Students transferring from an institutional accredited two-year college, community college, or university in the United States who have earned a minimum of 24 semester credits or 36 quarter credits (all classes having English as the language of instruction) with a GPA of 2.0.
3. The university reserves the right to require any prospective international student to meet the TOEFL, IELTS or DET requirement.

All application material, 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 Undergraduate Admissions at [admissions@nmsu.edu](mailto:admissions@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 should be emailed to [admissions@nmsu.edu](mailto:admissions@nmsu.edu).

### Admission Restrictions

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

### Admission Deadlines

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

|  |                 |
|--|-----------------|
| July 1 (application initiated)         | Fall Semester   |
| July 15th (all documents submitted)    | Fall Semester   |
| October 1st* (Study Abroad)            | Spring Semester |
| November 15th (application initiated)  | Spring Semester |
| December 1st (all documents submitted) | Spring Semester |

## Post Admission

### Immigration Document Requirement (I-20)

1. Valid passport
2. Each prospective international student must submit a current financial support document with their application. This document must show that:
3. Availability of liquid funds to support the student's education and other related expenses for at least one academic year.
4. Proof of adequate financial support should be sent directly to ISSS.
5. Affidavit of Support Form provided by ISSS

## Post Arrival

### 1. Aggie Welcome and Orientation

Orientation for all new first-time and transfer students is mandatory. At NMSU's Aggie Welcome and Orientation (AWO) programs, students will attend information sessions, learn about campus resources and college life, meet with an academic advisor, and register for classes

More information about Aggie Welcome and Orientation is available at <https://awo.nmsu.edu/>.

### 2. 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 in 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.

### 3. Mandatory SEVIS check-in

SEVIS check-in is orientation for new and transfer international students and it is mandatory to attend. This is a federal requirement for students to comply. Mandatory SEVIS check-in MUST be completed by all new and transfer students one day before classes begin depending on the semester they are admitted to. The location of the Sevis check-in will be communicated by the ISSS office.

### 4. Canvas Course & Document Upload Portal

The Canvas Course & Document Upload Portal is mandatory for new undergraduate and graduate international students to NMSU. Students will receive an email invitation to the course once they have set up their NMSU email address.

\*\*\* All the 4 items listed above must be completed by New and Transfer International students.

## Graduate International Students

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

## Miscellaneous Regulations

### Health Insurance

New Mexico State University (NMSU) requires all F-1 international students studying at NMSU to have health insurance coverage. It is the student's responsibility to purchase and maintain health insurance coverage while enrolled at NMSU. The health insurance coverage must cover the student while they are physically present in the U.S. including summer and winter breaks. NMSU will provide an educative role whereby NMSU will inform international graduate students with their options for obtaining health insurance along with the advantages and disadvantages of each option and allow the students to make an informed decision on their own.

**Canvas Health Insurance Course** - All new international students at NMSU are required to complete the Canvas Health Insurance Course. Students will be sent a link to the course after they have enrolled in classes and activated their NMSU email address. Participation in the course is mandatory. Completion of the course acknowledges that you have been provided with the information necessary to make an informed decision regarding the purchase of your health insurance coverage. It acknowledges that you understand the pros and cons of the plan you selected, including **taxes and potential complications during subsequent change of status procedures.**

1. New international students are not permitted to enroll in classes until all ISSS requirements are met, including attending Aggie Welcome and Orientation, the Mandatory SEVIS Check-in Session, and taking the English Language Placement Test (when applicable, see English Language Proficiency Requirements section). All international students, are required 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, Suite 101 of the Educational Services Building (575) 646-2834, [iss@nmsu.edu](mailto:iss@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, Sufficient classroom-based courses are not available to maintain visa status (e.g., courses are online).
  - c. Alamogordo Community College: Office of Student Services, Student Services Building, second floor
  - d. Grants Community College: Office of Student Services, Walter Martinez Building, Main Office Complex
2. Students in non-degree exchange J-1 visa status must be engaged full time in a prescribed course of study. Consult the Education Abroad Office for more details.
3. 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.

TB test done in the home country within a week of arriving. Guidelines will be provided by the Aggie Health and Wellness Center.

## 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 one of NMSU's partner consortiums.

All international exchange students are required to be enrolled in NMSU-approved health insurance. Education Abroad & National Student Exchange 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. Orientation will be scheduled and facilitated by the Education Abroad & National Student Exchange, 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 Education Abroad & National Student Exchange 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 a nomination is received, students will be directed to make an account at: <https://educationabroad.nmsu.edu/incoming-exchange-students.html>.
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 \$8,000 per semester attended.
4. Current TOEFL scores (2 years or less). See below for acceptable scores. Information on current test scores can be found at Education Abroad & National Student Exchange's website: <https://educationabroad.nmsu.edu/exchange-students-application-deadlines-and-processes.html>. All international students, regardless of status, must apply for Admissions to NMSU. Education Abroad & National Student Exchange staff will send the students specific instructions on how to apply non-degree, guest matriculant to NMSU.

### Academic Restrictions

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

- Courses must be taken at the Main Campus only. Community college courses, including DACC, are not available to Exchange Students.
- The Nursing Department is the only department 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 three credits can be taken online. Additional fees will apply).

## Military and Veterans Programs (MVP)

### About MVP

New Mexico State University (NMSU) is a military and veteran-friendly university that strives to provide the best possible service for our military, veteran, and their dependents as they pursue their educational goals. NMSU Military and Veterans Programs promotes lifelong learning and professional development by offering:

- In-state tuition rates for active-duty military and their dependents stationed at regional military installations (including Ft. Bliss); or those eligible for U.S. Department of Defense (DoD) Tuition Assistance (TA) or U.S. Department of Veterans Affairs (VA) education benefits
- Transferable military credits that count toward degrees at NMSU
- Facilitation of MyCAA military spouse benefits and DoD TA
- Advocacy from admission to graduation
- Student Veteran Housing for student veterans and their families
- Priority registration for military and veteran students
- Aggie Green Zone Training, educating faculty and staff about our military and veteran students and the unique value they bring to campus
- SALUTE National Honor Society for student veterans
- Connection with the Student Veterans Organization (SVO) of NMSU
- Scholarships and Internship opportunities
- Veteran Mentorship Program, helping first-year student veterans transition to an academic setting successfully
- Processing of TA and VA education benefits
- Student Computer Lab and Lounge

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

For further information contact:

Military and Veterans Programs  
MSC 4740, PO Box 30001  
Las Cruces, NM 88003-8001  
(575) 646-4524  
<http://mvp.nmsu.edu>

### MVP Student Computer Lab and Lounge

The MVP Computer Lab is available to military, veteran, and dependent students. The lab has six computers with several common access card (CAC) readers. A CAC reader enables students to access military websites to complete their TA requests. The Computer Lab is open from 8 am - 5 pm Monday through Friday. We offer free copy and printing services to

accommodate our students. The MVP Student Lounge has comfortable furniture, a coffee station, a kitchen (microwave/refrigerator) area, and a place to study and relax between classes. Students enjoy free coffee while doing their homework and networking with like-minded students.

## Costs

### Active-Duty

Active-duty military personnel (U.S. Armed Forces) stationed in New Mexico or at Fort Bliss, Texas must complete a "Resident Tuition Application for Active Military, Veterans and Dependents of the U.S. Armed Forces" waiver to qualify for in-state tuition. Spouses and children of active-duty personnel stationed in New Mexico and Fort Bliss, Texas who are not otherwise entitled to claim in-state residency, may apply for in-state tuition by submitting a "Resident Tuition Application for Active Military, Veterans and Dependents of the U.S. Armed Forces" waiver to the Military and Veterans Programs. Waivers are available at <http://mvp.nmsu.edu>, (under the Forms tab) or through the University Student Records Office. Please contact MVP for the required documents needed to complete the waiver application.

### NMSU Global Campus

NMSU Global Campus (<https://global.nmsu.edu>) includes 100% online bachelor's, master's, graduate certificate, and doctoral programs within the NMSU system. NMSU Global Campus programs are designed to serve students who may not be able to pursue an education through traditional means. Active Duty students admitted to NMSU Global Campus must provide Military and Veterans Programs with supporting documentation to be assessed the Active Military \$250 per credit hour cost fixed rate. Please visit the Military Active-Duty Rate page from MVP or contact NMSU Global Campus at [globaladmissions@nmsu.edu](mailto:globaladmissions@nmsu.edu) or 800.662.6678 for more information.

### Dependents Receiving VA Educational Benefits

Per NM 2015 HB 427:

A spouse or child of a veteran of the armed forces is entitled to pay tuition and fees at the rate provided for New Mexico residents; provided that the spouse or child is eligible for benefits pursuant to the federal Post-9/11 Veterans Educational Assistance Act of 2008 or any other federal law authorizing educational benefits for a veteran and the dependents of a veteran. Students may complete a "Resident Tuition Application for Active Military, Veterans and Dependents of the U.S. Armed Forces" waiver to qualify for in-state tuition. Waivers are available at <http://mvp.nmsu.edu> (under the Forms tab), or through the University Student Records Office. Please contact MVP for the required documents needed to complete the waiver application.

### Veterans

Veterans receiving U.S. Department of Veterans Affairs education benefits are eligible for in-state tuition through the Veterans In-State Tuition Act by submitting a "Resident Tuition Application for Active Military, Veterans and Dependents of the U.S. Armed Forces" waiver to the Military and Veterans Programs. Waivers are available at <http://mvp.nmsu.edu> (under the Forms tab) or through the University Student Records Office. For further information concerning approved programs and the application process, eligible persons should contact Military and Veterans Programs.

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

- Montgomery GI Bill®-Active Duty (CH 30)
- Survivors' and Dependents' Educational Assistance (CH 35)
- Montgomery GI Bill®-Selected Reserve (CH 1606)

GI Bill® is a registered trademark of the U.S. Department of Veterans Affairs (VA). More information about education benefits offered by the VA is available at the official U.S. government website at <https://www.benefits.va.gov/gibill> (<https://www.benefits.va.gov/gibill/>).

## Allowing Veterans to Attend or Participate in Courses Pending VA Payment

### Background

Section 103 of Public Law (PL) 115-407, 'Veterans Benefits and Transition Act of 2018,' amends Title 38 US Code 3679 by adding a new subsection (e) that requires disapproval of courses of education, beginning August 1, 2019, at any educational institution that does not have a policy in place that will allow an individual to attend or participate in a course of education, pending VA payment, providing the individual submits a certificate of eligibility for entitlement to educational assistance under Chapter 31 or 33.

### Pending Payment Compliance

In accordance with Title 38 US Code 3679(e), New Mexico State University 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 Veteran Readiness and Employment (Ch. 31) benefits, while payment to the institution is pending from VA. New Mexico State University will not:

- Prevent the student's enrollment;
- Assess a late penalty fee to the student;
- Require the student to secure alternative or additional funding;
- Deny the student access to any resources (access to classes, libraries, or other institutional facilities) available to other students who have satisfied their tuition and fee bills to the institution.

However, to qualify for this provision, such students may be required to:

- Produce the VA Certificate of Eligibility (COE) by the first day of class;
- Provide a written request to be certified;
- Provide additional information needed to properly certify the enrollment as described in other institutional policies

GI Bill® is a registered trademark of the U.S. Department of Veterans Affairs (VA). More information about education benefits offered by the VA is available at the official U.S. government website at <https://www.benefits.va.gov/gibill>.

## Responsibility of Students Receiving VA Education Benefits

Students must pursue a degree in a specific program to be eligible for VA education benefits. Students must submit their degree plans or Student Academic Requirements (STAR) Degree Audit Report and Student Schedule to Military and Veterans Programs to be certified. Students must submit their degree plans or STAR Degree Audit Report and Student Schedule to MVP every semester they plan to use VA education benefits for continued certification.

Students using VA Education Benefits must notify MVP when any of the following occur:

- Dropping or adding course(s)
- Withdrawing from course(s)
- Withdrawing from the University
- Discontinuing regular class attendance
- Changing programs (academic majors/minors)

VA education benefits are payable for regular attendance in courses required by the student's program (major/minor) curriculum. VA education benefits are not payable for:

- Classes not attended regularly
- Repeating a course for which a passing grade meets degree requirements
- Classes for which credit is received through successful completion of a proficiency test or grade by examination
- Classes taken on an audit basis
- Classes dropped or withdrawn from
- Classes taken that are not required by the student's program (major/minor) curriculum

## Tuition Assistance

### Federal Tuition Assistance

Federal Tuition Assistance (TA) is a benefit paid to eligible members of the Army, Navy, Marines Corps, Air Force, Coast Guard, and Space Force. The Department of Defense (DoD) has given each service the ability to pay up to \$250 per semester credit hour of the actual cost of tuition (no fees are payable by Federal TA) during the fiscal year (Oct. 1 - Sept. 30). TA must be requested and approved before the start date of the course. Refer to your service portal for specific TA deadlines and procedures. TA is paid directly to the school by the individual military services.

Service members must first be admitted to NMSU before they enroll in any classes at NMSU. Before applying, speak with your military service or Educational Services Officer to know your education options and make an informed decision. Please be aware of the following NMSU admission and registration process:

1. Service members must apply online to be admitted,
2. Login to [my.nmsu.edu](https://my.nmsu.edu) to register for classes, and
3. Request TA through your service online portal. Each service has its criteria for eligibility, application process, and restrictions. Refer to our website for service login information: <https://mvp.nmsu.edu/military-members/federal-tuition-assistance.html>

It is important to request TA for the same class and section number as enrolled in NMSU for tuition and grading purposes. Only enrollments requested and approved through their service online portal will be eligible for TA. Refer to our website for further information or contact the Military and Veterans Programs for assistance.

### MyCAA Spouse Scholarship

The My Career Advancement Account (MyCAA) Scholarship Program is a career development and employment assistance program. MyCAA is a program that provides financial assistance for military spouses who would like to pursue a license, certification, or up to an associate degree (excluding Associate Degrees in General Studies, Liberal Studies, and Interdisciplinary Studies that do not have a concentration).

MyCAA provides a maximum education benefit of up to \$4,000 with an annual fiscal year (Oct. 1 – Sept. 30) cap of \$2,000 to assist eligible military spouses. Refer to our website for MyCAA eligibility and procedures at <https://mvp.nmsu.edu/military-members/mycaa-spouse-scholarship.html> or contact Military and Veterans Programs for assistance.

## Regulations

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

### 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, 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 about accepting military training/education and/or MOS for academic credit, they must submit a written statement of appeal to the Dean of the College to which they 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 is eligible for academic credit if the student petitions the College's Associate Dean. Primary MOS is the primary specialty of a soldier and reflects the broadest and most in-depth scope of military experience. Veterans, active-duty personnel, National Guard, and Reservists who are 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 Services Transcript (<https://jst.doded.mil/jst>) and the Community College of the Air Force or Air University transcripts. Course equivalencies and credit hours awarded for a particular NMSU degree are determined by colleges and/or academic departments. The credit hours for specific courses toward degree requirements, or as elective credit, may be awarded. The college and/or academic department determine the number of credit hours awarded.

Students submitting military transcripts for credit evaluation must meet the Maximum Time Frame policy, see the Financial Aid Section for more information.

According to Title 38, Code of Federal Regulations, Sections 21.4253(d) (3) and 21.4254(C)(4), the Department of Veterans Affairs requires all students receiving Veterans Affairs education benefits to submit their military transcripts - Joint Services Transcript and the Community College of the Air Force or Air University - to the New Mexico State University (NMSU) Admissions Office or NMSU Graduate School.

### Graduate Student Status (Training Time)

VA education benefits are determined by the number of graduate credits of enrollment for a given semester or summer session. Listed below

are the credit hours to determine the student status (training time) for graduate students.

In the Fall and Spring semesters, for 16-week terms, full-time enrollment includes 9 or more credit hours. Students are considered three-fourths of the time if enrolled in 7 to 8 credit hours. Half-time enrollment is 5 to 6 credit hours. Students enrolled less than 5 credit hours are reimbursed for tuition and allowable fees only. For an 8-week term, full-time enrollment includes 5 or more credit hours. Students are considered three-fourths of the time if they are enrolled in 4 credit hours. Half-time enrollment is 3 credit hours. Students enrolled in less than 1-2 credit hours are reimbursed for tuition and allowable fees only.

There are several sessions within the summer term. For the 10-week summer session, full-time enrollment is 6 or more credit hours. Students are considered three-fourths of the time if they are enrolled in 4 to 5 credit hours. Half-time enrollment is 3 credit hours. Students enrolled in less than 1-2 credit hours are reimbursed for tuition and allowable fees only. For the 8-week summer session, full-time enrollment is 5 or more credit hours. Students are considered three-fourths of the time if they are enrolled in 4 credit hours. Half-time enrollment is 3 credit hours. Students enrolled in less than 1-2 credit hours are reimbursed for tuition and allowable fees only. For the 5-week summer session, full-time enrollment is 4 or more credit hours. Students are considered three-fourths of the time if they are enrolled in 3 credit hours. Half-time enrollment is 2 credit hours. Students enrolled in 1 credit hour are reimbursed for tuition and allowable fees only.

## Veterans' Attendance and Satisfactory Progress

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

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

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

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

## Resources for Students

### Veteran Mentorship Program

Many students who make the transition from the Military to Higher Education suddenly experience a shift in lifestyles and cultures. This culture shift during their first year is a crucial time in their lives, and the NMSU Veteran Mentorship Program will help foster a smooth transition.

**Vision:** The NMSU Veteran Mentorship Program will help our first-year student veterans make a smooth transition and succeed academically.

**Goals:**

- Help first-year student veterans successfully transition to an academic setting.
- Help first-year student veterans be aware of various financing options.
- Help first-year student veterans understand the process needed to receive VA education benefits.
- Help first-year student veterans be aware of various resources at NMSU and in the community.

For more information on the Veteran Mentorship Program, or to speak with our Mentor, please visit: <https://mvp.nmsu.edu/veteran-mentorship-program.html>

**Military and Veteran Housing**

New Mexico State University is one of the first in the nation to offer on-campus housing specifically designated for student veterans and their families transitioning out of the military and into student life. The Department of Housing & Residential Life has worked in conjunction with the Student Veterans Organization of NMSU to offer affordable housing on campus to student veterans attending the university.

For more information, please contact Housing and Residential Life: (575) 646-3202, [housing@nmsu.edu](mailto:housing@nmsu.edu), <http://housing.nmsu.edu>.

**Service Members Opportunity Consortium (SOC)**

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

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

For further assistance contact:

Military and Veterans Programs  
MSC 4740, PO Box 30001  
Las Cruces, NM 88003-8001  
(575) 646-4524  
<http://mvp.nmsu.edu>

**Reserve Officer Training Corps (ROTC)**

The Reserve Officer Training Corps is a commissioning program designed to attract, motivate, and train qualified students for military service as officers. The ROTC program is represented on the NMSU campus by

the Department of Military Science (U.S. Army) and the Department of Aerospace Studies (U.S. Air Force).

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

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

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

For more detailed information about the ROTC programs, see the College of Arts and Sciences departments of Aerospace Studies and Military Science in this catalog. Additional information may be obtained by contacting the departments directly at:

(575) 646-4030 (Army)  
(575) 646-2136 (Air Force)

**Aggies Green Zone**

The Green Zone is defined as a military zone that has been secured as a "safe" place for military personnel. Military and Veterans Programs created the Aggies Green Zone to help foster a safe and supportive environment where students feel welcomed and trusted during their transition from the military and throughout their educational journey. The Aggies Green Zone training program aims to help faculty and staff understand the needs, experiences, and cultural issues affecting military and veteran students.

**Aggies Green Zone Allies**

Aggies Green Zone Allies are sympathetic faculty and staff members who military, veteran, and dependent students can reach for support. Allies are not expected to be experts in military and veteran matters, but they can make a positive impact by lending a sympathetic ear and connecting students with appropriate resources.

Faculty and Staff receive an Allies designation after participating in the Aggies Green Zone online and workshop training programs, to have their contact information listed on the MVP website. For more information, please visit: <https://mvp.nmsu.edu/aggies-green-zone/green-zone-allies.html>

**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 steps below but must provide documentation that their postponement request was formally denied.

All NMSU students called for active duty must take the following steps 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](mailto:mvp@nmsu.edu). To assist in reporting accurate information to their military service or the VA Regional Office, the student should also provide, in writing, the last day of class attendance.
2. **NMSU University Student Records:** All students presenting their orders to the University Student Records, (575) 646-3411, or [records@nmsu.edu](mailto:records@nmsu.edu), will receive a military withdrawal from classes and full tuition and fees refund for that semester.
3. **Bookstore:** Students who still have their receipts for textbooks purchased the semester in which they are called to active duty will be given a full refund for these textbook purchases when they present their orders. Please contact the bookstore for assistance at (575) 646-4431 or [nmsu@bkstr.com](mailto:nmsu@bkstr.com).

## Military Readmission Policy

New Mexico State University (NMSU) acknowledges that students may be temporarily unable to attend classes or be required to suspend their studies to perform military service. NMSU encourages such students to resume their education once a military service obligation has ended and adopts this policy to ensure the timely readmission of such students.

In accordance with federal regulations, 34 C.F.R. § 668.18 and the Department of Defense (DoD) Voluntary Education Partnership Memorandum of Understanding (MOU), the university will promptly readmit service members who seek readmission to a program that was interrupted due to a uniformed service obligation.

### Eligibility

This policy shall apply to (1) service members who are unable to attend classes for more than 30 consecutive days, and (2) service members who are unable to attend classes for less than 30 days (about 4 and a half weeks) when such an absence would result in a withdrawal from NMSU.

A student is eligible for readmission under this policy if, during an absence, the student performs uniformed service, voluntary or involuntary, in the Armed Forces, including the National Guard or Reserve, active duty, active duty for training, or full-time National Guard (under federal authority). The cumulative length of all absences for uniformed service (service time only) must not exceed five years.

### Notification of Military Service

The student (or an appropriate officer of the armed forces or official of the Department of Defense) must give written notice of such service to the school as far in advance as is reasonable under the circumstances. Such notice does not need to indicate when the student will return to NMSU.

### Notification of Intent to Return

The student must also give written notice of Intent to Return and supporting official military obligation documentation to University Student Records within three years after the completion of the period of service.

### Tuition and Fees

If the student is readmitted to the same program, NMSU will assess the tuition and fee charges that would have been assessed for the academic year during which the student left (first academic year only). However, if veterans' education benefits or other service member education benefits will pay the higher tuition and fee charges that other students in the program are paying for the year, NMSU will assess those charges to the student.

### Readmission Requirements

A returning student will be permitted to reenroll in the next class(es) scheduled in the same academic program unless the student requests a later date of re-enrollment or agrees to a different program. A returning student will be readmitted into the same academic program they were enrolled in before the military service obligation. If the exact program no longer exists, the student must be admitted to the program that is most similar, unless the student requests or agrees to admission to a different program. Returning students will be reenrolled with the same enrollment status, number of completed credit hours, and academic standing as the last academic year of attendance.

If NMSU determines that a returning student is not prepared to resume the program with the same academic status or is unable to complete the degree, NMSU will make reasonable efforts to enable the student to resume or complete the program at no additional cost to the student.

### NMSU is not required to readmit the student if it determines:

- that there are no reasonable efforts it can take to prepare the student to resume the program at the point where they left off or to enable them to complete the program, or
- that after it makes reasonable efforts (those that do not place an undue hardship on the institution), the student is not prepared to resume or complete the program.

"Undue hardship" means an action requiring significant difficulty or expense considering the overall financial resources of NMSU and the impact of such action on its operation. NMSU has the burden to prove by a preponderance of the evidence that the student is not prepared to resume the program with the same academic status at the point where they left off or that they will not be able to complete the program.

In accordance with federal regulations, returning students who receive a dishonorable or bad conduct discharge, general court-martial, or federal or state prison sentence from the Armed Forces (including the National Guard and Reserves) are not eligible for readmission under this policy.

Students are encouraged to speak with Military and Veterans Programs regarding any absence due to military service. For more information, please contact [mvp@nmsu.edu](mailto:mvp@nmsu.edu).

## Military Experience Waiver

Before graduating, during the student's junior and/or senior year, NMSU students are required to take two 3-credit Viewing a Wider World (VWW) upper-division (300-400 level) courses. These courses emphasize the international character and multicultural influences in study and strengthen information retrieval skills. There are two options that NMSU allows for replacing one of the two courses (3 credits) of VWW requirement with another form of educational experience, these are: (Study Abroad Experience or Military Experience for students who have served at least four weeks of U.S. Military Foreign/Sea Service in a foreign country.



Steps needed to request a Military Experience Waiver (replacing 3 credits of VWW):

1. Obtain a copy of your DD-214 or Memo from your Commanding Officer proving your 4-week deployment
2. Provide the above copy to your college academic advisor to request a waiver
3. Wait for your college to approve and confirm

*Note: Credits are not being waived, only one of the two courses is being waived within the requirement. You may still need to complete three credits in consultation with your academic advisor. Please contact the MVP or your academic advisor for questions and concerns.*

#### **NMSU Grants**

1500 N. Third St  
Grants, NM 87020

Phone: (505) 287-6678

#### **VA Coordinator**

Phone: (505) 287-6626

Location: Martinez Hall room 104

#### **NMSU Grants MVP**

## **Recognition of Academic Achievement**

NMSU has a number of university-wide programs that recognize academic achievement. These include

- The Honors College and graduating with Honors
- The Crimson Scholars Program
- The Dean's Report of Academic Achievement

In addition, many colleges and departments have their own programs and awards that recognize the academic achievement of their students.

## **The Honors College, Graduation with University Honors Distinction**

The Honors College provides motivated undergraduate students with opportunities to broaden and enrich their academic programs. In small classes taught by master teachers, honors students engage in lively discussion and collaborative investigation of interdisciplinary topics. By taking honors courses, students may also work toward completing general education requirements and disciplinary requirements in their major. There are two program options available to students: University Honors Distinction (18 credits) or the Honors Certificate (6 credits). Each option has separate eligibility requirements, benefits, and forms of recognition for the student. For details concerning eligibility and requirements, see the Honors College section of the catalog.

### **Crimson Scholars Program**

Crimson Scholars is a recognition program for academically superior students who achieve and maintain a Grade Point Average (GPA) of 3.5 or better. Crimson Scholars receive a number of benefits, including:

- Automatic eligibility for all Honors courses
- Early registration
- Recognition in the commencement program

- Regalia for Commencement that acknowledges the Crimson Scholar designation
- Permission to live in the Honors Residential Community

For eligibility criteria, see the Honors College (<https://catalogs.nmsu.edu/nmsu/undergraduate-honors/>) section of the catalog.

### **Dean's Report of Academic Achievement**

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

### **College Graduation with Honors**

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

### **Phi Theta Kappa**

PTK is the International Honor Society for two-year colleges, providing opportunities for development in scholarship, leadership, service, and fellowship. Membership is offered to students who have achieved a 3.5 grade point average, have completed a minimum of 12 hours of coursework leading to an associate's degree, and have demonstrated leadership qualities.

## **Small Business Development Center**

The Small Business Development Center (SBDC) offers no-cost counseling and low-cost training for all types of business at any stage of business development. The SBDC is designed with the small business person in mind. Whether in business for some time or just starting out, the SBDC can help address challenges encountered by small business owners. As a member of the New Mexico Small Business Development Center Network, SBDC's experienced staff can provide assistance in the following areas:

- Explore business ownership opportunities in Cibola County
- Start a new business or make an established one more efficient and profitable
- Create alternatives for solving problems
- Measure your success potential
- Improve your management skills
- Access a wealth of business resources

Small Business Development Center  
1500 N. Third Street  
Grants, NM 87020  
(505) 287-6688

### Specialized Consulting

SBDC staff is available for specialized consulting to help business owners develop an individual plan for your business. Staff will help create alternatives to solve business-related marketing problems and offer assistance for effective record keeping, accounting, and inventory control.

### Business Education

The SBDC offers individualized counseling in accounting, marketing, and various aspects of management that can help you avoid costly mistakes. Counseling can take place at the SBDC Center or the business location. Seminars and workshops are available to improve business and management skills. For more information, contact the SBDC (<https://grants.nmsu.edu/webpages/campuservices/small-business-development.html>) at (505) 287-6688.

## 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:

- 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.
- A grade of D or better is required to grant NMSU credit for courses identified as having an NMSU equivalent.
- Colleges or departments may require a grade of C- or higher for courses required in their programs.
- Each college determines which transferred courses are applicable toward a degree or a minor.
- Transcripts may need to be reevaluated when students transfer from one NMSU campus or College to another.
- 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 (<https://miniapps.nmsu.edu/transfer/>) 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 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

- Transfer students must provide official transcripts from each institution attended. For college transcripts to be considered official, they must be sent directly from the institution's student records office to NMSU Undergraduate Admissions or delivered in person only if in a sealed envelope from the granting institution and with the current issue date. Official transcripts must be received before the date of registration. 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.
- Students who have not earned credit for the first semester of college English or Math may submit official ACT or SAT scores directly to NMSU Undergraduate Admissions. If ACT or SAT scores are not available, students must take the English Placement Questionnaire and/or Math Placement Exam provided by NMSU.

- Students with 24\* or more completed college credit hours must have a cumulative grade point average (GPA) of at least 2.0.
- Students with fewer than 24 completed college credit hours must fulfill the transfer and first-year admission requirements.
- Students must be eligible to return to their last college or university.
- Any student who conceals the fact that they 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.
- NMSU will uphold academic and judicial suspensions from other colleges and universities.

\* The types of credits listed below are not counted toward the 24 completed credit hour requirement:

- Courses taken for college credit while in high school
- Credits by examination (i.e. CLEP, IB, AP, etc.)
- Credits from a non-regionally accredited institution
- Credits from institutions that do not provide grades
- Credits from experience such as a Joint Services Transcript

## 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 credit hours from courses numbered 300 or above and the requirement that 30 of the last 36 credit hours must be earned through this university.

NOTE: Students currently enrolled at an NMSU Community College (Alamogordo, Dona Ana 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 three 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:

- New Mexico State Common Core general education courses
- 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:

- 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.
- Credit for courses transcribed with NMSU equivalency may/will count toward the degree/major.
- Credit for courses with no NMSU equivalence will be transcribed 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.

- 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).
- Level 3 transfer credit is degree specific, therefore, 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) (<http://www.naces.org/members.html>) 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 (waived for online admission application) | \$20         |
| Online Course delivery (per credit)                                 | \$25         |
| Certificate application fee   | \$0 (waived) |
| Degree application fee  | \$0 (waived) |
| Degree application late filing fee                                  | \$25         |
| Late Registration Fee   | \$25         |

### Course Fees (Fees Assessed per Course)

See each term's Registration Guide for lists of courses with additional fees. Tuition & Fees (<https://uar.nmsu.edu/tuition-fees/>)

## Payment Plan

For current information, please visit the Payment Plan website at <https://uar.nmsu.edu/payment-plan/>.

## 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. 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. Diplomas 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 and personal expenses.

## 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 workstation 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 with 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.

## Contact Information

For more information, contact:

University Accounts Receivable, MSC 4570  
New Mexico State University  
PO Box 30001  
Las Cruces, NM 88003-4570  
Phone: (575) 646-4911  
uar.nmsu.edu

### NMSU Grants

1500 N. Third Street  
Grants, NM 87020  
Phone: (505) 287-6653

<https://grants.nmsu.edu/webpages/itwebpage/businessoffice.html>

## 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 are students can concentrate on their academics and not searching for resources. 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 your 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.

## Academic Advising

Advisers provide academic advising services to all students and prospective students for programs offered at NMSU Grants, as well as advising information for students transferring to NMSU Las Cruces or any other college or university in the state of New Mexico.

In an academic advising session students and advisers engage in:

- Developing an awareness of values, interests, abilities, skills, and potential
- Identifying academic, career and life options and goals
- Choosing an academic program
- Strategically planning out steps toward graduation

- Identifying effective academic study skills and habits
- Solving problems that impede progress toward an academic goal
- Referrals to appropriate campus and community resources
- Learning how to use the [my.nmsu.edu](http://my.nmsu.edu) (<http://my.nmsu.edu>) portal, the STAR degree audit, and FAFSA online
- Selecting courses
- Registering for courses
- Referrals to scholarships, internships, and employment opportunities

Program managers and faculty are also available for specific program and course questions. Refer to posted office hours to make an appointment with program managers and faculty.

### When to Seek Advising

**New Students** will meet with an adviser and register for courses prior to their first semester. Students with a “hold” will also need to meet with an adviser.

**Transfer and readmitted students** should meet with an adviser their first semester. Upon transfer evaluation of prior credit, students will also meet with an adviser.

**Continuing students** should plan ahead and meet with their adviser every semester well in advance of continuing student registration. Students nearing the completion of their certificate or degree should meet with an adviser at least one semester prior to graduation.

### Structure of Grants Academic Advising

Students declared into a specific major or academic program are advised by specific professional academic advisors. Students can schedule their Academic Advising appointment in Martinez Hall RM005, calling Student Services at 505-287-6678, or via Navigate in their student account. ([my.nmsu.edu](http://my.nmsu.edu))

Students who are exploring majors or who are in transition between programs, can be advised through any academic advisor in Student Services.

### Bachelor’s Degree Completion Programs on NMSU Grants campus

- Bachelor of Science (BS) in Elementary Education
- Bachelor of Science in Nursing (BSN)

### Applying NMSU Grants Degrees and Credit towards Bachelor’s Degree Programs

Many NMSU Grants courses apply toward Bachelor’s degree programs at NMSU and other universities. When planning to transfer, it is best to consult with advisers at both NMSU and the university you have chosen.

The following programs offered at NMSU Grants articulate with bachelor’s degree programs at NMSU.

- **Associate of Arts Degree** to all departments in the NMSU College of Arts and Sciences
- **Associate of Science Degree** to all departments in the NMSU College of Arts and Sciences
- **Criminal Justice** to the Department of Criminal Justice in the NMSU College of Arts and Sciences
- **Early Childhood and Education programs** to the NMSU College of Education
- **Pre-Business** to all departments in the NMSU College of Business
- **Social Work** to the College of Health and Social Services & College of Arts & Sciences
- **Computer Technology** to the NMSU Bachelor of Information and Communication Technology Department, College of Engineering.

## Adult Education (AE)

The Adult Education program at NMSU Grants provides instruction to adults (16 and over) in High School Equivalency (HSE) test preparation in either the GED or HiSET battery of tests; pre-high school and basic skills in English, reading, and math. Upon enrollment of the program, learners' skills are assessed and a learning plan is developed based on assessment results. Learners work on skill development through small group classroom instruction, computer-based learning, tutoring, and/or self-study. All services are free of charge except the costs of the HSE tests. Enrollment requires a New Mexico ID or driver's license and a Social Security card. Learners under 18 must have parental and school board permission. Interested adults are encouraged to call the Adult Education (<https://grants.nmsu.edu/webpages/campuservices/adult-ed.html>) Office at (505) 287-6662.

## Computer Support

Information and Communication Technologies (ICT) provides the university community with the computing resources and services that support the educational, research, and public service missions of the university. The resources include NMSU's central computing systems, the network that supports the systems and the wired and wireless functionality through which the internet is accessed. ICT operates the student computer labs found throughout the main campus, manages computer checkout, network registration of computers required for access to the NMSU network, discounts for purchases of computers and Aggie print at the university. ICT also provides support for NMSU technology users through its Help Desk.

For further information, contact:

Information and Communication Technologies (ICT)  
1500 N. Third St. Room 122  
Grants, NM 87020  
Phone: (505) 287-6666  
Email: [grantsit@nmsu.edu](mailto:grantsit@nmsu.edu) or visit our website at Grants IT (<https://grants.nmsu.edu/webpages/itwebpage/it-home.html>)

Information and Communication Technologies (ICT)  
MSC 3AT, PO Box 30001  
Las Cruces, NM 88003-8001  
Phone: (575) 646-1840  
Email: [help@nmsu.edu](mailto:help@nmsu.edu)

ICT's web homepage is located at ICT (<https://ict.nmsu.edu/>) and the help desk webpage is located at **IT Help Desk**. The help desk is in room 141 of the Computer Center building.

## NMSU Grants Library

The New Mexico State University (NMSU) Grants Campus Library is located on the north side of Martinez Hall, Housing more than 25,000 physical titles, including Government Documents, Periodicals, and Reference books. The library digitally houses more than 55 Databases, and Library Research Guides.

### Mission Statement

The Library and Learning Resources is committed to providing resources and services that support the mission of New Mexico State University Grants.

To fulfill its mission the NMSU Grants Library:

- Contributes to student learning outcomes by actively engaging in both the development and implementation of an Information Literacy program that supports the curriculum and lifelong learning;
- Provides users with assistance and instruction for success in the use of library resources for their present studies and lifelong learning;
- Strives to provide equal access to print and electronic materials and to develop services, including distance learning services, for students with a wide range of scholastic abilities, learning styles and comprehension levels;
- Supports of and responds to the changing needs of people with diverse ethnic, cultural, social, and economic backgrounds; Advocates for faculty and staff participation in building and enhancing library resources and creating new services;
- Contributes to the college's curricular goals by providing programs and exhibitions and by publicizing available resources and activities;
- Encourages forging of partnerships and integrating of new technologies to increase access to resources and services external to the college's physical collections.

### Circulation Policy Identification

#### NMSU Students, Staff, and Faculty

All registered NMSU Grants Campus students, Faculty, and Staff may use their Aggie ID Card to check out library materials. If for any reason, they cannot provide an Aggie ID card, the Circulation staff will accept any Government issued Photo Identification to process the items.

#### Adult Education Students (AE) and Community Borrowers

Community Borrowers or AE Students must have a Community Borrowers Card issued by our Circulation Desk. To register for a borrower's card, you must be present in the library and:

- Complete and sign the Community Patrons Application.
- Be 18 years or older, (16 – 18 must be accompanied by an adult and have parent/guardian/AE Staff present)
- Present a valid New Mexico I. D or other official I.D. showing residency in Cibola County.
- Provide documentation to confirm Cibola County residency such as a check with local address imprinted, driver's license, or utility bill.

## Borrowing

Library patrons must come in person to check out books. While overdue fines are not charged, patrons will be billed replacement costs for significantly overdue books. NMSU Grants Students will have holds placed on their Library and Banner accounts until fees and costs are paid.

## Renewal

Patrons are granted up to two renewals. The first renewal can be made in person, by phone, or online. The patron must bring the items in person to renew them a second time. If the item being renewed is requested by another patron, the it will be recalled (return after 2 weeks if recalled by NMSU student, staff or faculty member), and cannot be renewed. **Items cannot be renewed past the date the item is due.**

## Non-Circulating Materials

### Periodicals and Reference Materials

Periodicals and reference materials must be used in the Library. A photocopier is available to those patrons with a PaperCut account.

### Reserve Materials

NMSU Grants faculty members may place personal copies of books or journals on Reserve for use by students enrolled in their courses. Faculty members may also request that a copy of a book be purchased by the Library and placed on Reserve.

NMSU Grants students may borrow Reserve materials for 2-hour, in library use by checking them out at the circulation desk.

## Contact Information

NMSU Grants Library  
1500 N. Third Street  
Grants, NM 87020  
Phone: (505) 287-6638  
NMSU Grants Library (<https://grants-nmsu.libguides.com/library/>)

## Online Bookstore

NMSU Grants utilizes online textbook services through the NMSU bookstore, managed by Follett. (<https://www.bkstr.com/nmsustore/>) Books can be ordered from the bookstore website for your specific course requirements. In addition to textbooks, the bookstore sells calculators, educational supplies, and other types of merchandise. Refer to the current Schedule of Classes for specific information on courses and book requirements.

## Online Education

NMSU Global Campus includes 100% online undergraduate and graduate degrees, doctorates, certificates, and microlearning courses. NMSU Global Campus serves students who need the flexibility of anytime, anywhere learning to pursue their education and career goals. There are 70+ programs and 500+ courses available to prepare students for careers and graduate study.

NMSU Global students meet the same departmental and institutional academic and curricular requirements. NMSU Global programs offer the same curriculum as the campus-based programs with courses developed and taught by expert faculty. NMSU Global courses are reviewed for

quality course design and faculty are supported in best practices for online teaching. In addition,

NMSU Global programs are fully accredited by the Higher Learning Commission and often hold additional program accreditation from a professional accrediting agency.

Visit **NMSU Global** or email [online@nmsu.edu](mailto:online@nmsu.edu) or 888.729.6678.

## Disability Access Services

Disability Access Services (DAS) at NMSU Grants coordinates accommodations for qualified students under the Americans with Disabilities Act (ADA, 1990) and section 504 of the Rehabilitation Act of 1973. This program may not be able to meet all needs and requests; however, a reasonable effort will be made to facilitate physical and programmatic access. To provide qualify services, DAS procedures include self-identification of persons with disabilities and determination of their eligibility for services. Student with disabilities must request services and provide appropriate documentation from public schools, agencies, physicians, psychologists, and/or other qualified diagnosticians.

Qualified students may received the following forms of free assistance/ accommodations: sign-language interpreters, note-taking assistance, readers, enlarged print, E-text, audio text, computer/software adaptations, alternative keyboards, accessible furniture, priority registration, and referral and liaison for many of these services.

More information may be obtained from the DAS office on the Grants Campus in the Student Services Office or by calling 505-287-6628.

## Student Government/Student Activities

The Associated Student Government (ASG) has been established to provide students with a vehicle to provide input to administrators, organize and support student activities, and assist with various campus events. Clubs, based on various student interests and activities, are established each year. Examples include Phi Theta Kappa, Native American Club, Student Business Club, and others. To find out more about getting involved in student government or the various clubs, visit **Student Activities** or call the Student Government Advisor office at (505) 287-6629

## Testing & Tutoring Services

### Testing Services

**NMSU Grants:** The Testing Center upholds the mission, vision and core values of NMSU Grants; through, testing services offered by providing responsible quality assurance testing for the faculty, students, and community members.

- **Accuplacer:** College Board Assessment for College Placement, including remote proctoring
- **ACT Work Keys - ACT National Career Readiness Exam - Certificate**
- **College Proctored Exams:** all NMSU class exams, including remote proctoring for non-NMSU exams

- GED - Pearson VUE GED Testing Service for the High School Equivalency
- Hi-Set - Educational Testing Service for the High School Equivalency
- Pearson VUE IBT Site: Professional Licensure and Certification Exams
- Prometric IBT SITE for the ASE: Professional Certification in Automotive Service of Excellence
- HESI Assessment - RN entrance exam for NMSU School of Nursing BSN program
- FREE TO NMSU GRANTS STUDENTS: HESI Practice Test - RN entrance exam

For more information on testing or tutoring, call us at (505) 287-6691 or stop by Martinez Hall room 125. To set up a proctor request or see the hours of operation visit our webpage at <https://grants.nmsu.edu/testing-center/> (<https://grants.nmsu.edu/webpages/campuservices/ssc.html>). (<https://grants.nmsu.edu/about/campus-services/testing-center.html>)

## Tutoring Services

The Student Success Center provides free assistance to students. Our CRLA certified tutors and professionals work diligently and skillfully to assist you in becoming successful, confident, and active learners. Workshops are offered in multiple academic areas, in-person and online. Free tutoring is available for enrolled students. To utilize these services or to obtain additional information, please visit or call us at: NMSU Grants Campus, Martinez Hall room 125, phone (505) 287-6691 <https://grants.nmsu.edu/webpages/campuservices/ssc.html>

## Career Services

Assistance with resume writing, interviewing techniques, and career exploration software is available at the Student Success Center, room 125 in Martinez Hall.

## Other Resources

### Campus Activities

Student Services offers involvement outside the classroom, an essential component of the student's academics. Campus Activities collaborates with campus and community entities to create opportunities for student involvement, group and individual leadership, and personal development through participation in Student Organizations.

### Career Services

Student Services is available to assist students in career planning and assessment. A limited listing of current employment is maintained in our office. Students are encouraged to check the career bulletin board, which is kept current. Assistance with resume writing and interviewing techniques is available through resources in the Student Success Center, room 125, in Martinez Hall. Career aptitude, and educational planning system, is available in the Student Success Center for students and community members.

## Children on Campus

Children should not be left unattended anywhere on campus, including the Cyber Café, Library, and Student Lounge. Refer to the Computer Usage Guidelines for additional information. Occasionally faculty may permit children in the classroom, however the student must discuss this with their instructor prior to class and this would be an exception. NMSU Grants offers childcare opportunities (at cost) to students, faculty and staff. Children ages 2–12 may be enrolled in the campus-based child care facility. For more information on child-care, please phone Small Wonders Child Care Center at (505) 287-3868.

## Cooperative Education

Information is available on internship opportunities offered by government, nonprofit organizations, and business/industry. During the summer months and throughout the academic year, interns may arrange for academic credit for internships. Speak with an adviser in Student Services for information.

NMSU Grants Cooperative Learning Program, also known as "Co-op", provides degree-related work experiences with employers from the surrounding area. The program contributes to the students' total educational experience and realization of career goals by integrating theory and practical application. For more information, students are encouraged to contact the Program Manager and refer to the program of study in the Catalog.

## Counseling and Student Development

**NMSU Grants:** Personal and relationship problems can occasionally interfere with your studies. Student Services staff may assist you with a referral to a provider in our area. NMSU Las Cruces students have access to the Counseling Center in Las Cruces.

## ID Card Services

The NMSU Aggie I.D. card is the primary source of student identification for the campus. The I.D. card is available in Student Services' Admission Office. The first card is free; replacement cards are \$25.

## NMSU Grants Computer Usage Guidelines

NMSU Grants provides computers for both student and public use. Student dedicated labs are located in Room 121 in Martinez Hall (Drafting – CAD), Room 307 in McClure Hall (Creative Media/Computer Technology) and Room 125 in Martinez Hall (Student Success Center). The Creative Media/Computer Technology, and CAD labs are available only during class time or for majors on an appointment basis. The computer lab in the Student Success Center (SSC) is available to all students during their posted hours. NMSU Grants Student Success Center (<https://grants.nmsu.edu/webpages/campuservices/ssc.html>)

NMSU Grants also provides computers for public use in the library and the Cyber Café in Martinez Hall. The hours for these locations are posted and change based on whether classes are in session or not. Although these computers are available to the general public, NMSU Grants student use takes priority, and all usage must be in line with NMSU policy.

NMSU Grants is a completely wireless campus. Wireless access is available everywhere on campus. To gain access to the wireless network, you can either contact the IT Department or view one of the four information screens that are located on campus. You must have anti-



virus software installed on your laptop to gain access to NMSU Grants wireless network

NMSU Grants provides computer technology, including Internet access for educational purposes and to facilitate other activities necessary for the efficient operation of the institution. The college intends that this technology will be used in a manner which:

- Is conducive to learning;
- Is free of illegal acts;
- Shows respect for the rights and dignity of others.

### Acceptable Use

The intent of these general computer use guidelines is to define broad categories of use that are not acceptable, not to provide an exhaustive list of inappropriate or unacceptable uses. Based on guidelines noted in this document, NMSU Grants officials may at any time make determinations that specific uses are or are not appropriate or acceptable. If asked by an NMSU Grants official, you must be prepared to present a course syllabus and/or assignment that would necessitate the use of computers for activities otherwise deemed as unacceptable by these guidelines. It is **not acceptable** to use the college's computer equipment or facilities:

- For any illegal purpose or act.
- To transmit harassing, indecent, obscene, discriminatory or fraudulent materials or messages.
- To transmit or receive any materials in violation of either state or federal laws (e.g. copyright laws).
- To send fraudulent or forged email messages using the account of another person.
- To harass another user or violate another user's rights.
- To access pornography or other offensive or inappropriate material.
- To copy or attempt to copy any software or files without authorization.
- To illegally download music, movies, or games.
- To distribute unauthorized software.

### General Rules

- Food and drink are not allowed in the computer labs, including the Cyber Café.
- Student work is to be saved on CD, USB flash drive, online cloud storage or emailed to oneself. Personal files left on the computer will be deleted.
- Computers are available on a first-come, first-serve basis.
- Use of computers is limited to two hours. Users working for more than two hours can be asked to relinquish their computer to users who are waiting.
- NMSU Grants is not responsible for personal items left unattended.
- Be considerate of others by keeping noise and other disruptions to a minimum.
- All cell phones are to be turned off or set to silent while in the lab.
- Printing is limited to PaperCut. Students are responsible for setting up PaperCut account with the Business Office.
- Children are not allowed in the college's open laboratories. Children 14 years up through age 18 may use the Cyber Café and library computers for educational purposes IF accompanied by a parent or guardian.
- Headphones must be used at all times when listening to any form of audio materials and must be set at a level that does not disturb

others around you. Students are responsible for providing their own headphones.

- Users are not allowed to remove any college hardware, software, or data without permission.
- Do not modify or attempt to modify system configurations or hardware without authorization.

The use of NMSU Grants computer technology is a privilege extended to all users. Inappropriate or unacceptable use of this technology may result in loss of this privilege.

College IT personnel may monitor information on the computer networks or on individual computers or computer systems. Complaints of possible inappropriate or unacceptable use will be investigated. Complaints regarding violations of acceptable use policy should be forwarded to the IT Department.

The open and library labs have their own specific computer use guidelines. Please read them before using of their computers.

Students may refer to: <https://ict.nmsu.edu/> for additional NMSU security, policies, and guidelines.

## Small Wonders Child Care Center

This private daycare operates on the NMSU Grants Campus and is available for student, faculty, and staff families as well as the public. There is frequently a waiting list for all ages and you are encouraged to contact the Director as early as possible. For more information, call Small Wonders Child Care Center at (505) 287-3868.

## 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, NMSU Global, Alamogordo 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 within the NMSU System. This means that information for students pursuing Associate Degrees/Certificates, Bachelor's degrees, and Graduate Degrees/Certificates is in this catalog section.

The regulations section is broken down into different areas:

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

NMSU offers Associate, Baccalaureate, Master's, Specialist, 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, NMSU Global campus, and the corresponding catalogs for the NMSU Community Colleges (Alamogordo, 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, in addition, adequate library resources and support services. A minor is based on courses that encompass a recognized supplementary field of study outside the student's major. 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

The annual catalog edition is effective Summer Session I through Spring Semester and is considered active for eight years for all campuses. Curricular requirements (course requirements and the 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 the authority. 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. 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 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, Specialist, 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 meeting 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 adequately 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 outlined 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 within the NMSU system including Las Cruces Main Campus, Global Campus, and 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 complete the total number of credit hours 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.

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 courses 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 and 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 the General Education section); such courses 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 before 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 major requirements 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 (300/3000 and 400/4000 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 the 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 at minimum, it must consist of at least 30 graduate credits beyond the previous degree, i.e., 30 credits beyond the bachelor's for a master's degree, and 30 credits beyond the master's for a doctoral degree. 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 encompassing 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. Minors cannot be earned after the degree has been conferred. Students will work with their department and the Graduate School to ensure that the graduate minor is added to their academic record.

## 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 student's 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. Apply for the correct program and concentration from the outset or connect with the department and Graduate School upon admission to correct the concentration if initial admission is incorrect.
2. Identify the concentration on their official Application for Degree.

## Graduate Certificates

A Graduate Certificate program requires 12-18 credits of course work 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. (<https://catalogs.nmsu.edu/nmsu/graduate-school/>)

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

Students will follow the coursework requirements outlined in their catalog and degree audit. A Program of Study is not required by the Graduate School but may be prepared by the student's advisor in consultation with new graduate students for effective advising.

## Application to Candidacy

The degree audit will formally list the curriculum requirements for degree completion and is required to meet in order for the degree or graduate certificate to be conferred. Some programs may use The Program of Study Form as part of its Application to Candidacy process. In these cases, 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.

## Application for Graduation

Students must file an application to receive their degree during their final semester of the program. The program's catalog entry will formally list

the curriculum requirements for degree completion and a completed degree audit is required. The degree audit may specify the catalog at the time of graduation, as long as the catalog is considered active. Otherwise, the current catalog will be used.

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. If a student's degree audit does not meet, the student must submit a Degree Audit Exception (DAE) form to document course substitutions and credit hour alignment such that the exceptions will allow the degree audit to meet.

### Credit Hour Requirement

A minimum of 30 credits beyond the bachelor's 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. As per NMSU's campus residency requirement, a minimum of 50% of degree coursework must be taken at NMSU.

### 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 must 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.

A student taking an oral examination must enroll for at least one credit for that term (fall, spring, or summer terms).

### 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 submitting electronically into ProQuest.

### 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. One other committee member, in addition to the chair, must be from student's home department
  - b. Other committee members may be from outside the student's home department
  - c. Students with a declared minor- must have a representative from the minor department.
  - d. 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 here. 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 with the schedule provided by the Graduate School. The department is responsible for ensuring 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 a 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 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 over seven years old at the time of the final examination will be at the department's discretion.

## Master's Accelerated Program (MAP)

The Master's Accelerated Program (MAP) allows 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 two more years. The master's accelerated programs allow students to complete a graduate program in an accelerated manner.

Undergraduate students may apply for acceptance to MAP listed in the New Mexico State University Catalog by submitting the Master's Accelerated Application Form 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 2.75; departments participating in MAP 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 undergraduate/graduate courses.**

Graduate departments within the colleges may allow academically qualified undergraduate students to substitute up to 50% of their graduate course credits (i.e., 15 of 30, etc.) but no more than 18 credit hours for elective or required courses in an undergraduate degree program. Graduate programs can use up to 50% of NMSU coursework (450/4500 level or higher) that can logically be applied toward completing a master's program of study (at least 50% of the credits allocated for the master's degree – usually 15 of 30 – must be for courses designed for graduate work.). Students must consult with participating MAP departments to determine program-specific guidelines on the allowable credits toward the undergraduate and graduate degree. A grade of 3.0/4.0 or higher in each course will be required.

### Program Participation Requirements:

1. Students participating in MAP are required to obtain prior approval by the graduate program and submit a completed Master's Accelerated Program Application from to the Graduate School by the first Friday of classes with all required signatures. Student's course work must be general or discipline electives in the student's undergraduate course of study.
2. Students will enroll in approved graduate-level courses. If the course(s) requires instructor approval, it is the student's responsibility to obtain the necessary approval.
3. Students participate in the Developing New Scholars Program (DNSP) through the Graduate School. The DNSP program provides formal mentoring supporting the application process to Graduate School. Upon awarding of the Bachelor's degree and formal admissions into a master's 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 integrating more than one discipline to fully engage in the field of study. The programs provide a mechanism to address emerging scholarship, innovation, research, and 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 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.

Students should be admitted to an existing graduate program which closely relates the desired interdisciplinary trajectory. Students interested in pursuing an Interdisciplinary Master's (IMAS) degree should take the following steps.

### 1. Establish an IMAS graduate committee.

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 will take at least 15 credit hours listed in the proposal. The other committee member must be from the department in which the student has selected a minor area of study from the approved list.

### 2. Develop a proposal for interdisciplinary studies.

The student must work with their committee to create a proposal of the program concept consisting of the following:

- a. The designated degree being sought and the name of the interdisciplinary area.
- b. The program of study to be followed, which 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. The committee can require additional materials such as a statement of interest, letters of recommendation, GRE or GMAT scores and conduct a personal interview.
- c. 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 primary department selected by the student will receive the student's application for admissions to the Graduate School for approval. 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. 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.
- d. 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. The objective of the program of study should include proposed areas of skill development and proposed courses in more than one graduate degree granting department at NMSU.
- e. Justification for not using an existing degree program.
  - i. Once the student has formed their committee and compiled a rough draft of the proposal, they must contact the Graduate

School to make an appointment with the Dean of the Graduate School to review the proposal. The student and advisors from the main program and minor program should attend the meeting as well.

- ii. If the proposal is accepted by the Graduate School, the student will then be advised to submit an application as a Master's Interdisciplinary student through the application system.
- f. Procure final signatures from all committee members and academic department heads from primary and minor departments on the IMAS proposal. The student should submit a copy of the completed and signed proposal to the Graduate School.

### **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 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.
2. 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.
3. 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.
4. 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 up to 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. A student may not earn the same degree multiple times at NMSU.

### **Teacher Licensure**

Students wishing to take graduate courses for licensure, renewal of licensure, or for personal enrichment must be fully admitted to a department 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, Teaching of English as a Second Language (TESOL), reading, and special education. Endorsement is also available in early childhood education at the elementary level. Contact [schooloftpal@nmsu.edu](mailto:schooloftpal@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 Reading within the School of Teacher Preparation, Administration, and Leadership and in school psychology within the Department of Counseling and Educational Psychology. Emphasis is placed on the development of the competencies needed for 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**

Students will follow the coursework requirements outlined in their degree audit. A Program of Study is not required by the Graduate School but may be prepared by the student's advisor in consultation with new graduate students for effective advising. Some programs may also use the Program of Study as part of its Application to Candidacy process.

### **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.

### **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 the

advisor's recommendation and with the graduate dean's approval, 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 over seven years old at the time of the final examination will be at the department's discretion.

## **Doctoral Degrees**

The doctoral degree requires significant scholarly study beyond the master's program, including a minimum of 30 credit hours beyond the master's and a minimum of 18 credit hours of dissertation. As per NMSU's campus residency requirement, a minimum of 50% of degree coursework must be taken at NMSU.

Prospective candidates are expected to hold bachelor's 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 on preparation for performance in educational leadership. This program is intended primarily for students pursuing careers in educational leadership, school district or higher education administration, or educational services are predominant rather than those in research. The Ed.D. Degree in educational leadership and administration is offered in the School of Teacher Preparation, Administration, and Leadership

Two concentrations are available within the Ed.D. degree: Higher Education Administration and PK-12 Administration is offered in the Department of Curriculum and Instruction; the degree in educational administration is offered in the Department of Educational Leadership and Administration. Any transfer credit or predoctoral course work to be included in the related field must have the approval of both the major and minor (if applicable) 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, in addition, 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 6990 Advanced Practice Nursing 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 6990 Advanced Practice Nursing Immersion 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 beyond the master's, 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 (IDOC)**

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. Readmission information can be located here (<https://apply.nmsu.edu/apply/?id=1c3c41ea-b5f9-48ef-83c3-b085794ba277>).

### 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, and 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 completing 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 a separate examination may be required.

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 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.

### Doctoral Graduate Committee

The doctoral committee will comprise at least four graduate faculty members 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 department
- At least one additional member of the committee must also be from a discipline within the student's major department.
- If an approved minor is declared, at least one (but no more than two) members of the committee must be from the minor department.
- All 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.

## Doctoral Program of Study

Students should follow the course requirements outlined in the program's catalog and pursue the roadmap featured in the program's degree audit. A minimum of 50% of the degree coursework must be taken at NMSU. If the doctoral program does not have an active degree audit, students should work with their advisor to file a Program of Study Form once they have:

- Completed 1 year of enrollment while at NMSU that are beyond the master's degree
- Successfully completed a qualifying examination if required by the program

The individualized program of study is designed to meet the campus residency requirement and includes a minimum of 30 graduate credits beyond the masters.

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, and
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 must enroll for at least one credit for that term (fall, spring, or summer terms).

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 oral examination results will be reported to the Graduate School by the Dean's Representative of the committee. These and all graduate forms are available on the Graduate School Form webpage.

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 or be granted a second examination after a lapse of at least one semester.

NOTE: Generally, 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 the 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 follow the Dissertation Registration Requirements.

## 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 get 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 student passed the 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 in 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 by visiting the Graduate School website 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 on the Graduate School's website (<https://gradschool.nmsu.edu/current-students/graduating-thesis-and-dissertation-students.html>). The dissertation is not complete until the required forms are received at the Graduate School. Required forms may be found here.

Registration at NMSU is a process that includes: (1) academic advising, (2) registering for classes, online or with your academic advisor, and (3) payment of tuition and fees. 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 (USR) (<https://records.nmsu.edu>).

## Admission Requirement

No person 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 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 9-12 credits, with a maximum of 6 credits per session. 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. A "Change of Schedule ([https://records.nmsu.edu/\\_files/sro-forms/Change%20of%20Schedule%20Form.pdf](https://records.nmsu.edu/_files/sro-forms/Change%20of%20Schedule%20Form.pdf))" form is required and available on the University Student Records website (<https://records.nmsu.edu>). 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 myNMSU 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 publishes an online schedule of “Important Dates for Students (<https://records.nmsu.edu/students/important-dates.html>)” 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 “Change of Schedule ([https://records.nmsu.edu/\\_files/sro-forms/Change%20of%20Schedule%20Form.pdf](https://records.nmsu.edu/_files/sro-forms/Change%20of%20Schedule%20Form.pdf))” form signed by the instructor (available online on the University Student Records website (<https://records.nmsu.edu>)).  
Or 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 [record\\_grade@nmsu.edu](mailto:record_grade@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.

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 log in 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 "Change of Schedule ([https://records.nmsu.edu/\\_files/sro-forms/Change%20of%20Schedule%20Form.pdf](https://records.nmsu.edu/_files/sro-forms/Change%20of%20Schedule%20Form.pdf))" form 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/or waivers of degree requirements 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 attend all their classes regularly. Each course instructor will establish the specific attendance and course requirements via the course syllabus. Only students who are currently enrolled in a course for either credit or audit are permitted to attend the classes officially. However, individual instructors may allow an occasional visitor and may allow a student who formally withdrew from the course to continue to participate for the remainder of the semester.

## Absences from Class and Failure to Complete Assignments

Students who must miss class due to accident, illness, or 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 the Academic Associate Dean a completed "Student Absence/Lack of Progress Report" form. If the Academic Associate Dean agrees with the recommendation of the course instructor, the student will be administratively withdrawn from the course. To appeal the decision, see the Administrative Withdrawal (<https://catalogs.nmsu.edu/nmsu/regulations-policies/#withdrawalstext>) section.

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. Before 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 ten 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 assign grades based on the student's performance. The instructor determines the final grades for the course and reports to the University Registrar as described in the 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 (<https://report.nmsu.edu/decision-tree/>) 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 students in the program collectively achieve those outcomes, 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 as outlined in the course syllabus. 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 (USR) establishes the Final Examination Schedule (<https://records.nmsu.edu/students/final-examination-schedule.html>) for each semester.

Examinations are typically held in the course's standard lecture/lab room. Some departments hold Departmental Exams where all students for all sections of a particular course must take the final examination simultaneously. The Final Examination Schedule indicates the Department Exam dates, times, and location. For courses 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 during 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 the department head's permission and the enrolled students' unanimous consents. During the week before Exam Week, instructors cannot 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 before 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 on ACT scores, SAT scores, and/or alternative placement assessments. The student's eligibility to enroll in university-level English and Mathematics courses depends on this evaluation. Students without adequate preparation for university-level courses must 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 300/3000 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. 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 1110G 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 to determine eligibility for enrollment in upper-division courses. All students should seek to complete the Basic Academic Skills requirements as early in their academic program as possible. Students who postpone completing 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, can enroll in 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 registration in an independent study course should prepare an independent study proposal to present to the 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 subject, and a description of the proposed written product or another 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 included in the cumulative grade point average calculation.
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 the 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 that 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. Application forms are available on the University Student Records 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. A 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)

Before 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 and test schedule information is available through Testing Services DACC East Mesa, RM 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 department in which the course is being challenged shall determine the manner of administering the examination and granting permission. 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. 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 qualify for academic credit if the student petitions the college's Academic Dean. Primary MOS is the primary specialty of a soldier and reflects the broadest and most in-depth scope of military experience. Veterans, active-duty personnel, National Guard and Reservists who are 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 (<https://catalogs.nmsu.edu/nmsu/financial-aid-scholarship-services/>) Section.*

## Graduate Course Deficiencies

Students 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 the department, courses to meet undergraduate deficiencies may be taken under a 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 a 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:

| Letter Grade                                | Grade Points per Unit of Credit |
|---|---------------------------------|
| A+  | 4.0                             |
| A   | 4.0                             |
| A-  | 3.7                             |
| B+  | 3.3                             |
| B   | 3.0                             |
| B-  | 2.7                             |
| C+  | 2.3                             |
| C   | 2.0                             |
| C-  | 2.0                             |
| D+, D, D-                                   | 1.0                             |
| F   | 0                               |
| W- Withdrawal                               | 0                               |
| N- Grade not submitted                      | 0                               |
| CR- Credit authorized, but not letter grade | 0                               |
| IP- In progress                             | 0                               |
| RR- Progress in undergraduate course        | 0                               |
| PR- Progress in graduate thesis             | 0                               |
| S- Satisfactory work <sup>1</sup>           | 0                               |
| U- Unsatisfactory work                      | 0                               |
| I- Incomplete work                          | 0                               |
| AU- Audit                                   | 0                               |

<sup>1</sup> S grades are grades that are satisfactory to the professor and are normally equivalent to the letter grade of C- or higher.

Any courses for which only CR, S or PR is awarded, but no traditional letter grade is given, will be included in the total number of earned hours but is not computed in the grade-point average. Traditional letter grades are those which are used in the grade point average determination: A+,



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

## Midterm and Six-Week Early Performance Grades

A Six-Week Early Performance Grade (sometimes referred to as Midterm Grade) for courses numbered 100/1000-299/2999 will be posted and available to students through the MyNMSU portal. The purpose of the early grade posting is to ensure that students have an opportunity to address any performance issues. Students should be mindful that the Six-Week Early Performance Grade reflects a students' performance on only that portion of the total coursework that has been graded at that time. Any student who is doing poorly, or not as well as they would like, should meet with the instructor to discuss how they can improve. Students who have concerns about their progress in multiple courses or who are considering withdrawal from course(s) must meet with their academic advisor.

In courses numbered 300/3000 or higher, the posting of Early Performance Grades is optional and may occur through the online course management system rather than the MyNMSU portal. However, prior to the last day to withdraw from a course, upon request, instructors will provide information to students about their progress in the course.

## Retention of Grading Records

Individual assignments and exams that are not returned to students should be retained by the instructor or department through the end of the subsequent regular semester. The records used to compute individual final grades should be retained for two years after the completion of a course. If a final grade is appealed, these records are kept for at least two years after the completion of the appeal. Departments, colleges, or the library may require that records be kept for longer periods.

## Minimum Grade Requirement for Undergraduate Students

Undergraduate degrees require a cumulative GPA of 2.0 or higher for degree completion. Although D+, D, or D- can be considered passing, some departments have higher grade requirements for the courses within 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 the 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 the approval of an academic advisor. Eligibility requires the 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. 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 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 assigning 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 ([https://records.nmsu.edu/\\_files/sro-forms/I%20Grade%20Information%20Form.pdf](https://records.nmsu.edu/_files/sro-forms/I%20Grade%20Information%20Form.pdf))" by the deadline for final grade submission in the semester the student was enrolled in the course, 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 digitally, or the associate dean must send a copy of the document to the student's official permanent address or university email address, as recorded in the University Student Records, 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 before 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 subsequently 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 before graduation, the student completes the remaining coursework, as specified on the I Grade 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.

## RR Grade

The RR grade may be assigned only in undergraduate developmental courses (CCDE, CCDL, CCDM & CCCR) 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 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 S (satisfactory) or U (unsatisfactory) rather than a traditional letter grade. These assigned grades are permanent notations on the student's transcript. Only those credits graded S (satisfactory) accumulate toward the minimum number of research credits required.

U indicates that the student has stopped work or is doing work of unacceptable quality. After the final examination, and/or when the thesis/dissertation is submitted to the electronic dissertation submission system, the instructor will report the final S or U grade for the research.

The report of an S (satisfactory) grade means that the degree will be certified. A U (unsatisfactory) grade means that the student is doing work of unacceptable quality.

If a student accumulates a total of two U (unsatisfactory) grades in courses numbered either 598, 599, 600, 699 or 700, the student will

be placed on Academic Probation I. 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 (<https://catalogs.nmsu.edu/nmsu/tuition-fees-expenses/#newitemtext>) 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. 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 working on advanced degrees and planning to have an interruption in studies for a calendar year should request 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-absence" 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

If 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, excluding absences through University policy.

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.

Except in documented cases of persistent unexcused absence/nonparticipation, administrative withdrawals will not be 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 ([https://records.nmsu.edu/\\_files/sro-forms/Student%20Absence%20or%20Lack%20of%20Progress%20Report%20-%20Administrative%20Withdrawal.pdf](https://records.nmsu.edu/_files/sro-forms/Student%20Absence%20or%20Lack%20of%20Progress%20Report%20-%20Administrative%20Withdrawal.pdf)), found on the forms page of the University Student Records webpage, and route for approvals as soon as a pattern of non-attendance/non-participation is established. The University Student Records is ultimately responsible for processing the administrative withdrawal. The form is to be submitted as soon as the pattern of persistent absence/nonparticipation is established. Normally it will be submitted no later than one week after the deadline for a student to withdraw themselves from the course.

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 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.

## 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 steps below but must provide documentation that their postponement request was formally denied.

All NMSU students called for active duty must take the following steps 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](mailto:mvp@nmsu.edu). To assist in reporting accurate information to their military service or the VA Regional Office, the student should also provide, in writing, the last day of class attendance.
2. **NMSU University Student Records:** All students presenting their orders to the University Student Records, (575) 646-3411, or [records@nmsu.edu](mailto:records@nmsu.edu), will receive a military withdrawal from classes and full tuition and fees refund for that semester.

3. **Bookstore:** Students who still have their receipts for textbooks purchased the semester in which they are called to active duty will be given a full refund for these textbook purchases when they present their orders. Please contact the bookstore for assistance at (575) 646-4431 or [nmsu@bkstr.com](mailto:nmsu@bkstr.com).

## Military Readmission Policy

New Mexico State University (NMSU) acknowledges that students may be temporarily unable to attend classes or be required to suspend their studies to perform military service. NMSU encourages such students to resume their education once a military service obligation has ended and adopts this policy to ensure the timely readmission of such students.

In accordance with federal regulations, 34 C.F.R. § 668.18 and the Department of Defense (DoD) Voluntary Education Partnership Memorandum of Understanding (MOU), the university will promptly readmit service members who seek readmission to a program that was interrupted due to a uniformed service obligation.

### Eligibility

This policy shall apply to (1) service members who are unable to attend classes for more than 30 consecutive days, and (2) service members who are unable to attend classes for less than 30 days (about 4 and a half weeks) when such an absence would result in a withdrawal from NMSU.

A student is eligible for readmission under this policy if, during an absence, the student performs uniformed service, voluntary or involuntary, in the Armed Forces, including the National Guard or Reserve, active duty, active duty for training, or full-time National Guard (under federal authority). The cumulative length of all absences for uniformed service (service time only) must not exceed five years.

### Notification of Military Service

The student (or an appropriate officer of the armed forces or official of the Department of Defense) must give written notice of such service to the school as far in advance as is reasonable under the circumstances. Such notice does not need to indicate when the student will return to NMSU.

### Notification of Intent to Return

The student must also give written notice of Intent to Return and supporting official military obligation documentation to University Student Records within three years after the completion of the period of service.

### Tuition and Fees

If the student is readmitted to the same program, NMSU will assess the tuition and fee charges that would have been assessed for the academic year during which the student left (first academic year only). However, if veterans' education benefits or other service member education benefits will pay the higher tuition and fee charges that other students in the program are paying for the year, NMSU will assess those charges to the student.

### Readmission Requirements

A returning student will be permitted to reenroll in the next class(es) scheduled in the same academic program unless the student requests a later date of re-enrollment or agrees to a different program. A returning student will be readmitted into the same academic program they were enrolled in before the military service obligation. If the exact program no longer exists, the student must be admitted to the program that is most similar, unless the student requests or agrees to admission to a different

program. Returning students will be reenrolled with the same enrollment status, number of completed credit hours, and academic standing as the last academic year of attendance.

If NMSU determines that a returning student is not prepared to resume the program with the same academic status or is unable to complete the degree, NMSU will make reasonable efforts to enable the student to resume or complete the program at no additional cost to the student.

### NMSU is not required to readmit the student if it determines:

- that there are no reasonable efforts it can take to prepare the student to resume the program at the point where they left off or to enable them to complete the program, or
- that after it makes reasonable efforts (those that do not place an undue hardship on the institution), the student is not prepared to resume or complete the program.

"Undue hardship" means an action requiring significant difficulty or expense considering the overall financial resources of NMSU and the impact of such action on its operation. NMSU has the burden to prove by a preponderance of the evidence that the student is not prepared to resume the program with the same academic status at the point where they left off or that they will not be able to complete the program.

In accordance with federal regulations, returning students who receive a dishonorable or bad conduct discharge, general court-martial, or federal or state prison sentence from the Armed Forces (including the National Guard and Reserves) are not eligible for readmission under this policy.

Students are encouraged to speak with Military and Veterans Programs regarding any absence due to military service. For more information, please contact [mvp@nmsu.edu](mailto:mvp@nmsu.edu).

## Military Experience Waiver

Before graduating, during the student's junior and/or senior year, NMSU students are required to take two 3-credit Viewing a Wider World (VWW) upper-division (300-400 level) courses. These courses emphasize the international character and multicultural influences in study and strengthen information retrieval skills. There are two options that NMSU allows for replacing one of the two courses (3 credits) of VWW requirement with another form of educational experience, these are: (Study Abroad Experience or Military Experience for students who have served at least four weeks of U.S. Military Foreign/Sea Service in a foreign country.

Steps needed to request a Military Experience Waiver (replacing 3 credits of VWW):

1. Obtain a copy of your DD-214 or Memo from your Commanding Officer proving your 4-week deployment
2. Provide the above copy to your college academic advisor to request a waiver
3. Wait for your college to approve and confirm

*Note: Credits are not being waived, only one of the two courses is being waived within the requirement. You may still need to complete three credits in consultation with your academic advisor. Please contact the MVP or your academic advisor for questions and concerns.*

## 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 the 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 and ends at the University Student Records. At all other campuses, medical withdrawal begins at the Student Services Office but is ultimately finalized with the University Student Records 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 grandparent 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. 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

Students who withdraw from all courses for the semester should do through the University Student Records. 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> (<https://records.nmsu.edu/faculty-and-staff/academic-calendar.html>).

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 <https://uar.nmsu.edu/refunds/withdrawals.html>. 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 (<https://catalogs.nmsu.edu/nmsu/regulations-policies/#academicprogramsofstudytex>) 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 (<https://catalogs.nmsu.edu/nmsu/tuition-fees-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 (<https://commencement.nmsu.edu/apply-to-graduate/>). 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, degree candidates who 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 Academic 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 are being offered in the upcoming summer schedule of classes
5. Submit a degree application and approved petition form (available in the Dean's office of the student's primary major) by the late application deadline 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 University Student Records. 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 student's responsibility 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 will notify the student of 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 may 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 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 falling below 12 credits in any one semester will jeopardize their financial aid.* Should this occur, students should see the associate dean in their college as soon as possible to try to implement corrective measures.
2. The student may enter into a contract or individualized education plan with their advisor and be 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 contract stipulations.
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 they cannot 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, the student is 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 that count toward degree requirements is still governed by the rules established by the student's respective college or campus.

## Summer Attendance Impact on Academic Standing

A student may use summer classes to get a warning or probationary status removed. Students suspended at the close of the spring semester may have their Academic Suspension rescinded if they attend a 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 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. A student may not remain eligible for all extracurricular activities or Graduate Assistantship as governed by the rules of the specific activity.

**Graduate Academic Probation I:** A graduate student is placed on Graduate Academic Probation I when the student's cumulative GPA drops below 3.0 and the previous academic standing is Graduate Academic Good Standing. If a student on Probation I earns a semester GPA above 3.0 but the cumulative GPA remains below 3.0, the student continues on Graduate Academic Probation I

**Graduate Academic Probation II:** If the semester GPA of a continuing or re-admitted graduate student on Graduate Academic Probation I drops below 3.0 then the student is placed on Graduate Academic Probation II

**Graduate Academic Suspension:** If the graduate student cannot 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 reviewing and resolving 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 essential 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 in a formal review before a university Hearing Panel. Either party to the matter has the right to a final appeal of the results 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. Graduate students' offenses and repeat undergraduate offenses are subject to a Level II sanction, even if less severe. Level II sanctions consist of 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 (<https://arp.nmsu.edu/chapter-5/5-10.html>)
- ARP 5-11 (<https://arp.nmsu.edu/chapter-5/5-11.html>)

## Examples of Academic Misconduct and Report Form

- ARP Appendix 5.10-A (Examples) (<https://arp.nmsu.edu/appendices/appendix-5-10-a.html>)
- ARP Appendix 5.11-B (Form) ([https://cm.maxient.com/reportingform.php?NewMexicoStateUniv&layout\\_id=15](https://cm.maxient.com/reportingform.php?NewMexicoStateUniv&layout_id=15))

## Flowchart of Procedures

- ARP Appendix 5.11-A (<https://arp.nmsu.edu/pdf/Appendix-5-11-A.pdf>)

## Privacy Rights

The following information has been designated as directory information and is subject to release to the public under the Buckley Amendment (PL 98-380), "The Family Educational Rights and Privacy Act of 1974:" student's name, 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 website (<https://records.nmsu.edu>) and with University Student Records (USR), in compliance with the Act.

Requests for withholding directory information must be filed in writing with University Student Records. 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 University Student Records.

## 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 university in accordance with the Family Educational Rights and Privacy Act.

In addition, the university is mandated by federal tax regulations to provide tuition and fee payment information to the student and the Internal Revenue Service so that applicable educational tax credits may be computed. The social security number is required for tax reporting purposes.

## Change 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 (USR). All students will need to fill out the "Demographic Change Form" located at <https://records.nmsu.edu/forms/inventory.html> and provide one of the following documents to



University Student Records. Legal name changes will only be processed for students currently enrolled at New Mexico State University.

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 USR.

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

## Changes in Residency Status for Tuition Purposes

University Student Records (USR) does not determine the laws and rulings for determining Residency, these are state laws that USR 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 USR. 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 USR. 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/students/residency.html> website.

## 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 be ordered online at <https://records.nmsu.edu/forms/transcripts.html>. A fee will apply, which may vary depending on the total number of transcripts ordered and the selected delivery method.

Students can request two types of transcripts: an electronic version sent as a secure PDF or a printed hard copy 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.

## Student Complaint Procedures for Licensure Programs

New Mexico State University (NMSU) is committed to providing a fair and effective process for addressing student complaints related to professional licensure programs in accordance with U.S. Department of Education Federal Integrity Rules and State Authorization Reciprocity Agreements (<https://nc-sara.org/>) (SARA).

### Initial Complaint Resolution:

Students residing in SARA member states who have a complaint concerning an NMSU licensure program are required to follow the internal NMSU complaint process before escalating to external agencies.

1. Academic Compliance Specialist:
  - Students must submit their written complaint to the Academic Compliance Specialist at [licensure@nmsu.edu](mailto:licensure@nmsu.edu). This allows for initial review and potential resolution at the program level.
2. Dean of Students:
  - If the Academic Compliance Specialist cannot resolve the complaint, the student may escalate the matter to the Dean of Students Office.
  - The **Dean of Students** (<https://studentlife.nmsu.edu/dos1/>) Office is in Corbett Center Student Union, Second Floor, Room 207, Las Cruces Campus.
  - Contact information:
    - Phone: (575) 646-1722
    - Email: [dos@nmsu.edu](mailto:dos@nmsu.edu)

### External Complaint Resolution:

If the complaint remains unresolved after exhausting the internal NMSU procedures, students may file a complaint with the New Mexico Higher Education Department.

- **New Mexico Higher Education Department, Student Complaints:**
  - Address: 2044 Galisteo Street, Suite 4, Santa Fe, NM 87505
  - Telephone: (505) 476-8400
  - Students are advised to review the **Student Complaint Process** (<https://hed.nm.gov/students-parents/student-complaints/>) and complete the **Student Complaint Form** ([https://hed.nm.gov/uploads/documents/NMHED\\_Student\\_Complaint\\_Form\\_2023\\_fillable.pdf](https://hed.nm.gov/uploads/documents/NMHED_Student_Complaint_Form_2023_fillable.pdf)) on the New Mexico Higher Education Department website.

## Out-of-State Complaint Resolution:

Students may also file complaints with their home state agency. Please refer to the Professional Licensure Disclosures (<https://nmsu.edu/academics/licensure.html>) for relevant contact information for your state.

## Common Course Numbering Crosswalk

The Post-secondary Education Articulation Act ([https://hed.state.nm.us/resources-for-schools/public\\_schools/nm-course-numbering-system/](https://hed.state.nm.us/resources-for-schools/public_schools/nm-course-numbering-system/)) 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.

| Current Course                           | Past Course | Course Type Indicator |
|--|-------------|-----------------------|
| <b>ACCT-ACCOUNTING</b>                   |             |                       |
| ACCT 2110                                | ACCT 221    | Common                |
| ACCT 2120                                | ACCT 222    | Common                |
| <b>ACES-AGRI,CONSUMER &amp; ENV SCIE</b> |             |                       |
| ACES 1120                                | ACES 111    | Unique                |
| ACES 1210                                | ACES 121    | Unique                |
| ACES 1220                                | ACES 199    | Unique                |
| <b>ACOM-AG COMMUNICATION</b>             |             |                       |
| ACOM 1110                                | AXED 1120   | Unique                |
| ACOM 1130G                               | AXED 2120G  | Unique                |
| ACOM 3110                                | AXED 360    | N/A                   |
| <b>AEEC-AGRICULTURAL ECONOMICS</b>       |             |                       |
| AEEC 1110                                | AG E 100    | Common                |
| AEEC 1120                                | AG E 101    | Unique                |
| AEEC 2110                                | AG E 236    | Unique                |
| AEEC 2120                                | AG E 260    | Unique                |
| AEEC 2130G                               | AG E 210G   | Unique                |
| AEEC 2140                                | AG E 250    | Unique                |
| AEEC 2996                                | AG E 200    | Unique                |
| AEEC 315V                                | AEEC 3110V  | N/A                   |
| AEEC 337V                                | AEEC 3120V  | N/A                   |
| AEEC 384V                                | AEEC 3130V  | N/A                   |
| AEEC 445V                                | AEEC 3140V  | N/A                   |
| AEEC 305                                 | AEEC 3210   | N/A                   |
| AEEC 311                                 | AEEC 3220   | N/A                   |
| AEEC 313                                 | AEEC 3230   | N/A                   |
| AEEC 314                                 | AEEC 3240   | N/A                   |
| AEEC 340                                 | AEEC 3250   | N/A                   |
| AEEC 342                                 | AEEC 3260   | N/A                   |
| AEEC 350                                 | AEEC 3270   | N/A                   |
| AEEC 385                                 | AEEC 3280   | N/A                   |
| AEEC 300                                 | AEEC 3998   | N/A                   |
| AEEC 425                                 | AEEC 4110   | N/A                   |
| AEEC 400                                 | AEEC 4410   | N/A                   |
| AEEC 451                                 | AEEC 4510   | N/A                   |
| AEEC 452                                 | AEEC 4520   | N/A                   |
| AEEC 456                                 | AEEC 4530   | N/A                   |

|                            |            |        |
|----------------------------|------------|--------|
| AEEC 458                   | AEEC 4540  | N/A    |
| AEEC 470                   | AEEC 4550  | N/A    |
| AEEC 420                   | AEEC 4997  | N/A    |
| AEEC 499                   | AEEC 4999  | N/A    |
| AEEC 503                   | AEEC 5110  | N/A    |
| AEEC 501                   | AEEC 5120  | N/A    |
| AEEC 502                   | AEEC 5130  | N/A    |
| AEEC 545                   | AEEC 5140  | N/A    |
| AEEC 506                   | AEEC 5150  | N/A    |
| AEEC 520                   | AEEC 5210  | N/A    |
| AEEC 511                   | AEEC 5220  | N/A    |
| AEEC 522                   | AEEC 5230  | N/A    |
| AEEC 540                   | AEEC 5240  | N/A    |
| AEEC 550                   | AEEC 5320  | N/A    |
| AEEC 551                   | AEEC 5330  | N/A    |
| AEEC 556                   | AEEC 5340  | N/A    |
| AEEC 575                   | AEEC 5350  | N/A    |
| AEEC 585                   | AEEC 5360  | N/A    |
| AEEC 597                   | AEEC 5991  | N/A    |
| AEEC 598                   | AEEC 5994  | N/A    |
| AEEC 590                   | AEEC 5996  | N/A    |
| AEEC 596                   | AEEC 5997  | N/A    |
| AEEC 593                   | AEEC 5998  | N/A    |
| AEEC 594                   | AEEC 5998  | N/A    |
| AEEC 595                   | AEEC 5998  | N/A    |
| AEEC 599                   | AEEC 5999  | N/A    |
| <b>AGRO-AGRONOMY</b>       |            |        |
| AGRO 1110G                 | AGRO 100G  | Common |
| AGRO 2160                  | AGRO 250   | Unique |
| AGRO 2996                  | AGRO 200   | Unique |
| <b>ANSC-ANIMAL SCIENCE</b> |            |        |
| ANSC 1110                  | ANSC 220   | Common |
| ANSC 1120                  | ANSC 100   | Common |
| ANSC 1120H                 | ANSC 100 H | Unique |
| ANSC 1120L                 | ANSC 100 L | Unique |
| ANSC 1130                  | ANSC 190   | Unique |
| ANSC 1140                  | ANSC 205   | Unique |
| ANSC 1160                  | ANSC 103   | Unique |
| ANSC 1170                  | ANSC 261   | Unique |
| ANSC 1180                  | ANSC 112   | Unique |
| ANSC 2120                  | ANSC 288   | Common |
| ANSC 2130                  | ANSC 290   | Common |
| ANSC 2140                  | ANSC 285   | Unique |
| ANSC 2150                  | ANSC 289   | Unique |
| ANSC 2310                  | ANSC 262   | Common |
| ANSC 2330                  | ANSC 200   | Common |
| ANSC 2340                  | ANSC 201   | Common |
| ANSC 2996                  | ANSC 250   | Unique |
| <b>ANTH-ANTHROPOLOGY</b>   |            |        |
| ANTH 1115G                 | ANTH 201G  | Common |
| 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 |
| <b>ARCH-ARCHITECTURE</b>        |           |        |
| 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 |
| <b>ARSC-ARTS &amp; SCIENCES</b> |           |        |
| ARSC 1115                       | A S 101   | Unique |
| ARSC 1120                       | A S 103   | Unique |
| ARSC 2996                       | A S 200   | Unique |
| ARSC 3110                       | A S 305   | N/A    |
| ARSC 3130                       | A S 350   | N/A    |
| ARSC 3996                       | A S 300   | N/A    |
| ARSC 4550                       | A S 480   | N/A    |
| ARSC 4555                       | A S 490   | N/A    |
| <b>ARTH-ART HISTORY</b>         |           |        |
| 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    |
| ARTH 310                        | ART 310   | N/A    |
| ARTH 311                        | ART 311   | N/A    |
| ARTH 312                        | ART 312   | N/A    |
| ARTH 321                        | ART 321   | N/A    |
| ARTH 323                        | ART 323   | N/A    |
| ARTH 325                        | ART 325   | N/A    |
| ARTH 330                        | ART 330   | N/A    |
| ARTH 336                        | ART 336   | N/A    |
| ARTH 338                        | ART 338   | N/A    |

|                        |          |        |
|------------------------|----------|--------|
| ARTH 339               | ART 339  | N/A    |
| ARTH 342               | ART 342  | N/A    |
| ARTH 343               | ART 343  | N/A    |
| ARTH 390               | ART 390  | N/A    |
| ARTH 444               | ART 444  | N/A    |
| ARTH 477               | ART 477  | N/A    |
| ARTH 478               | ART 478  | N/A    |
| ARTH 479               | ART 479  | N/A    |
| ARTH 500               | ART 500  | N/A    |
| ARTH 510               | ART 510  | N/A    |
| ARTH 511               | ART 511  | N/A    |
| ARTH 521               | ART 521  | N/A    |
| ARTH 525               | ART 525  | N/A    |
| ARTH 536               | ART 536  | N/A    |
| ARTH 538               | ART 538  | N/A    |
| ARTH 539               | ART 539  | N/A    |
| ARTH 542               | ART 542  | N/A    |
| ARTH 543               | ART 543  | N/A    |
| ARTH 578               | ART 578  | N/A    |
| ARTH 579               | ART 579  | N/A    |
| ARTH 597               | ART 597  | N/A    |
| ARTH 599               | ART 599  | N/A    |
| <b>ARTS-ART STUDIO</b> |          |        |
| ARTS 1121              | ART 125  | Unique |
| ARTS 1145G             | ART 110G | Unique |
| ARTS 1240              | ART 155  | Common |
| ARTS 1250              | ART 156  | Common |
| ARTS 1310              | ART 275  | Common |
| ARTS 1320              | ART 276  | Common |
| ARTS 1410              | ART 270  | Common |
| ARTS 1520              | ART 161  | Common |
| ARTS 1520              | ART 272  | Common |
| ARTS 1610              | ART 150  | Common |
| ARTS 1610              | ART 250  | Common |
| ARTS 1630              | ART 260  | Common |
| ARTS 1710              | ART 280  | Common |
| ARTS 1711              | ART 160  | Unique |
| ARTS 1712              | ART 163  | Unique |
| ARTS 1713              | ART 165  | Unique |
| ARTS 1810              | ART 285  | Common |
| ARTS 2010              | ART 267  | Common |
| ARTS 2355              | ART 286  | Unique |
| ARTS 2410              | OEPT 100 | Common |
| ARTS 2430              | OEPT 155 | Common |
| ARTS 2431              | ART 255  | Unique |
| ARTS 2440              | OEPT 120 | Unique |
| ARTS 2610              | ART 151  | Common |
| ARTS 2611              | ART 269  | Unique |
| ARTS 2616              | ART 252  | Unique |
| ARTS 2630              | ART 261  | Common |
| ARTS 2635              | ART 262  | Common |
| ARTS 2839              | ART 265  | Unique |

|                       |           |        |
|-----------------------|-----------|--------|
| ARTS 2993             | ART 208   | Unique |
| ARTS 2996             | ART 294   | Unique |
| ARTS 308              | ART 308   | N/A    |
| ARTS 340              | ART 340   | N/A    |
| ARTS 350              | ART 350   | N/A    |
| ARTS 355              | ART 355   | N/A    |
| ARTS 360              | ART 360   | N/A    |
| ARTS 365              | ART 365   | N/A    |
| ARTS 370              | ART 370   | N/A    |
| ARTS 373              | ART 373   | N/A    |
| ARTS 374              | ART 374   | N/A    |
| ARTS 375              | ART 375   | N/A    |
| ARTS 376              | ART 376   | N/A    |
| ARTS 385              | ART 385   | N/A    |
| ARTS 394              | ART 394   | N/A    |
| ARTS 401              | ART 401   | N/A    |
| ARTS 402              | ART 402   | N/A    |
| ARTS 403              | ART 403   | N/A    |
| ARTS 404              | ART 404   | N/A    |
| ARTS 440              | ART 440   | N/A    |
| ARTS 450              | ART 450   | N/A    |
| ARTS 455              | ART 455   | N/A    |
| ARTS 465              | ART 465   | N/A    |
| ARTS 470              | ART 470   | N/A    |
| ARTS 474              | ART 474   | N/A    |
| ARTS 475              | ART 475   | N/A    |
| ARTS 485              | ART 485   | N/A    |
| ARTS 490              | ART 490   | N/A    |
| ARTS 494              | ART 494   | N/A    |
| ARTS 495              | ART 495   | N/A    |
| ARTS 496              | ART 496   | N/A    |
| ARTS 499              | ART 499   | N/A    |
| ARTS 501              | ART 501   | N/A    |
| ARTS 502              | ART 502   | N/A    |
| ARTS 503              | ART 503   | N/A    |
| ARTS 504              | ART 504   | N/A    |
| ARTS 540              | ART 540   | N/A    |
| ARTS 550              | ART 550   | N/A    |
| ARTS 555              | ART 555   | N/A    |
| ARTS 560              | ART 560   | N/A    |
| ARTS 565              | ART 565   | N/A    |
| ARTS 570              | ART 570   | N/A    |
| ARTS 575              | ART 575   | N/A    |
| ARTS 576              | ART 576   | N/A    |
| ARTS 580              | ART 580   | N/A    |
| ARTS 585              | ART 585   | N/A    |
| ARTS 595              | ART 595   | N/A    |
| ARTS 596              | ART 596   | N/A    |
| ARTS 598              | ART 598   | N/A    |
| <b>ASTR-ASTRONOMY</b> |           |        |
| ASTR 1115G            | ASTR 110G | Common |
| ASTR 1116             | ASTR 199  | Unique |

|  |           |        |
|--|-----------|--------|
| ASTR 1120G                             | ASTR 105G | Unique |
| <b>AXED-AGRICULTURAL EXTN EDUC</b>     |           |        |
| AXED 1110                              | AXED 100  | Unique |
| AXED 1130                              | AXED 105  | Unique |
| AXED 2110                              | AXED 205  | Common |
| AXED 2130                              | AXED 230  | Unique |
| AXED 2140                              | AXED 232  | Unique |
| AXED 2996                              | AXED 200  | Unique |
| AXED 3115                              | AXED 303  | N/A    |
| AXED 3120                              | AXED 331  | N/A    |
| AXED 3130                              | AXED 348  | N/A    |
| AXED 3150                              | AXED 380  | N/A    |
| AXED 3210V                             | AXED 466V | N/A    |
| AXED 3996                              | AXED 300  | N/A    |
| AXED 4110                              | AXED 400  | N/A    |
| AXED 4210                              | AXED 443  | N/A    |
| AXED 4215                              | AXED 445  | N/A    |
| AXED 4220                              | AXED 446  | N/A    |
| AXED 4230                              | AXED 447  | N/A    |
| AXED 4235                              | AXED 448  | N/A    |
| AXED 4510                              | AXED 456  | N/A    |
| AXED 4520                              | AXED 460  | N/A    |
| AXED 4610                              | AXED 475  | N/A    |
| AXED 4620                              | AXED 484  | N/A    |
| AXED 4710                              | AXED 488  | N/A    |
| AXED 4715                              | AXED 489  | N/A    |
| AXED 4991                              | AXED 499  | N/A    |
| AXED 4997                              | AXED 490  | N/A    |
| AXED 5110                              | AXED 500  | N/A    |
| AXED 5155                              | AXED 515  | N/A    |
| AXED 5160                              | AXED 530  | N/A    |
| AXED 5170                              | AXED 536  | N/A    |
| AXED 5210                              | AXED 543  | N/A    |
| AXED 5215                              | AXED 545  | N/A    |
| AXED 5220                              | AXED 546  | N/A    |
| AXED 5230                              | AXED 547  | N/A    |
| AXED 5235                              | AXED 548  | N/A    |
| AXED 5310                              | AXED 565  | N/A    |
| AXED 5510                              | AXED 556  | N/A    |
| AXED 5515                              | AXED 571  | N/A    |
| AXED 5610                              | AXED 575  | N/A    |
| AXED 5615                              | AXED 586  | N/A    |
| AXED 5993                              | AXED 594  | N/A    |
| AXED 5994                              | AXED 598  | N/A    |
| AXED 5996                              | AXED 590  | N/A    |
| AXED 5998                              | AXED 595  | N/A    |
| AXED 5999                              | AXED 599  | N/A    |
| <b>BCIS- BUSINESS COMPUTER SYSTEMS</b> |           |        |
| BCIS 1110                              | BCIS 110  | Common |
| BCIS 1110                              | C S 110   | Common |
| <b>BFIN-BUSINESS FINANCE</b>           |           |        |
| BFIN 2110                              | FIN 206   | Common |

|                     |            |        |
|---------------------|------------|--------|
| BFIN 2110           | FIN 210    | Common |
| BFIN 303V           | FIN 303V   | N/A    |
| BFIN 311            | FIN 311    | N/A    |
| BFIN 322            | FIN 322    | N/A    |
| BFIN 323            | FIN 323    | N/A    |
| BFIN 324            | FIN 324    | N/A    |
| BFIN 325            | FIN 325    | N/A    |
| BFIN 326            | FIN 326    | N/A    |
| BFIN 341            | FIN 341    | N/A    |
| BFIN 355            | FIN 355    | N/A    |
| BFIN 360            | FIN 360    | N/A    |
| BFIN 385            | FIN 385    | N/A    |
| BFIN 391            | FIN 391    | N/A    |
| BFIN 392            | FIN 392    | N/A    |
| BFIN 393            | FIN 393    | N/A    |
| BFIN 406            | FIN 406    | N/A    |
| BFIN 421            | FIN 421    | N/A    |
| BFIN 435            | FIN 435    | N/A    |
| BFIN 445            | FIN 445    | N/A    |
| BFIN 455            | FIN 455    | N/A    |
| BFIN 470            | FIN 470    | N/A    |
| BFIN 475            | FIN 475    | N/A    |
| BFIN 480            | FIN 480    | N/A    |
| BFIN 490            | FIN 490    | N/A    |
| BFIN 498            | FIN 498    | N/A    |
| BFIN 500            | FIN 500    | N/A    |
| BFIN 503            | FIN 503    | N/A    |
| BFIN 511            | FIN 511    | N/A    |
| BFIN 521            | FIN 521    | N/A    |
| BFIN 535            | FIN 535    | N/A    |
| BFIN 545            | FIN 545    | N/A    |
| BFIN 555            | FIN 555    | N/A    |
| BFIN 575            | FIN 575    | N/A    |
| BFIN 581            | FIN 581    | N/A    |
| BFIN 590            | FIN 590    | N/A    |
| BFIN 598            | FIN 598    | N/A    |
| <b>BIOL-BIOLOGY</b> |            |        |
| BIOL 1120G          | BIOL 101G  | Unique |
| BIOL 1120L          | BIOL 101GL | Unique |
| BIOL 1130G          | BIOL 154   | Common |
| BIOL 1190G          | BIOL 110G  | Unique |
| BIOL 1996           | BIOL 150   | Unique |
| BIOL 2110G          | BIOL 211G  | Unique |
| BIOL 2110L          | BIOL 211GL | Unique |
| BIOL 2210           | BIOL 225   | Common |
| BIOL 2221           | BIOL 254   | Unique |
| BIOL 2225           | BIOL 226   | Common |
| BIOL 2310           | BIOL 221   | Common |
| BIOL 2310L          | BIOL 221 L | Common |
| BIOL 2320           | BIOL 219   | Unique |
| BIOL 2505           | BIOL 227   | Common |
| BIOL 2511           | BIOL 262   | Common |



|                                       |            |        |
|---------------------------------------|------------|--------|
| BIOL 2512                             | BIOL 263   | Unique |
| BIOL 2610G                            | BIOL 111G  | Common |
| BIOL 2610L                            | BIOL 111GL | Common |
| BIOL 2996                             | BIOL 250   | Unique |
| <b>BLAW-BUSINESS LAW</b>              |            |        |
| BLAW 2110                             | BLAW 230   | Common |
| BLAW 2110                             | BMGT 231   | Common |
| <b>BLED-BILINGUAL EDUCATION</b>       |            |        |
| BLED 1110                             | EDUC 103   | Common |
| BLED 2110                             | EDUC 204   | Common |
| BLED 3110                             | BLED 303   | N/A    |
| BLED 3120                             | BLED 342   | N/A    |
| BLED 3130                             | BLED 343   | N/A    |
| BLED 3140                             | BLED 344   | N/A    |
| BLED 4110                             | BLED 483   | N/A    |
| BLED 4996                             | BLED 489   | N/A    |
| BLED 5110                             | BLED 504   | N/A    |
| BLED 5120                             | BLED 505   | N/A    |
| BLED 5130                             | BLED 520   | N/A    |
| BLED 5210                             | BLED 522   | N/A    |
| BLED 5220                             | BLED 542   | N/A    |
| BLED 5230                             | BLED 543   | N/A    |
| BLED 5310                             | BLED 545   | N/A    |
| BLED 5320                             | BLED 583   | N/A    |
| BLED 5330                             | BLED 584   | N/A    |
| BLED 5410                             | BLED 585   | N/A    |
| BLED 5420                             | BLED 587   | N/A    |
| BLED 5990                             | EDUC 590   | N/A    |
| BLED 5992                             | BLED 570   | N/A    |
| BLED 5996                             | BLED 560   | N/A    |
| BLED 5998                             | BLED 550   | N/A    |
| BLED 6110                             | BLED 616   | N/A    |
| BLED 6120                             | BLED 617   | N/A    |
| BLED 6130                             | BLED 621   | N/A    |
| BLED 6210                             | BLED 623   | N/A    |
| BLED 6220                             | BLED 633   | N/A    |
| BLED 6310                             | BLED 635   | N/A    |
| BLED 6320                             | BLED 637   | N/A    |
| BLED 6992                             | BLED 670   | N/A    |
| BLED 6998                             | BLED 640   | N/A    |
| <b>BUSA-BUSINESS ADMINISTRATION</b>   |            |        |
| BUSA 1110                             | BMGT 110   | Common |
| BUSA 1110                             | BUSA 111   | Common |
| <b>CAST-CHILD ADVOCACY STUDIES</b>    |            |        |
| CAST 1110                             | CAST 201   | Unique |
| CAST 2110                             | CAST 202   | Unique |
| CAST 2120                             | CAST 203   | Unique |
| <b>CEPY-COUNSELING &amp; EDUC PSY</b> |            |        |
| CEPY 1120G                            | C EP 110G  | Unique |
| CEPY 1150                             | C EP 199   | Unique |
| CEPY 2110                             | C EP 210   | Common |
| CEPY 2120                             | C EP 215   | Unique |

|            |            |        |
|------------|------------|--------|
| CEPY 2130  | C EP 240   | Unique |
| CEPY 2140  | C EP 298   | Unique |
| CEPY 2140H | C EP 298 H | Unique |
| CEPY 3110  | CEPY 320   | N/A    |
| CEPY 3210V | CEPY 300V  | N/A    |
| CEPY 4110V | CEPY 451V  | N/A    |
| CEPY 4120  | CEPY 420   | N/A    |
| CEPY 4130  | CEPY 455   | N/A    |
| CEPY 4140  | CEPY 461   | N/A    |
| CEPY 4150  | CEPY 495   | N/A    |
| CEPY 4150H | CEPY 495 H | N/A    |
| CEPY 4997  | CEPY 499   | N/A    |
| CEPY 4998  | CEPY 498   | N/A    |
| CEPY 5110  | CEPY 503   | N/A    |
| CEPY 5120  | CEPY 512   | N/A    |
| CEPY 5130  | CEPY 517   | N/A    |
| CEPY 5140  | CEPY 515   | N/A    |
| CEPY 5150  | CEPY 520   | N/A    |
| CEPY 5160  | CEPY 522   | N/A    |
| CEPY 5170  | CEPY 524   | N/A    |
| CEPY 5180  | CEPY 556   | N/A    |
| CEPY 5210  | CEPY 532   | N/A    |
| CEPY 5220  | CEPY 542   | N/A    |
| CEPY 5230  | CEPY 550   | N/A    |
| CEPY 5235  | CEPY 554   | N/A    |
| CEPY 5240  | CEPY 558   | N/A    |
| CEPY 5250  | CEPY 562   | N/A    |
| CEPY 5260  | CEPY 566   | N/A    |
| CEPY 5270  | CEPY 551   | N/A    |
| CEPY 5280  | CEPY 563   | N/A    |
| CEPY 5310  | CEPY 505   | N/A    |
| CEPY 5320  | CEPY 552   | N/A    |
| CEPY 5985  | CEPY 572   | N/A    |
| CEPY 5990  | CEPY 578   | N/A    |
| CEPY 5997  | CEPY 598   | N/A    |
| CEPY 5998  | CEPY 580   | N/A    |
| CEPY 5999  | CEPY 599   | N/A    |
| CEPY 6120  | CEPY 612   | N/A    |
| CEPY 6130  | CEPY 617   | N/A    |
| CEPY 6140  | CEPY 615   | N/A    |
| CEPY 6150  | C EP 619   | N/A    |
| CEPY 6160  | CEPY 540   | N/A    |
| CEPY 6170  | CEPY 618   | N/A    |
| CEPY 6180  | CEPY 579   | N/A    |
| CEPY 6185  | CEPY 624   | N/A    |
| CEPY 6190  | CEPY 622   | N/A    |
| CEPY 6210  | CEPY 630   | N/A    |
| CEPY 6220  | CEPY 616   | N/A    |
| CEPY 6240  | CEPY 658   | N/A    |
| CEPY 6250  | CEPY 662   | N/A    |
| CEPY 6260  | CEPY 671   | N/A    |
| CEPY 6265  | CEPY 608   | N/A    |

|                                   |           |        |
|-----------------------------------|-----------|--------|
| CEPY 6270                         | CEPY 651  | N/A    |
| CEPY 6320                         | CEPY 652  | N/A    |
| CEPY 6330                         | CEPY 646  | N/A    |
| CEPY 6340                         | CEPY 647  | N/A    |
| CEPY 6350                         | CEPY 648  | N/A    |
| CEPY 6410                         | CEPY 634  | N/A    |
| CEPY 6420                         | CEPY 642  | N/A    |
| CEPY 6425                         | CEPY 632  | N/A    |
| CEPY 6430                         | CEPY 636  | N/A    |
| CEPY 6440                         | CEPY 637  | N/A    |
| CEPY 6450                         | CEPY 693  | N/A    |
| CEPY 6510                         | CEPY 672  | N/A    |
| CEPY 6520                         | CEPY 676  | N/A    |
| CEPY 6530                         | CEPY 675  | N/A    |
| CEPY 6540                         | CEPY 681  | N/A    |
| CEPY 6550                         | CEPY 673  | N/A    |
| CEPY 6560                         | CEPY 677  | N/A    |
| CEPY 6570                         | CEPY 678  | N/A    |
| CEPY 6580                         | CEPY 679  | N/A    |
| CEPY 6590                         | CEPY 670  | N/A    |
| CEPY 6610                         | CEPY 684  | N/A    |
| CEPY 6620                         | CEPY 680  | N/A    |
| CEPY 6630                         | CEPY 682  | N/A    |
| CEPY 6640                         | CEPY 685  | N/A    |
| CEPY 6996                         | CEPY 698  | N/A    |
| CEPY 6999                         | CEPY 699  | N/A    |
| CEPY 7000                         | C EP 700  | N/A    |
| <b>CHEM-CHEMISTRY</b>             |           |        |
| CHEM 1111                         | CHEM 100  | Unique |
| CHEM 1120G                        | CHEM 110G | Common |
| CHEM 1121                         | CHEM 101  | Unique |
| CHEM 1122                         | CHEM 102  | Unique |
| CHEM 1123                         | CHEM 103  | Unique |
| CHEM 1215G                        | CHEM 111G | Common |
| CHEM 1216                         | CHEM 115  | Unique |
| CHEM 1225G                        | CHEM 112G | Common |
| CHEM 1226                         | CHEM 116  | Unique |
| CHEM 2111                         | CHEM 242  | Unique |
| CHEM 2115                         | CHEM 211  | Common |
| CHEM 2120                         | CHEM 210  | Common |
| CHEM 2226                         | CHEM 217  | Unique |
| CHEM 2991                         | CHEM 241  | Unique |
| CHEM 2996                         | CHEM 251  | Unique |
| <b>CHIN-CHINESE</b>               |           |        |
| CHIN 1110                         | CHIN 111  | Common |
| CHIN 1120                         | CHIN 112  | Common |
| CHIN 2110                         | CHIN 211  | Common |
| CHIN 2120                         | CHIN 212  | Common |
| <b>CHSS-CONN HEALTH/SOC SRVCS</b> |           |        |
| CHSS 1110                         | CHSS 101  | Unique |
| CHSS 2110                         | CHSS 216  | Unique |
| CHSS 2510                         | CHSS 299  | Common |

|                              |          |        |
|------------------------------|----------|--------|
| CHSS 2511                    | CHSS 295 | Unique |
| <b>CJUS-CRIMINAL JUSTICE</b> |          |        |
| CJUS 1110G                   | C J 101G | Common |
| CJUS 1120                    | C J 205  | Common |
| CJUS 1996                    | C J 199  | Unique |
| CJUS 2120                    | C J 250  | Common |
| CJUS 2140                    | C J 221  | Common |
| CJUS 2150                    | C J 230  | Common |
| CJUS 2160                    | C J 293  | Common |
| CJUS 2220                    | C J 210  | Common |
| CJUS 300                     | C J 300  | N/A    |
| CJUS 301                     | C J 301  | N/A    |
| CJUS 302                     | C J 302  | N/A    |
| CJUS 303                     | C J 303  | N/A    |
| CJUS 304                     | C J 304  | N/A    |
| CJUS 306                     | C J 306  | N/A    |
| CJUS 307                     | C J 307  | N/A    |
| CJUS 321                     | C J 321  | N/A    |
| CJUS 331                     | C J 331  | N/A    |
| CJUS 332                     | C J 332  | N/A    |
| CJUS 333                     | C J 333  | N/A    |
| CJUS 345                     | C J 345  | N/A    |
| CJUS 346                     | C J 346  | N/A    |
| CJUS 347                     | C J 347  | N/A    |
| CJUS 348                     | C J 348  | N/A    |
| CJUS 360                     | C J 360  | N/A    |
| CJUS 380                     | C J 380  | N/A    |
| CJUS 391                     | C J 391  | N/A    |
| CJUS 393                     | C J 393  | N/A    |
| CJUS 399                     | C J 399  | N/A    |
| CJUS 405                     | C J 405  | N/A    |
| CJUS 410                     | C J 410  | N/A    |
| CJUS 412                     | C J 412  | N/A    |
| CJUS 414                     | C J 414  | N/A    |
| CJUS 416                     | C J 416  | N/A    |
| CJUS 417                     | C J 417  | N/A    |
| CJUS 424                     | C J 424  | N/A    |
| CJUS 425                     | C J 425  | N/A    |
| CJUS 427                     | C J 427  | N/A    |
| CJUS 428                     | C J 428  | N/A    |
| CJUS 429                     | C J 429  | N/A    |
| CJUS 430                     | C J 430  | N/A    |
| CJUS 431                     | C J 431  | N/A    |
| CJUS 432                     | C J 432  | N/A    |
| CJUS 434                     | C J 434  | N/A    |
| CJUS 435                     | C J 435  | N/A    |
| CJUS 436                     | C J 436  | N/A    |
| CJUS 437                     | C J 437  | N/A    |
| CJUS 440V                    | C J 440V | N/A    |
| CJUS 449                     | C J 449  | N/A    |
| CJUS 451                     | C J 451  | N/A    |
| CJUS 453                     | C J 453  | N/A    |

|                          |         |        |
|--------------------------|---------|--------|
| CJUS 454                 | C J 454 | N/A    |
| CJUS 455                 | C J 455 | N/A    |
| CJUS 484                 | C J 484 | N/A    |
| CJUS 501                 | C J 501 | N/A    |
| CJUS 511                 | C J 511 | N/A    |
| CJUS 514                 | C J 514 | N/A    |
| CJUS 515                 | C J 515 | N/A    |
| CJUS 520                 | C J 520 | N/A    |
| CJUS 524                 | C J 524 | N/A    |
| CJUS 525                 | C J 525 | N/A    |
| CJUS 527                 | C J 527 | N/A    |
| CJUS 529                 | C J 529 | N/A    |
| CJUS 531                 | C J 531 | N/A    |
| CJUS 532                 | C J 532 | N/A    |
| CJUS 535                 | C J 535 | N/A    |
| CJUS 537                 | C J 537 | N/A    |
| CJUS 541                 | C J 541 | N/A    |
| CJUS 545                 | C J 545 | N/A    |
| CJUS 555                 | C J 555 | N/A    |
| CJUS 560                 | C J 560 | N/A    |
| CJUS 581                 | C J 581 | N/A    |
| CJUS 591                 | C J 591 | N/A    |
| CJUS 592                 | C J 592 | N/A    |
| CJUS 593                 | C J 593 | N/A    |
| CJUS 599                 | C J 599 | N/A    |
| <b>CNST-CONSTRUCTION</b> |         |        |
| CNST 1110                | BCT 100 | Common |
| CNST 1121                | BCT 101 | Unique |
| CNST 1122                | BCT 102 | Unique |
| CNST 1133                | BCT 103 | Unique |
| CNST 1144                | BCT 104 | Unique |
| CNST 1155                | BCT 105 | Unique |
| CNST 1166                | BCT 106 | Unique |
| CNST 1160                | BCT 109 | Common |
| CNST 1120                | BCT 110 | Common |
| CNST 1311                | BCT 111 | Unique |
| CNST 1114                | BCT 114 | Unique |
| CNST 1115                | BCT 115 | Unique |
| CNST 1116                | BCT 116 | Unique |
| CNST 1118                | BCT 118 | Unique |
| CNST 1220                | BCT 123 | Common |
| CNST 1330                | BCT 130 | Unique |
| CNST 1710                | BCT 150 | Unique |
| CNST 1240                | BCT 206 | Common |
| CNST 2290                | BCT 209 | Unique |
| CNST 2217                | BCT 217 | Unique |
| CNST 1215                | BCT 219 | Common |
| CNST 2995                | BCT 221 | Common |
| CNST 1230                | BCT 223 | Common |
| CNST 2996                | BCT 255 | Common |
| CNST 2994                | BCT 290 | Unique |

**COMM-COMMUNICATION**

|                              |           |        |
|------------------------------|-----------|--------|
| COMM 1115G                   | COMM 265G | Common |
| COMM 1130G                   | COMM 253G | Common |
| COMM 2110                    | COMM 285  | Unique |
| COMM 2111                    | COMM 250  | Unique |
| COMM 2996                    | COMM 291  | Unique |
| COMM 2997                    | COMM 290  | Unique |
| COMM 3110                    | COMM 310  | N/A    |
| COMM 3120                    | COMM 351  | N/A    |
| COMM 3510                    | COMM 370  | N/A    |
| COMM 3710                    | COMM 376  | N/A    |
| COMM 3530                    | COMM 377  | N/A    |
| COMM 3610                    | COMM 384  | N/A    |
| COMM 4210                    | COMM 440  | N/A    |
| COMM 4220                    | COMM 450  | N/A    |
| COMM 4230                    | COMM 457  | N/A    |
| COMM 4310                    | COMM 471  | N/A    |
| COMM 4520                    | COMM 425  | N/A    |
| COMM 4530                    | COMM 470  | N/A    |
| COMM 4550                    | COMM 478  | N/A    |
| COMM 4560                    | COMM 479  | N/A    |
| COMM 4620                    | COMM 460  | N/A    |
| COMM 4630                    | COMM 462  | N/A    |
| COMM 4640                    | COMM 465  | N/A    |
| COMM 4720                    | COMM 475  | N/A    |
| COMM 4730                    | COMM 477  | N/A    |
| COMM 4750                    | COMM 480  | N/A    |
| COMM 4997                    | COMM 490  | N/A    |
| COMM 4996                    | COMM 491  | N/A    |
| COMM 4998                    | COMM 495  | N/A    |
| COMM 5110                    | COMM 583  | N/A    |
| COMM 5120                    | COMM 551  | N/A    |
| COMM 5130                    | COMM 505  | N/A    |
| COMM 5140                    | COMM 506  | N/A    |
| COMM 5210                    | COMM 540  | N/A    |
| COMM 5220                    | COMM 550  | N/A    |
| COMM 5230                    | COMM 557  | N/A    |
| COMM 5310                    | COMM 571  | N/A    |
| COMM 5510                    | COMM 570  | N/A    |
| COMM 5710                    | COMM 576  | N/A    |
| COMM 5610                    | COMM 584  | N/A    |
| COMM 5550                    | COMM 578  | N/A    |
| COMM 5560                    | COMM 579  | N/A    |
| COMM 5630                    | COMM 562  | N/A    |
| COMM 5640                    | COMM 565  | N/A    |
| COMM 5994                    | COMM 598  | N/A    |
| COMM 5996                    | COMM 591  | N/A    |
| COMM 5997                    | COMM 590  | N/A    |
| COMM 5998                    | COMM 595  | N/A    |
| COMM 5999                    | COMM 599  | N/A    |
| <b>CSCI-COMPUTER SCIENCE</b> |           |        |
| CSCI 1110                    | C S 111   | Unique |
| CSCI 1115G                   | C S 171G  | Unique |

|           |         |        |
|-----------|---------|--------|
| CSCI 1120 | C S 117 | Unique |
| CSCI 1240 | C S 151 | Common |
| CSCI 1210 | C S 152 | Common |
| CSCI 1220 | C S 153 | Common |
| CSCI 1225 | C S 154 | Unique |
| CSCI 1235 | C S 158 | Unique |
| CSCI 1720 | C S 172 | Unique |
| CSCI 2996 | C S 209 | Common |
| CSCI 2210 | C S 271 | Common |
| CSCI 2220 | C S 272 | Common |
| CSCI 2230 | C S 273 | Common |
| CSCI 2310 | C S 278 | Common |
| CSCI 2410 | C S 281 | Common |
| CSCI 3790 | C S 343 | N/A    |
| CSCI 3730 | C S 370 | N/A    |
| CSCI 3710 | C S 371 | N/A    |
| CSCI 3720 | C S 372 | N/A    |
| CSCI 4225 | C S 380 | N/A    |
| CSCI 4270 | C S 381 | N/A    |
| CSCI 4265 | C S 382 | N/A    |
| CSCI 4425 | C S 383 | N/A    |
| CSCI 4430 | C S 384 | N/A    |
| CSCI 4240 | C S385  | N/A    |
| CSCI 3410 | C S 390 | N/A    |
| CSCI 4435 | C S 391 | N/A    |
| CSCI 4235 | C S 394 | N/A    |
| CSCI 4440 | C S 395 | N/A    |
| CSCI 3997 | C S 409 | N/A    |
| CSCI 4110 | C S 419 | N/A    |
| CSCI 4980 | C S 448 | N/A    |
| CSCI 4999 | C S449  | N/A    |
| CSCI 4510 | C S 451 | N/A    |
| CSCI 4505 | C S452  | N/A    |
| CSCI 4520 | C S 453 | N/A    |
| CSCI 4525 | C S 454 | N/A    |
| CSCI 4530 | C S 458 | N/A    |
| CSCI 4540 | C S 460 | N/A    |
| CSCI 4545 | C S 462 | N/A    |
| CSCI 4550 | C S 463 | N/A    |
| CSCI 4560 | C S 465 | N/A    |
| CSCI 4580 | C S 466 | N/A    |
| CSCI 4575 | C S 468 | N/A    |
| CSCI 5110 | C S 469 | N/A    |
| CSCI 4105 | C S 471 | N/A    |
| CSCI 4230 | C S 473 | N/A    |
| CSCI 4120 | C S 474 | N/A    |
| CSCI 4405 | C S 475 | N/A    |
| CSCI 4410 | C S 476 | N/A    |
| CSCI 4255 | C S 477 | N/A    |
| CSCI 4205 | C S 478 | N/A    |
| CSCI 4996 | C S 479 | N/A    |
| CSCI 4130 | C S 480 | N/A    |

|           |         |     |
|-----------|---------|-----|
| CSCI 4260 | C S 481 | N/A |
| CSCI 4140 | C S 482 | N/A |
| CSCI 4245 | C S 484 | N/A |
| CSCI 4250 | C S 485 | N/A |
| CSCI 4305 | C S 486 | N/A |
| CSCI 4420 | C S 487 | N/A |
| CSCI 4415 | C S 488 | N/A |
| CSCI 4310 | C S 489 | N/A |
| CSCI 4215 | C S 491 | N/A |
| CSCI 4565 | C S 493 | N/A |
| CSCI 4210 | C S 494 | N/A |
| CSCI 4220 | C S 496 | N/A |
| CSCI 5140 | C S 502 | N/A |
| CSCI 5245 | C S 504 | N/A |
| CSCI 5405 | C S 505 | N/A |
| CSCI 5410 | C S 506 | N/A |
| CSCI 5415 | C S 508 | N/A |
| CSCI 5310 | C S 509 | N/A |
| CSCI 5510 | C S 510 | N/A |
| CSCI 5205 | C S 513 | N/A |
| CSCI 5210 | C S 514 | N/A |
| CSCI 5250 | C S 515 | N/A |
| CSCI 5305 | C S 516 | N/A |
| CSCI 5255 | C S 517 | N/A |
| CSCI 5260 | C S 518 | N/A |
| CSCI 5420 | C S 519 | N/A |
| CSCI 5215 | C S 521 | N/A |
| CSCI 5220 | C S 522 | N/A |
| CSCI 5225 | C S 525 | N/A |
| CSCI 5265 | C S 532 | N/A |
| CSCI 5425 | C S 533 | N/A |
| CSCI 5430 | C S 534 | N/A |
| CSCI 5240 | C S 535 | N/A |
| CSCI 5435 | C S 536 | N/A |
| CSCI 5235 | C S 544 | N/A |
| CSCI 5440 | C S 545 | N/A |
| CSCI 5505 | C S 570 | N/A |
| CSCI 5605 | C S 574 | N/A |
| CSCI 5750 | C S 575 | N/A |
| CSCI 5996 | C S 579 | N/A |
| CSCI 5810 | C S 581 | N/A |
| CSCI 5820 | C S 582 | N/A |
| CSCI 5840 | C S 584 | N/A |
| CSCI 5860 | C S 586 | N/A |
| CSCI 5991 | C S 589 | N/A |
| CSCI 5994 | C S 598 | N/A |
| CSCI 5999 | C S 599 | N/A |
| CSCI 6991 | C S 600 | N/A |
| CSCI 7000 | C S 700 | N/A |

**CTFM-CLTHNG/TXTLS/FSHN MRCHDSG**

|           |          |        |
|-----------|----------|--------|
| CTFM 1110 | CTFM 178 | Unique |
| CTFM 2120 | CTFM 270 | Unique |



|                   |            |        |
|-------------------|------------|--------|
| CTFM 2130         | CTFM 273   | Unique |
| CTFM 2990         | CTFM 202   | Unique |
| <b>DANC-DANCE</b> |            |        |
| DANC 1110G        | DANC 101G  | Common |
| DANC 1130         | DANC 123   | Common |
| DANC 1131         | DANC 125   | Unique |
| DANC 1135         | DANC 109   | Unique |
| DANC 1140         | DANC 129   | Common |
| DANC 1150         | DANC 126   | Common |
| DANC 1155         | DANC 102   | Common |
| DANC 1185         | DANC 121   | Unique |
| DANC 1220         | DANC 122   | Unique |
| DANC 1235         | DANC 118   | Unique |
| DANC 2114         | DANC 204   | Unique |
| DANC 2130         | DANC 223   | Common |
| DANC 2130L        | DANC 223 L | Unique |
| DANC 2140         | DANC 229   | Common |
| DANC 2140L        | DANC 229 L | Unique |
| DANC 2142         | DANC 210   | Unique |
| DANC 2142L        | DANC 210 L | Unique |
| DANC 2150         | DANC 226   | Common |
| DANC 2150L        | DANC 226 L | Unique |
| DANC 2155         | DANC 207   | Unique |
| DANC 2157         | DANC 212   | Unique |
| DANC 2161         | DANC 227   | Unique |
| DANC 2250         | DANC 205   | Unique |
| DANC 2251         | DANC 206   | Unique |
| DANC 2265         | DANC 289   | Unique |
| DANC 2270         | DANC 280   | Unique |
| DANC 2310         | DANC 222   | Unique |
| DANC 2311         | DANC 225   | Unique |
| DANC 2320         | DANC 232   | Unique |
| DANC 2321         | DANC 235   | Unique |
| DANC 3110         | DANC 345   | N/A    |
| DANC 3114         | DANC 304   | N/A    |
| DANC 3130         | DANC 323   | N/A    |
| DANC 3130L        | DANC 323 L | N/A    |
| DANC 3140         | DANC 329   | N/A    |
| DANC 3140L        | DANC 329 L | N/A    |
| DANC 3142         | DANC 310   | N/A    |
| DANC 3142L        | DANC 310 L | N/A    |
| DANC 3145         | DANC 339   | N/A    |
| DANC 3150         | DANC 326   | N/A    |
| DANC 3150L        | DANC 326 L | N/A    |
| DANC 3155         | DANC 307   | N/A    |
| DANC 3157         | DANC 312   | N/A    |
| DANC 3175         | DANC 375   | N/A    |
| DANC 3250         | DANC 305   | N/A    |
| DANC 3251         | DANC 306   | N/A    |
| DANC 3265         | DANC 389   | N/A    |
| DANC 3310         | DANC 322   | N/A    |
| DANC 3311         | DANC 325   | N/A    |

|            |           |     |
|------------|-----------|-----|
| DANC 3320  | DANC 332  | N/A |
| DANC 3321  | DANC 335  | N/A |
| DANC 3510V | DANC 451V | N/A |
| DANC 4250  | DANC 466  | N/A |
| DANC 4266  | DANC 489  | N/A |
| DANC 4310  | DANC 422  | N/A |
| DANC 4311  | DANC 425  | N/A |
| DANC 4320  | DANC 432  | N/A |
| DANC 4321  | DANC 435  | N/A |
| DANC 4610  | DANC 447  | N/A |
| DANC 4710  | DANC 465  | N/A |
| DANC 4990  | DANC 411  | N/A |
| DANC 4990  | DANC 412  | N/A |
| DANC 4990  | DANC 413  | N/A |
| DANC 4996  | DANC 450  | N/A |
| DANC 4997  | DANC 499  | N/A |
| DANC 5114  | DANC 504  | N/A |
| DANC 5130  | DANC 523  | N/A |
| DANC 5140  | DANC 529  | N/A |
| DANC 5142  | DANC 510  | N/A |
| DANC 5145  | DANC 539  | N/A |
| DANC 5150  | DANC 526  | N/A |
| DANC 5155  | DANC 507  | N/A |
| DANC 5157  | DANC 512  | N/A |
| DANC 5250  | DANC 505  | N/A |
| DANC 5251  | DANC 506  | N/A |
| DANC 5310  | DANC 522  | N/A |
| DANC 5311  | DANC 525  | N/A |
| DANC 5320  | DANC 532  | N/A |
| DANC 5321  | DANC 535  | N/A |
| DANC 5510  | DANC 551  | N/A |
| DANC 5550  | DANC 566  | N/A |
| DANC 5710  | DANC 570  | N/A |
| DANC 5900  | DANC 599  | N/A |
| DANC 5992  | DANC 501  | N/A |
| DANC 5996  | DANC 550  | N/A |
| DANC 5998  | DANC 567  | N/A |
| DANC 6998  | DANC 670  | N/A |

**ECED-EARLY CHILDHOOD EDUCATION**

|           |          |        |
|-----------|----------|--------|
| ECED 1110 | ECED 115 | Common |
| ECED 1115 | ECED 125 | Common |
| ECED 1120 | ECED 265 | Common |
| ECED 1125 | ECED 255 | Common |
| ECED 1130 | ECED 135 | Common |
| ECED 2110 | ECED 245 | Common |
| ECED 2115 | ECED 235 | Common |
| ECED 2120 | ECED 215 | Common |
| ECED 2121 | ECED 220 | Common |
| ECED 2130 | ECED 225 | Common |
| ECED 2131 | ECED 230 | Common |
| ECED 2140 | ECED 275 | Common |
| ECED 2141 | ECED 276 | Common |

|                       |            |        |
|-----------------------|------------|--------|
| ECED 2215             | ECED 270   | Common |
| ECED 2280             | ECED 280   | Common |
| ECED 2281             | ECED 281   | Unique |
| ECED 3110             | ECED 325   | N/A    |
| ECED 3120             | ECED 345   | N/A    |
| ECED 3210             | ECED 351   | N/A    |
| ECED 3996             | ECED 395   | N/A    |
| ECED 4110             | SPED 450   | N/A    |
| ECED 4120             | SPED 451   | N/A    |
| ECED 4210             | ECED 420   | N/A    |
| ECED 4211             | ECED 425   | N/A    |
| ECED 4220             | ECED 465   | N/A    |
| ECED 4250             | ECED 440   | N/A    |
| ECED 4260             | ECED 455   | N/A    |
| ECED 4310             | ECED 329   | N/A    |
| ECED 4320             | RDG 350    | N/A    |
| ECED 4810             | ECED 470   | N/A    |
| ECED 4996             | ECED 489   | N/A    |
| ECED 4998             | ECED 458   | N/A    |
| ECED 5110             | SPED 550   | N/A    |
| ECED 5120             | SPED 551   | N/A    |
| ECED 5130             | ECED 515   | N/A    |
| ECED 5210             | ECED 530   | N/A    |
| ECED 5220             | ECED 570   | N/A    |
| ECED 5230             | ECED 479   | N/A    |
| ECED 5310             | ECED 510   | N/A    |
| ECED 5410             | ECED 520   | N/A    |
| ECED 5420             | ECED 540   | N/A    |
| ECED 5510             | RDG 550    | N/A    |
| ECED 5520             | RDG 551    | N/A    |
| ECED 5810             | ECED 550   | N/A    |
| ECED 6110             | ECED 612   | N/A    |
| ECED 6996             | ECED 698   | N/A    |
| <b>ECON-ECONOMICS</b> |            |        |
| ECON 1110G            | ECON 201G  | Common |
| ECON 2110G            | ECON 251G  | Common |
| ECON 2110H            | ECON 251GH | Common |
| ECON 2120G            | ECON 252G  | Common |
| ECON 2120H            | ECON 252GH | Common |
| <b>EDLT-EDUCATION</b> |            |        |
| EDLT 2110             | EDLT 268   | Unique |
| EDLT 3110             | EDLT 368   | N/A    |
| EDLT 5110             | EDLT 528   | N/A    |
| EDLT 5120             | EDLT 520   | N/A    |
| EDLT 5130             | EDLT 522   | N/A    |
| EDLT 5140             | EDLT 560   | N/A    |
| EDLT 5210             | EDLT 561   | N/A    |
| EDLT 5220             | EDLT 573   | N/A    |
| EDLT 5230             | EDLT 575   | N/A    |
| EDLT 5240             | EDLT 577   | N/A    |
| EDLT 5250             | EDLT 580   | N/A    |
| EDLT 5310             | EDLT 578   | N/A    |

|                       |          |        |
|-----------------------|----------|--------|
| EDLT 5320             | EDLT 579 | N/A    |
| EDLT 5330             | EDLT 581 | N/A    |
| EDLT 5992             | EDLT 592 | N/A    |
| EDLT 5999             | EDLT 590 | N/A    |
| EDLT 6110             | EDLT 628 | N/A    |
| EDLT 6120             | EDLT 672 | N/A    |
| EDLT 6210             | EDLT 607 | N/A    |
| EDLT 6220             | EDLT 620 | N/A    |
| EDLT 6230             | EDLT 610 | N/A    |
| EDLT 6240             | EDLT 677 | N/A    |
| EDLT 6998             | EDLT 612 | N/A    |
| <b>EDUC-EDUCATION</b> |          |        |
| EDUC 1110             | EDUC 101 | Unique |
| EDUC 1120             | EDUC 250 | Common |
| EDUC 1140             | EDUC 150 | Unique |
| EDUC 1150             | EDUC 151 | Unique |
| EDUC 1185             | EDUC 281 | Unique |
| EDUC 1995             | EDUC 181 | Unique |
| EDUC 1996             | EDUC 195 | Unique |
| EDUC 1998             | EDUC 102 | Unique |
| EDUC 2710             | EDUC 219 | Unique |
| EDUC 2998             | EDUC 202 | Unique |
| EDUC 3110V            | EDUC 317 | N/A    |
| EDUC 3120             | EDUC 315 | N/A    |
| EDUC 3220             | EDUC 343 | N/A    |
| EDUC 3996             | EDUC 395 | N/A    |
| EDUC 3997             | EDUC 381 | N/A    |
| EDUC 4310             | EDUC 451 | N/A    |
| EDUC 4320             | EDUC 452 | N/A    |
| EDUC 4330             | EDUC 454 | N/A    |
| EDUC 4410             | EDUC 463 | N/A    |
| EDUC 4420             | EDUC 462 | N/A    |
| EDUC 4430             | EDUC 461 | N/A    |
| EDUC 4440             | EDUC 460 | N/A    |
| EDUC 4510             | EDUC 402 | N/A    |
| EDUC 4520             | EDUC 475 | N/A    |
| EDUC 4530             | EDUC 476 | N/A    |
| EDUC 4810             | EDUC 470 | N/A    |
| EDUC 4811             | EDUC 481 | N/A    |
| EDUC 4820             | EDUC 471 | N/A    |
| EDUC 4821             | EDUC 482 | N/A    |
| EDUC 4992             | EDUC 495 | N/A    |
| EDUC 4996             | EDUC 489 | N/A    |
| EDUC 5110             | EDUC 530 | N/A    |
| EDUC 5120             | EDUC 515 | N/A    |
| EDUC 5130             | EDUC 518 | N/A    |
| EDUC 5140             | EDUC 519 | N/A    |
| EDUC 5150             | EDUC 505 | N/A    |
| EDUC 5160             | EDUC 516 | N/A    |
| EDUC 5170             | EDUC 520 | N/A    |
| EDUC 5210             | EDUC 542 | N/A    |
| EDUC 5220             | EDUC 543 | N/A    |

|   |           |        |
|---|-----------|--------|
| EDUC 5310                               | EDUC 551  | N/A    |
| EDUC 5320                               | EDUC 552  | N/A    |
| EDUC 5330                               | EDUC 554  | N/A    |
| EDUC 5410                               | EDUC 563  | N/A    |
| EDUC 5420                               | EDUC 562  | N/A    |
| EDUC 5430                               | EDUC 561  | N/A    |
| EDUC 5440                               | EDUC 560  | N/A    |
| EDUC 5510                               | EDUC 573  | N/A    |
| EDUC 5520                               | EDUC 571  | N/A    |
| EDUC 5530                               | EDUC 572  | N/A    |
| EDUC 5540                               | EDUC 577  | N/A    |
| EDUC 5810                               | EDUC 510  | N/A    |
| EDUC 5811                               | EDUC 509  | N/A    |
| EDUC 5990                               | EDUC 5999 | N/A    |
| EDUC 5991                               | EDUC 598  | N/A    |
| EDUC 5992                               | EDUC 595  | N/A    |
| EDUC 5996                               | EDUC 501  | N/A    |
| EDUC 5997                               | EDUC 5999 | N/A    |
| EDUC 5998                               | EDUC 558  | N/A    |
| EDUC 6110                               | EDUC 603  | N/A    |
| EDUC 6120                               | EDUC 604  | N/A    |
| EDUC 6210                               | EDUC 623  | N/A    |
| EDUC 6220                               | EDUC 633  | N/A    |
| EDUC 6230                               | EDUC 634  | N/A    |
| EDUC 6310                               | EDUC 635  | N/A    |
| EDUC 6320                               | EDUC 637  | N/A    |
| EDUC 6330                               | EDUC 630  | N/A    |
| EDUC 6410                               | EDUC 607  | N/A    |
| EDUC 6420                               | EDUC 613  | N/A    |
| EDUC 6430                               | EDUC 636  | N/A    |
| EDUC 6440                               | EDUC 606  | N/A    |
| EDUC 6910                               | EDUC 694  | N/A    |
| EDUC 6990                               | EDUC 685  | N/A    |
| EDUC 6991                               | EDUC 600  | N/A    |
| EDUC 6996                               | EDUC 698  | N/A    |
| EDUC 6997                               | EDUC 605  | N/A    |
| EDUC 6998                               | EDUC 602  | N/A    |
| EDUC 6999                               | EDUC 699  | N/A    |
| EDUC 7000                               | EDUC 700  | N/A    |
| <b>ELAD-EDUC LEADERSHIP &amp; ADMIN</b> |           |        |
| ELAD 2210                               | ELA 255   | Unique |
| ELAD 2340                               | ELA 215   | Unique |
| ELAD 2996                               | ELA 298   | Unique |
| ELAD 3110V                              | ELAD 350V | N/A    |
| ELAD 3210                               | ELAD 342  | N/A    |
| ELAD 3996                               | ELAD 398  | N/A    |
| ELAD 4110                               | ELAD 440  | N/A    |
| ELAD 4120                               | ELAD 450  | N/A    |
| ELAD 4130                               | ELAD 455  | N/A    |
| ELAD 4410                               | ELAD 411  | N/A    |
| ELAD 4420                               | ELAD 412  | N/A    |
| ELAD 4510                               | ELAD 485  | N/A    |

|                        |          |        |
|------------------------|----------|--------|
| ELAD 4998              | ELAD 499 | N/A    |
| ELAD 5110              | ELAD 575 | N/A    |
| ELAD 5120              | ELAD 578 | N/A    |
| ELAD 5130              | ELAD 590 | N/A    |
| ELAD 5140              | ELAD 576 | N/A    |
| ELAD 5150              | ELAD 579 | N/A    |
| ELAD 5160              | ELAD 530 | N/A    |
| ELAD 5170              | ELAD 531 | N/A    |
| ELAD 5180              | ELAD 564 | N/A    |
| ELAD 5185              | ELAD 565 | N/A    |
| ELAD 5210              | ELAD 582 | N/A    |
| ELAD 5215              | ELAD 563 | N/A    |
| ELAD 5220              | ELAD 520 | N/A    |
| ELAD 5230              | ELAD 555 | N/A    |
| ELAD 5240              | ELAD 540 | N/A    |
| ELAD 5250              | ELAD 550 | N/A    |
| ELAD 5260              | ELAD 580 | N/A    |
| ELAD 5270              | ELAD 569 | N/A    |
| ELAD 5280              | ELAD 566 | N/A    |
| ELAD 5285              | ELAD 567 | N/A    |
| ELAD 5310              | ELAD 586 | N/A    |
| ELAD 5320              | ELAD 570 | N/A    |
| ELAD 5410              | ELAD 511 | N/A    |
| ELAD 5510              | ELAD 585 | N/A    |
| ELAD 5992              | ELAD 502 | N/A    |
| ELAD 5996              | ELAD 595 | N/A    |
| ELAD 5997              | ELAD 598 | N/A    |
| ELAD 6110              | ELAD 615 | N/A    |
| ELAD 6120              | ELAD 685 | N/A    |
| ELAD 6210              | ELAD 622 | N/A    |
| ELAD 6220              | ELAD 623 | N/A    |
| ELAD 6310              | ELAD 630 | N/A    |
| ELAD 6320              | ELAD 671 | N/A    |
| ELAD 6410              | ELAD 682 | N/A    |
| ELAD 6510              | ELAD 683 | N/A    |
| ELAD 6520              | ELAD 679 | N/A    |
| ELAD 6525              | ELAD 650 | N/A    |
| ELAD 6610              | ELAD 635 | N/A    |
| ELAD 6620              | ELAD 689 | N/A    |
| ELAD 6630              | ELAD 676 | N/A    |
| ELAD 6635              | ELAD 655 | N/A    |
| ELAD 6710              | ELAD 645 | N/A    |
| ELAD 6910              | ELAD 693 | N/A    |
| ELAD 6991              | ELAD 600 | N/A    |
| ELAD 6996              | ELAD 698 | N/A    |
| ELAD 6998              | ELAD 670 | N/A    |
| ELAD 7000              | ELAD 700 | N/A    |
| <b>ELTR-ELECTRICAL</b> |          |        |
| ELTR 1130              | ELWK 130 | Common |
| ELTR 1160              | ELWK 131 | Common |
| ELTR 1230              | BCT 223  | Common |
| ELTR 2120              | ELWK 140 | Common |

|                                   |            |        |
|-----------------------------------|------------|--------|
| ELTR 1165                         | ELWK 141   | Common |
| ELTR 2995                         | ELWK 221   | Common |
| ELTR 1120                         | OEET 110   | Common |
| ELTR 1140                         | OEET 120   | Common |
| ELTR 1115                         | OEET 205   | Common |
| ELTR 2891                         | OEET 251   | Common |
| ELTR 2892                         | OEET 252   | Common |
| ELTR 2893                         | OEET 253   | Common |
| ELTR 2894                         | OEET 254   | Common |
| ELTR 1996                         | OEET 295   | Common |
| <b>ENGL-ENGLISH</b>               |            |        |
| ENGL 1105M                        | SPCD 1110  | Unique |
| ENGL 1110G                        | ENGL 111G  | Common |
| ENGL 1110H                        | ENGL 111GH | Unique |
| ENGL 1110M                        | ENGL 111 M | Unique |
| ENGL 1120                         | ENGL 112   | Common |
| ENGL 1410G                        | ENGL 115G  | Common |
| ENGL 2130G                        | ENGL 311G  | Common |
| ENGL 2210G                        | ENGL 203G  | Common |
| ENGL 2210G                        | ENGL 218G  | Common |
| ENGL 2215G                        | ENGL 318G  | Unique |
| ENGL 2221G                        | ENGL 211G  | Unique |
| ENGL 2280                         | ENGL 263   | Unique |
| ENGL 2310G                        | ENGL 220G  | Common |
| ENGL 2381                         | ENGL 232   | Unique |
| ENGL 2382                         | ENGL 235   | Unique |
| ENGL 2520G                        | ENGL 116G  | Common |
| ENGL 2521                         | ENGL 243   | Unique |
| ENGL 2610                         | ENGL 251   | Common |
| ENGL 2620                         | ENGL 252   | Common |
| ENGL 2630                         | ENGL 271   | Common |
| ENGL 2640                         | ENGL 272   | Common |
| ENGL 2650G                        | ENGL 244G  | Common |
| ENGL 2996                         | ENGL 299   | Unique |
| <b>ENTR-ENTREPRENEURSHIP</b>      |            |        |
| ENTR 1110                         | BMGT 275   | Common |
| <b>ENVS-ENVIRONMENTAL SCIENCE</b> |            |        |
| ENVS 1110G                        | E S 110G   | Common |
| ENVS 2111                         | E S 256    | Unique |
| ENVS 2111L                        | E S 256 L  | Unique |
| ENVS 300                          | E S 300    | N/A    |
| ENVS 301                          | E S 301    | N/A    |
| ENVS 312                          | E S 312    | N/A    |
| ENVS 361                          | E S 361    | N/A    |
| ENVS 370                          | E S 370    | N/A    |
| ENVS 391                          | E S 391    | N/A    |
| ENVS 422                          | E S 422    | N/A    |
| ENVS 449                          | E S 449    | N/A    |
| ENVS 451                          | E S 451    | N/A    |
| ENVS 452                          | E S 452    | N/A    |
| ENVS 457                          | E S 457    | N/A    |
| ENVS 460                          | E S 460    | N/A    |

|  |            |        |
|--|------------|--------|
| ENVS 462                               | E S 462    | N/A    |
| ENVS 470                               | E S 470    | N/A    |
| ENVS 471                               | E S 471    | N/A    |
| ENVS 557                               | E S 557    | N/A    |
| ENVS 596                               | E S 596    | N/A    |
| ENVS 599                               | E S 599    | N/A    |
| ENVS 605                               | E S 605    | N/A    |
| ENVS 696                               | E S 696    | N/A    |
| ENVS 700                               | E S 700    | N/A    |
| <b>EPWS-ENTMLGY/PLNT PTHLGY/WD SCI</b> |            |        |
| EPWS 1110                              | EPWS 100   | Unique |
| EPWS 1110L                             | EPWS 100 L | Unique |
| EPWS 2996                              | EPWS 200   | Unique |
| <b>FCSC-FAMILY &amp; CONSUMER SCI</b>  |            |        |
| FCSC 2250                              | FCSE 245   | Unique |
| FCSC 2330                              | FCSE 235   | Unique |
| FCSC 345                               | FCSE 345   | N/A    |
| FCSC 348                               | FCSE 348   | N/A    |
| FCSC 445                               | FCSE 445   | N/A    |
| FCSC 446                               | FCSE 446   | N/A    |
| FCSC 447                               | FCSE 447   | N/A    |
| FCSC 448                               | FCSE 448   | N/A    |
| FCSC 492                               | FCSE 492   | N/A    |
| FCSC 545                               | FCSE 545   | N/A    |
| FCSC 546                               | FCSE 546   | N/A    |
| FCSC 547                               | FCSE 547   | N/A    |
| FCSC 548                               | FCSE 548   | N/A    |
| FCSC 590                               | FCSE 590   | N/A    |
| <b>FCST-FAMILY AND CHILD STUDIES</b>   |            |        |
| FCST 1130                              | FCS 181    | Unique |
| FCST 2110                              | FCS 210    | Unique |
| FCST 2135                              | FCS 212    | Unique |
| FCST 2140                              | FCS 213    | Unique |
| FCST 300                               | FCS 300    | N/A    |
| FCST 301                               | FCS 301    | N/A    |
| FCST 380                               | FCS 380    | N/A    |
| FCST 383                               | FCS 383    | N/A    |
| FCST 424                               | FCS 424    | N/A    |
| FCST 449V                              | FCS 449V   | N/A    |
| FCST 456                               | FCS 456    | N/A    |
| FCST 492                               | FCS 492    | N/A    |
| FCST 510                               | FCS 510    | N/A    |
| FCST 511                               | FCS 511    | N/A    |
| FCST 512                               | FCS 512    | N/A    |
| FCST 524                               | FCS 524    | N/A    |
| FCST 525                               | FCS 525    | N/A    |
| FCST 548                               | FCS 548    | N/A    |
| FCST 549                               | FCS 549    | N/A    |
| FCST 562                               | FCS 562    | N/A    |
| FCST 572                               | FCS 572    | N/A    |
| FCST 582                               | FCS 582    | N/A    |
| FCST 583                               | FCS 583    | N/A    |



|                                      |         |        |
|--------------------------------------|---------|--------|
| FCST 584                             | FCS 584 | N/A    |
| FCST 585                             | FCS 585 | N/A    |
| FCST 586                             | FCS 586 | N/A    |
| FCST 587                             | FCS 587 | N/A    |
| FCST 589                             | FCS 589 | N/A    |
| FCST 590                             | FCS 590 | N/A    |
| FCST 592                             | FCS 592 | N/A    |
| FCST 598                             | FCS 598 | N/A    |
| FCST 599                             | FCS 599 | N/A    |
| <b>FDMA-FILM &amp; DIGITAL MEDIA</b> |         |        |
| FDMA 1110                            | CMT 170 | Common |
| FDMA 1120                            | CMT 140 | Common |
| FDMA 1210                            | CMT 190 | Common |
| FDMA 1220                            | CMI 216 | Common |
| FDMA 1220                            | CMT 195 | Common |
| FDMA 1260                            | CMT 108 | Common |
| FDMA 1260                            | CMT 120 | Common |
| FDMA 1360                            | CMT 130 | Common |
| FDMA 1410                            | CMT 247 | Common |
| FDMA 1415                            | CMT 206 | Unique |
| FDMA 1510                            | CMI 260 | Common |
| FDMA 1510                            | CMT 135 | Common |
| FDMA 1515                            | CMT 145 | Common |
| FDMA 1531                            | CMT 151 | Unique |
| FDMA 1535                            | CMT 142 | Common |
| FDMA 1536                            | CMT 242 | Unique |
| FDMA 1545                            | CMT 115 | Common |
| FDMA 1555                            | CMI 100 | Unique |
| FDMA 1630                            | CMT 180 | Common |
| FDMA 1710                            | CMT 150 | Unique |
| FDMA 1715                            | CMI 245 | Unique |
| FDMA 1720                            | CMT 175 | Unique |
| FDMA 1996                            | CMT 155 | Unique |
| FDMA 2111                            | CMT 220 | Unique |
| FDMA 2120                            | CMT 126 | Common |
| FDMA 2125                            | CMT 156 | Common |
| FDMA 2150                            | CMT 240 | Common |
| FDMA 2210                            | CMT 210 | Unique |
| FDMA 2241                            | CMT 258 | Unique |
| FDMA 2285                            | CMT 215 | Common |
| FDMA 2287                            | CMT 223 | Common |
| FDMA 2310                            | CMI 228 | Unique |
| FDMA 2311                            | CMI 231 | Unique |
| FDMA 2311                            | CMT 253 | Unique |
| FDMA 2312                            | CMT 254 | Unique |
| FDMA 2325                            | CMT 245 | Common |
| FDMA 2326                            | CMT 216 | Unique |
| FDMA 2360                            | CMT 230 | Common |
| FDMA 2365                            | CMT 235 | Unique |
| FDMA 2370                            | CMT 275 | Unique |
| FDMA 2381                            | CMI 232 | Unique |
| FDMA 2382                            | CMI 235 | Unique |

|           |         |        |
|-----------|---------|--------|
| FDMA 2410 | CMT 236 | Common |
| FDMA 2510 | CMI 200 | Common |
| FDMA 2520 | CMI 205 | Common |
| FDMA 2520 | CMT 205 | Common |
| FDMA 2530 | CMI 280 | Common |
| FDMA 2530 | CMT 160 | Common |
| FDMA 2535 | CMI 240 | Unique |
| FDMA 2570 | CMT 292 | Unique |
| FDMA 2710 | CMI 250 | Unique |
| FDMA 2715 | CMT 260 | Unique |
| FDMA 2720 | CMI 290 | Unique |
| FDMA 2725 | CMI 270 | Unique |
| FDMA 2730 | CMT 227 | Unique |
| FDMA 2735 | CMT 290 | Unique |
| FDMA 2740 | CMT 291 | Unique |
| FDMA 2745 | CMI 233 | Unique |
| FDMA 2750 | CMT 229 | Unique |
| FDMA 2755 | CMI 220 | Unique |
| FDMA 2770 | CMT 200 | Unique |
| FDMA 2775 | CMT 252 | Unique |
| FDMA 2785 | CMT 228 | Unique |
| FDMA 2993 | CMT 276 | Unique |
| FDMA 2994 | CMT 295 | Unique |
| FDMA 2995 | CMT 226 | Unique |
| FDMA 2996 | CMT 255 | Unique |
| FDMA 2997 | CMT 298 | Unique |
| FDMA 2998 | CMT 221 | Unique |
| FDMA 300  | CMI 300 | N/A    |
| FDMA 301  | CMI 301 | N/A    |
| FDMA 303  | CMI 303 | N/A    |
| FDMA 305  | CMI 305 | N/A    |
| FDMA 308  | CMI 308 | N/A    |
| FDMA 309  | CMI 309 | N/A    |
| FDMA 310  | CMI 310 | N/A    |
| FDMA 311  | CMI 311 | N/A    |
| FDMA 312  | CMI 312 | N/A    |
| FDMA 314  | CMI 314 | N/A    |
| FDMA 315  | CMI 315 | N/A    |
| FDMA 316  | CMI 316 | N/A    |
| FDMA 318  | CMI 318 | N/A    |
| FDMA 320  | CMI 320 | N/A    |
| FDMA 325  | CMI 325 | N/A    |
| FDMA 328  | CMI 328 | N/A    |
| FDMA 332  | CMI 332 | N/A    |
| FDMA 341  | CMI 341 | N/A    |
| FDMA 348  | CMI 348 | N/A    |
| FDMA 350  | CMI 350 | N/A    |
| FDMA 360  | CMI 360 | N/A    |
| FDMA 362  | CMI 362 | N/A    |
| FDMA 365  | CMI 365 | N/A    |
| FDMA 377  | CMI 377 | N/A    |
| FDMA 395  | CMI 395 | N/A    |

|   |           |        |
|---|-----------|--------|
| FDMA 396                                  | CMI 396   | N/A    |
| FDMA 397                                  | CMI 397   | N/A    |
| FDMA 398                                  | CMI 398   | N/A    |
| FDMA 400                                  | CMI 400   | N/A    |
| FDMA 401                                  | CMI 401   | N/A    |
| FDMA 410                                  | CMI 410   | N/A    |
| FDMA 412                                  | CMI 412   | N/A    |
| FDMA 420                                  | CMI 420   | N/A    |
| FDMA 425                                  | CMI 425   | N/A    |
| FDMA 433                                  | CMI 433   | N/A    |
| FDMA 450                                  | CMI 450   | N/A    |
| FDMA 470                                  | CMI 470   | N/A    |
| FDMA 477                                  | CMI 477   | N/A    |
| FDMA 480                                  | CMI 480   | N/A    |
| FDMA 490                                  | CMI 490   | N/A    |
| FDMA 491                                  | CMI 491   | N/A    |
| FDMA 492                                  | CMI 492   | N/A    |
| FDMA 493                                  | CMI 493   | N/A    |
| FDMA 494                                  | CMI 494   | N/A    |
| FDMA 495                                  | CMI 495   | N/A    |
| FDMA 497                                  | CMI 497   | N/A    |
| <b>FREN-FRENCH</b>                        |           |        |
| FREN 1110                                 | FREN 111  | Common |
| FREN 1120                                 | FREN 112  | Common |
| FREN 2110                                 | FREN 211  | Common |
| FREN 2120                                 | FREN 212  | Common |
| <b>FSTE-FOOD SCIENCE &amp; TECHNOLOGY</b> |           |        |
| FSTE 1120                                 | FSTE 175  | Unique |
| FSTE 2110G                                | FSTE 263G | Unique |
| FSTE 2120                                 | FSTE 275  | Unique |
| FSTE 2130G                                | FSTE 210G | Unique |
| FSTE 2996                                 | FSTE 200  | Unique |
| <b>FWCE-FISH,WILDLF,CONSERV ECOL</b>      |           |        |
| FWCE 1110G                                | FWCE 110G | Unique |
| FWCE 1120                                 | FWCE 109  | Unique |
| FWCE 2110                                 | FWCE 255  | Unique |
| <b>FYEX-FIRST YEAR EXPERIENCE</b>         |           |        |
| FYEX 1110                                 | COLL 101  | Common |
| FYEX 1112                                 | UNIV 150  | Unique |
| FYEX 1116                                 | COLL 103  | Unique |
| FYEX 1117                                 | UNIV 114  | Unique |
| FYEX 1131                                 | UNIV 110  | Unique |
| FYEX 1132                                 | UNIV 112  | Unique |
| FYEX 1133                                 | COLL 108  | Unique |
| FYEX 1134                                 | UNIV 113  | Unique |
| FYEX 1140                                 | COLL 120  | Unique |
| FYEX 1160                                 | UNIV 101  | Unique |
| FYEX 1170                                 | UNIV 161  | Unique |
| FYEX 1995                                 | UNIV 116  | Unique |
| FYEX 1996                                 | COLL 155  | Unique |
| FYEX 2111                                 | COLL 201  | Unique |
| FYEX 2994                                 | COLL 185  | Unique |

**GENE-GENETICS**

|           |          |        |
|-----------|----------|--------|
| GENE 1110 | GENE 110 | Unique |
|-----------|----------|--------|

**GEOG-GEOGRAPHY**

|            |           |        |
|------------|-----------|--------|
| GEOG 1110G | GEOG 111G | Common |
| GEOG 1120G | GEOG 112G | Common |
| GEOG 1130G | GEOG 120G | Common |
| GEOG 2130  | GEOG 281  | Unique |
| GEOG 2996  | GEOG 291  | Unique |

**GEOL-GEOLOGY**

|            |           |        |
|------------|-----------|--------|
| GEOL 1110G | GEOL 111G | Common |
| GEOL 2130  | GEOG 257  | Common |
| GEOL 2996  | GEOL 220  | Unique |

**GNDR-WOMEN'S STUDIES**

|            |          |        |
|------------|----------|--------|
| GNDR 2110G | W S 201G | Common |
| GNDR 2120G | HON 218  | Unique |
| GNDR 2120G | W S 202G | Unique |
| GNDR 350   | W S 350  | N/A    |
| GNDR 359   | W S 359  | N/A    |
| GNDR 360   | W S 360  | N/A    |
| GNDR 380V  | W S 380V | N/A    |
| GNDR 381V  | W S 381V | N/A    |
| GNDR 401   | W S 401  | N/A    |
| GNDR 402   | W S 402  | N/A    |
| GNDR 403   | W S 403  | N/A    |
| GNDR 405   | W S 405  | N/A    |
| GNDR 406   | W S 406  | N/A    |
| GNDR 407   | W S 407  | N/A    |
| GNDR 408   | W S 408  | N/A    |
| GNDR 411   | W S 411  | N/A    |
| GNDR 412   | W S 412  | N/A    |
| GNDR 433V  | W S 433V | N/A    |
| GNDR 450   | W S 450  | N/A    |
| GNDR 451   | W S 451  | N/A    |
| GNDR 453   | W S 453  | N/A    |
| GNDR 454   | W S 454  | N/A    |
| GNDR 455   | W S 455  | N/A    |
| GNDR 461   | W S 461  | N/A    |
| GNDR 465   | W S 465  | N/A    |
| GNDR 471   | W S 471  | N/A    |
| GNDR 474   | W S 474  | N/A    |
| GNDR 482   | W S 482  | N/A    |
| GNDR 484   | W S 484  | N/A    |
| GNDR 501   | W S 501  | N/A    |
| GNDR 502   | W S 502  | N/A    |
| GNDR 505   | W S 505  | N/A    |
| GNDR 507   | W S 507  | N/A    |
| GNDR 508   | W S 508  | N/A    |
| GNDR 511   | W S 511  | N/A    |
| GNDR 512   | W S 512  | N/A    |
| GNDR 533   | W S 533  | N/A    |
| GNDR 550   | W S 550  | N/A    |
| GNDR 554   | W S 554  | N/A    |

|                            |           |        |
|----------------------------|-----------|--------|
| GNDR 555                   | W S 555   | N/A    |
| GNDR 561                   | W S 561   | N/A    |
| GNDR 565                   | W S 565   | N/A    |
| GNDR 571                   | W S 571   | N/A    |
| GNDR 582                   | W S 582   | N/A    |
| GNDR 584                   | W S 584   | N/A    |
| <b>GRMN-GERMAN</b>         |           |        |
| GRMN 1110                  | GER 111   | Common |
| GRMN 1120                  | GER 112   | Common |
| GRMN 2110                  | GER 211   | Common |
| GRMN 2120                  | GER 212   | Common |
| GRMN 305                   | GER 305   | N/A    |
| GRMN 313                   | GER 313   | N/A    |
| GRMN 325                   | GER 325   | N/A    |
| GRMN 330                   | GER 330   | N/A    |
| GRMN 333V                  | GER 333V  | N/A    |
| GRMN 340                   | GER 340   | N/A    |
| GRMN 341                   | GER 341   | N/A    |
| GRMN 343                   | GER 343   | N/A    |
| GRMN 350                   | GER 350   | N/A    |
| GRMN 399                   | GER 399   | N/A    |
| GRMN 410                   | GER 410   | N/A    |
| GRMN 413                   | GER 413   | N/A    |
| GRMN 425                   | GER 425   | N/A    |
| GRMN 451                   | GER 451   | N/A    |
| GRMN 453                   | GER 453   | N/A    |
| GRMN 471                   | GER 471   | N/A    |
| <b>HIST-HISTORY</b>        |           |        |
| HIST 1105G                 | HIST 110G | Unique |
| HIST 1110G                 | HIST 201G | Common |
| HIST 1120G                 | HIST 202G | Common |
| HIST 1130G                 | HIST 111G | Common |
| HIST 1140G                 | HIST 112G | Common |
| HIST 1150G                 | HIST 101G | Common |
| HIST 1160G                 | HIST 102G | Common |
| HIST 2110                  | HIST 261  | Common |
| HIST 2245G                 | HIST 221G | Unique |
| HIST 2246G                 | HIST 222G | Unique |
| HIST 2250G                 | HIST 211G | Unique |
| HIST 2251G                 | HIST 212G | Unique |
| HIST 2996                  | HIST 269  | Unique |
| <b>HMSV-HUMAN SERVICES</b> |           |        |
| HMSV 2110                  | S WK 253  | Common |
| <b>HNRS-HONORS</b>         |           |        |
| HNRS 1110                  | HON 115   | Unique |
| HNRS 2110G                 | HON 210   | Unique |
| HNRS 2111                  | HON 214   | Unique |
| HNRS 2114G                 | HON 208G  | Unique |
| HNRS 2115G                 | HON 216G  | Unique |
| HNRS 2116G                 | HON 219G  | Unique |
| HNRS 2117G                 | HON 220G  | Unique |
| HNRS 2120G                 | HON 222G  | Unique |

|            |          |        |
|------------|----------|--------|
| HNRS 2140G | HON 227G | Unique |
| HNRS 2141G | HON 230G | Unique |
| HNRS 2150G | HON 228G | Unique |
| HNRS 2160G | HON 229G | Unique |
| HNRS 2161G | HON 235G | Unique |
| HNRS 2170G | HON 232G | Unique |
| HNRS 2171G | HON 234G | Unique |
| HNRS 2172G | HON 237G | Unique |
| HNRS 2173G | HON 239G | Unique |
| HNRS 2174G | HON 249G | Unique |
| HNRS 2175G | HON 265G | Unique |
| HNRS 2178G | HON 270G | Unique |
| HNRS 2180G | HON 248G | Unique |
| HNRS 2185G | HON 211  | Unique |
| HNRS 2190G | HON 242G | Unique |
| HNRS 2996  | HON 221  | Unique |
| HNRS 304V  | HON 304V | N/A    |
| HNRS 306V  | HON 306V | N/A    |
| HNRS 313   | HON 313  | N/A    |
| HNRS 314   | HON 314  | N/A    |
| HNRS 317V  | HON 317V | N/A    |
| HNRS 318V  | HON 318V | N/A    |
| HNRS 321V  | HON 321V | N/A    |
| HNRS 324V  | HON 324V | N/A    |
| HNRS 326V  | HON 326V | N/A    |
| HNRS 328V  | HON 328V | N/A    |
| HNRS 335V  | HON 335V | N/A    |
| HNRS 340V  | HON 340V | N/A    |
| HNRS 341V  | HON 341V | N/A    |
| HNRS 347V  | HON 347V | N/A    |
| HNRS 348V  | HON 348V | N/A    |
| HNRS 349V  | HON 349V | N/A    |
| HNRS 353V  | HON 353V | N/A    |
| HNRS 362V  | HON 362V | N/A    |
| HNRS 370V  | HON 370V | N/A    |
| HNRS 371V  | HON 371V | N/A    |
| HNRS 374V  | HON 374V | N/A    |
| HNRS 378V  | HON 378V | N/A    |
| HNRS 379V  | HON 379V | N/A    |
| HNRS 381V  | HON 381V | N/A    |
| HNRS 384V  | HON 384V | N/A    |
| HNRS 387V  | HON 387V | N/A    |
| HNRS 388V  | HON 388V | N/A    |
| HNRS 390V  | HON 390V | N/A    |
| HNRS 394V  | HON 394V | N/A    |
| HNRS 400   | HON 400  | N/A    |
| HNRS 410   | HON 410  | N/A    |
| HNRS 411V  | HON 411V | N/A    |
| HNRS 412   | HON 412  | N/A    |
| HNRS 413   | HON 413  | N/A    |
| HNRS 420   | HON 420  | N/A    |
| HNRS 421   | HON 421  | N/A    |

|                                       |           |        |
|---------------------------------------|-----------|--------|
| HNRS 422                              | HON 422   | N/A    |
| HNRS 425V                             | HON 425V  | N/A    |
| HNRS 450V                             | HON 450V  | N/A    |
| HNRS 521                              | HON 521   | N/A    |
| <b>HORT-HORTICULTURE</b>              |           |        |
| HORT 1115G                            | HORT 100G | Unique |
| HORT 2110                             | HORT 210  | Unique |
| HORT 2120                             | HORT 211  | Unique |
| HORT 2130                             | HORT 240  | Unique |
| HORT 2160                             | HORT 250  | Unique |
| HORT 2990                             | HORT 241  | Unique |
| HORT 2996                             | HORT 200  | Unique |
| <b>HRTM-HOTEL/RESTRNT/TOURISM MGT</b> |           |        |
| HRTM 1120G                            | HRTM 201  | Unique |
| HRTM 1130                             | HRTM 221  | Unique |
| HRTM 1310                             | HRTM 2110 | Unique |
| HRTM 1320                             | HRTM 2120 | Unique |
| HRTM 2130                             | HRTM 235  | Unique |
| HRTM 2996                             | HRTM 200  | Unique |
| HRTM 3210                             | HRTM 301  | N/A    |
| HRTM 3410                             | HRTM 302  | N/A    |
| HRTM 3220                             | HRTM 304  | N/A    |
| HRTM 3910                             | HRTM 307  | N/A    |
| HRTM 3230                             | HRTM 311  | N/A    |
| HRTM 3310                             | HRTM 363  | N/A    |
| HRTM 4998                             | HRTM 408  | N/A    |
| HRTM 4910                             | HRTM 409  | N/A    |
| HRTM 4410                             | HRTM 410  | N/A    |
| HRTM 4310                             | HRTM 412  | N/A    |
| HRTM 4320                             | HRTM 413  | N/A    |
| HRTM 4330                             | HRTM 414  | N/A    |
| HRTM 4230                             | HRTM 416  | N/A    |
| HRTM 4235                             | HRTM 420  | N/A    |
| HRTM 4135                             | HRTM 430  | N/A    |
| HRTM 4130                             | HRTM 431  | N/A    |
| HRTM 4140                             | HRTM 432  | N/A    |
| HRTM 4999                             | HRTM 434  | N/A    |
| HRTM 4145                             | HRTM 435  | N/A    |
| HRTM 4240V                            | HRTM 436V | N/A    |
| HRTM 4110                             | HRTM 443  | N/A    |
| HRTM 4115                             | HRTM 444  | N/A    |
| HRTM 4120                             | HRTM 445  | N/A    |
| HRTM 4996                             | HRTM 450  | N/A    |
| HRTM 4991                             | HRTM 492  | N/A    |
| HRTM 5210                             | HRTM 501  | N/A    |
| HRTM 5120                             | HRTM 502  | N/A    |
| HRTM 5420                             | HRTM 505  | N/A    |
| HRTM 5220                             | HRTM 506  | N/A    |
| HRTM 5998                             | HRTM 507  | N/A    |
| HRTM 5410                             | HRTM 510  | N/A    |
| HRTM 5310                             | HRTM 512  | N/A    |
| HRTM 5992                             | HRTM 515  | N/A    |

|   |           |        |
|---|-----------|--------|
| HRTM 5230   | HRTM 516  | N/A    |
| HRTM 5130   | HRTM 531  | N/A    |
| HRTM 5140   | HRTM 532  | N/A    |
| HRTM 5145   | HRTM 535  | N/A    |
| HRTM 5240   | HRTM 536  | N/A    |
| HRTM 5510   | HRTM 550  | N/A    |
| HRTM 5996   | HRTM 590  | N/A    |
| HRTM 5991   | HRTM 598  | N/A    |
| HRTM 5999   | HRTM 599  | N/A    |
| <b>HVAC-HEATING, VENTILATION AND AIR CONDITIONING</b> |           |        |
| HVAC 1111   | HVAC 100  | Common |
| HVAC 1105   | HVAC 101  | Common |
| HVAC 1110   | HVAC 102  | Common |
| HVAC 1125   | HVAC 103  | Common |
| HVAC 1233   | HVAC 110  | Common |
| HVAC 2098   | HVAC 113  | Unique |
| HVAC 1410   | HVAC 205  | Common |
| HVAC 1243   | HVAC 207  | Common |
| HVAC 1245   | HVAC 209  | Common |
| HVAC 2210   | HVAC 210  | Unique |
| HVAC 1250   | HVAC 211  | Common |
| HVAC 2990   | HVAC 213  | Common |
| HVAC 1238   | HVAC 220  | Common |
| HVAC 1338   | HVAC 225  | Common |
| HVAC 1996   | HVAC 255  | Common |
| HVAC 2996   | HVAC 290  | Common |
| <b>JAPN-JAPANESE</b>                                  |           |        |
| JAPN 1110   | JPNS 111  | Common |
| JAPN 1120   | JPNS 112  | Common |
| JAPN 2110   | JPNS 211  | Common |
| JAPN 2120   | JPNS 212  | Common |
| JAPN 320  | JPNS 320  | N/A    |
| JAPN 453  | JPNS 453  | N/A    |
| <b>LIBR-LIBRARY SCIENCE</b>                           |           |        |
| LIBR 1110   | LIB 101   | Unique |
| LIBR 1111   | LIB 111   | Unique |
| LIBR 311V   | LIB 311V  | N/A    |
| <b>LING-LINGUISTICS</b>                               |           |        |
| LING 2110G  | LING 200G | Common |
| <b>MATH-MATHEMATICS</b>                               |           |        |
| MATH 1130G  | MATH 210G | Common |
| MATH 1134   | MATH 111  | Unique |
| MATH 1215   | MATH 120  | Common |
| MATH 1217   | MATH 101  | Unique |
| MATH 1220G  | MATH 121G | Common |
| MATH 1221   | MATH 102  | Unique |
| MATH 1250G  | MATH 190G | Common |
| MATH 1350G  | A ST 251G | Common |
| MATH 1350G  | STAT 251G | Common |
| MATH 1430G  | MATH 142G | Common |
| MATH 1435   | MATH 235  | Common |
| MATH 1440   | MATH 236  | Common |



|                        |            |        |
|------------------------|------------|--------|
| MATH 1511G             | MATH 191G  | Unique |
| MATH 1521G             | MATH 192G  | Unique |
| MATH 1521H             | MATH 192GH | Unique |
| MATH 1531              | MATH 279   | Unique |
| MATH 1996              | MATH 107   | Unique |
| MATH 2134G             | MATH 112G  | Unique |
| MATH 2234              | MATH 215   | Unique |
| MATH 2350G             | STAT 271G  | Common |
| MATH 2415              | MATH 280   | Unique |
| MATH 2530G             | MATH 291G  | Common |
| MATH 2992              | MATH 200   | Unique |
| <b>MGMT-MANAGEMENT</b> |            |        |
| MGMT 2110              | MGT 201    | Common |
| MGMT 309               | MGT 309    | N/A    |
| MGMT 310V              | MGT 310V   | N/A    |
| MGMT 315V              | MGT 315V   | N/A    |
| MGMT 332               | MGT 332    | N/A    |
| MGMT 333               | MGT 333    | N/A    |
| MGMT 335V              | MGT 335V   | N/A    |
| MGMT 344               | MGT 344    | N/A    |
| MGMT 347               | MGT 347    | N/A    |
| MGMT 351               | MGT 351    | N/A    |
| MGMT 361               | MGT 361    | N/A    |
| MGMT 375V              | MGT 375V   | N/A    |
| MGMT 388V              | MGT 388V   | N/A    |
| MGMT 391               | MGT 391    | N/A    |
| MGMT 448               | MGT 448    | N/A    |
| MGMT 449               | MGT 449    | N/A    |
| MGMT 451               | MGT 451    | N/A    |
| MGMT 453               | MGT 453    | N/A    |
| MGMT 454               | MGT 454    | N/A    |
| MGMT 458               | MGT 458    | N/A    |
| MGMT 460               | MGT 460    | N/A    |
| MGMT 461               | MGT 461    | N/A    |
| MGMT 465               | MGT 465    | N/A    |
| MGMT 470               | MGT 470    | N/A    |
| MGMT 490               | MGT 490    | N/A    |
| MGMT 491               | MGT 491    | N/A    |
| MGMT 498               | MGT 498    | N/A    |
| MGMT 502               | MGT 502    | N/A    |
| MGMT 503               | MGT 503    | N/A    |
| MGMT 512               | MGT 512    | N/A    |
| MGMT 527               | MGT 527    | N/A    |
| MGMT 548               | MGT 548    | N/A    |
| MGMT 590               | MGT 590    | N/A    |
| MGMT 591               | MGT 591    | N/A    |
| MGMT 598               | MGT 598    | N/A    |
| MGMT 600               | MGT 600    | N/A    |
| MGMT 601               | MGT 601    | N/A    |
| MGMT 640               | MGT 640    | N/A    |
| MGMT 645               | MGT 645    | N/A    |
| MGMT 650               | MGT 650    | N/A    |

|                       |          |        |
|-----------------------|----------|--------|
| MGMT 655              | MGT 655  | N/A    |
| MGMT 660              | MGT 660  | N/A    |
| MGMT 661              | MGT 661  | N/A    |
| MGMT 670              | MGT 670  | N/A    |
| MGMT 675              | MGT 675  | N/A    |
| MGMT 685              | MGT 685  | N/A    |
| MGMT 690              | MGT 690  | N/A    |
| MGMT 698              | MGT 698  | N/A    |
| MGMT 700              | MGT 700  | N/A    |
| <b>MKTG-MARKETING</b> |          |        |
| MKTG 2110             | BMGT 210 | Common |
| MKTG 2110             | MKTG 203 | Common |
| <b>MUSC-MUSIC</b>     |          |        |
| MUSC 351              | MUS 351  | N/A    |
| MUSC 1110G            | MUS 201G | Common |
| MUSC 1130G            | MUS 101G | Common |
| MUSC 1210             | MUS 102  | Common |
| MUSC 1310             | MUS 121  | Common |
| MUSC 1410             | MUS 250  | Common |
| MUSC 1440             | MUS 141  | Unique |
| MUSC 1450             | MUS 103  | Unique |
| MUSC 1451             | MUS 104  | Unique |
| MUSC 1460             | MUS 105  | Unique |
| MUSC 1461             | MUS 106  | Unique |
| MUSC 1470             | MUS 145  | Unique |
| MUSC 1471             | MUS 146  | Unique |
| MUSC 1472             | MUS 147  | Unique |
| MUSC 1992             | MUS 130  | Common |
| MUSC 2110             | MUS 164  | Common |
| MUSC 2110             | MUS 171  | Common |
| MUSC 2120             | MUS 151  | Common |
| MUSC 2120             | MUS 160  | Common |
| MUSC 2120             | MUS 161  | Common |
| MUSC 2120             | MUS 162  | Common |
| MUSC 2120             | MUS 170  | Common |
| MUSC 2120             | MUS 172  | Common |
| MUSC 2120             | MUS 180  | Common |
| MUSC 2120             | MUS 181  | Common |
| MUSC 2130             | MUS 163  | Common |
| MUSC 2132             | MUS 174  | Unique |
| MUSC 2151             | MUS 202  | Unique |
| MUSC 2210             | MUS 262  | Common |
| MUSC 2220             | MUS 263  | Common |
| MUSC 2240             | MUS 207  | Unique |
| MUSC 2310             | MUS 273  | Common |
| MUSC 2451             | MUS 203  | Unique |
| MUSC 2452             | MUS 204  | Unique |
| MUSC 2460             | MUS 205  | Unique |
| MUSC 2461             | MUS 206  | Unique |
| MUSC 2470             | MUS 261  | Unique |
| MUSC 2510             | MUS 230  | Unique |
| MUSC 2993             | MUS 251  | Unique |

|           |         |        |
|-----------|---------|--------|
| MUSC 2996 | MUS 260 | Unique |
| MUSC 301  | MUS 301 | N/A    |
| MUSC 302  | MUS 302 | N/A    |
| MUSC 303  | MUS 303 | N/A    |
| MUSC 315  | MUS 315 | N/A    |
| MUSC 316  | MUS 316 | N/A    |
| MUSC 317  | MUS 317 | N/A    |
| MUSC 318  | MUS 318 | N/A    |
| MUSC 319  | MUS 319 | N/A    |
| MUSC 320  | MUS 320 | N/A    |
| MUSC 321  | MUS 321 | N/A    |
| MUSC 322  | MUS 322 | N/A    |
| MUSC 323  | MUS 323 | N/A    |
| MUSC 324  | MUS 324 | N/A    |
| MUSC 325  | MUS 325 | N/A    |
| MUSC 326  | MUS 326 | N/A    |
| MUSC 327  | MUS 327 | N/A    |
| MUSC 330  | MUS 330 | N/A    |
| MUSC 339  | MUS 339 | N/A    |
| MUSC 340  | MUS 340 | N/A    |
| MUSC 341  | MUS 341 | N/A    |
| MUSC 346  | MUS 346 | N/A    |
| MUSC 349  | MUS 349 | N/A    |
| MUSC 350  | MUS 350 | N/A    |
| MUSC 360  | MUS 360 | N/A    |
| MUSC 361  | MUS 361 | N/A    |
| MUSC 362  | MUS 362 | N/A    |
| MUSC 363  | MUS 363 | N/A    |
| MUSC 365  | MUS 365 | N/A    |
| MUSC 368  | MUS 368 | N/A    |
| MUSC 370  | MUS 370 | N/A    |
| MUSC 372  | MUS 372 | N/A    |
| MUSC 374  | MUS 374 | N/A    |
| MUSC 380  | MUS 380 | N/A    |
| MUSC 381  | MUS 381 | N/A    |
| MUSC 386  | MUS 386 | N/A    |
| MUSC 390  | MUS 390 | N/A    |
| MUSC 391  | MUS 391 | N/A    |
| MUSC 392  | MUS 392 | N/A    |
| MUSC 413  | MUS 413 | N/A    |
| MUSC 415  | MUS 415 | N/A    |
| MUSC 417  | MUS 417 | N/A    |
| MUSC 421  | MUS 421 | N/A    |
| MUSC 422  | MUS 422 | N/A    |
| MUSC 424  | MUS 424 | N/A    |
| MUSC 429  | MUS 429 | N/A    |
| MUSC 430  | MUS 430 | N/A    |
| MUSC 440  | MUS 440 | N/A    |
| MUSC 441  | MUS 441 | N/A    |
| MUSC 450  | MUS 450 | N/A    |
| MUSC 455  | MUS 455 | N/A    |
| MUSC 470  | MUS 470 | N/A    |

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|--|-----------|--------|
| MUSC 471                                 | MUS 471   | N/A    |
| MUSC 475                                 | MUS 475   | N/A    |
| MUSC 477                                 | MUS 477   | N/A    |
| MUSC 486                                 | MUS 486   | N/A    |
| MUSC 498                                 | MUS 498   | N/A    |
| MUSC 511                                 | MUS 511   | N/A    |
| MUSC 513                                 | MUS 513   | N/A    |
| MUSC 518                                 | MUS 518   | N/A    |
| MUSC 519                                 | MUS 519   | N/A    |
| MUSC 521                                 | MUS 521   | N/A    |
| MUSC 522                                 | MUS 522   | N/A    |
| MUSC 523                                 | MUS 523   | N/A    |
| MUSC 527                                 | MUS 527   | N/A    |
| MUSC 529                                 | MUS 529   | N/A    |
| MUSC 530                                 | MUS 530   | N/A    |
| MUSC 531                                 | MUS 531   | N/A    |
| MUSC 535                                 | MUS 535   | N/A    |
| MUSC 540                                 | MUS 540   | N/A    |
| MUSC 574                                 | MUS 574   | N/A    |
| MUSC 575                                 | MUS 575   | N/A    |
| MUSC 576                                 | MUS 576   | N/A    |
| MUSC 577                                 | MUS 577   | N/A    |
| MUSC 578                                 | MUS 578   | N/A    |
| MUSC 579                                 | MUS 579   | N/A    |
| MUSC 580                                 | MUS 580   | N/A    |
| MUSC 582                                 | MUS 582   | N/A    |
| MUSC 586                                 | MUS 586   | N/A    |
| MUSC 598                                 | MUS 598   | N/A    |
| MUSC 599                                 | MUS 599   | N/A    |
| <b>NATV-NATV-NATIVE AMERICAN STUDIES</b> |           |        |
| NATV 3110V                               | ANTH 305V | N/A    |
| NATV 3120                                | ANTH 454  | N/A    |
| NATV 4110                                | ANTH 453  | N/A    |
| NATV 4120V                               | ANTH 444  | N/A    |
| NATV 4130                                | ANTH 443  | N/A    |
| NATV 4210                                | ANTH 407  | N/A    |
| NATV 4220                                | ANTH 455  | N/A    |
| NATV 4310                                | ANTH 441  | N/A    |
| NATV 5120                                | ANTH 551  | N/A    |
| NATV 5210                                | ANTH 528  | N/A    |
| <b>NMNEC-NURSING EDUC CONSORTIUM</b>     |           |        |
| NMNC 3110                                | NURS 293  | Common |
| NMNC 3120                                | NURS 362  | Common |
| NMNC 3135                                | NURS 294  | Common |
| NMNC 3210                                | NURS 377  | Common |
| NMNC 3220                                | NURS 378  | Common |
| NMNC 3230                                | NURS 379  | Common |
| NMNC 3235                                | NURS 380  | Common |
| NMNC 4310                                | NURS 395  | Common |
| NMNC 4320                                | NURS 396  | Common |
| NMNC 4335                                | NURS 398  | Common |
| NMNC 4410                                | NURS 466  | Common |

|                     |          |        |
|---------------------|----------|--------|
| NMNC 4435           | NURS 467 | Common |
| NMNC 4445           | NURS 468 | Common |
| NMNC 4510           | NURS 486 | Common |
| NMNC 4520           | NURS 487 | Common |
| NMNC 4535           | NURS 488 | Common |
| NMNC 4545           | NURS 489 | Common |
| <b>NURS-NURSING</b> |          |        |
| NURS 1110           | NURS 110 | Unique |
| NURS 3110           | NURS 328 | N/A    |
| NURS 3996           | NURS 397 | N/A    |
| NURS 4110           | NURS 460 | N/A    |
| NURS 4997           | NURS 490 | N/A    |
| NURS 5110           | NURS 507 | N/A    |
| NURS 5115           | NURS 509 | N/A    |
| NURS 5120           | NURS 567 | N/A    |
| NURS 5125           | NURS 506 | N/A    |
| NURS 5130           | NURS 530 | N/A    |
| NURS 5210           | NURS 565 | N/A    |
| NURS 5220           | NURS 549 | N/A    |
| NURS 5230           | NURS 566 | N/A    |
| NURS 5240           | NURS 595 | N/A    |
| NURS 5996           | NURS 597 | N/A    |
| NURS 5997           | NURS 590 | N/A    |
| NURS 6110           | NURS 603 | N/A    |
| NURS 6120           | NURS 651 | N/A    |
| NURS 6125           | NURS 653 | N/A    |
| NURS 6130           | NURS 685 | N/A    |
| NURS 6135           | NURS 648 | N/A    |
| NURS 6210           | NURS 697 | N/A    |
| NURS 6220           | NURS 511 | N/A    |
| NURS 6230           | NURS 512 | N/A    |
| NURS 6250           | NURS 612 | N/A    |
| NURS 6255           | NURS 649 | N/A    |
| NURS 6260           | NURS 657 | N/A    |
| NURS 6265           | NURS 642 | N/A    |
| NURS 6270           | NURS 622 | N/A    |
| NURS 6305           | NURS 679 | N/A    |
| NURS 6307           | NURS 689 | N/A    |
| NURS 6310           | NURS 686 | N/A    |
| NURS 6320           | NURS 687 | N/A    |
| NURS 6330           | NURS 688 | N/A    |
| NURS 6340           | NURS 699 | N/A    |
| NURS 6350           | NURS 678 | N/A    |
| NURS 6405           | NURS 514 | N/A    |
| NURS 6410           | NURS 660 | N/A    |
| NURS 6420           | NURS 662 | N/A    |
| NURS 6430           | NURS 664 | N/A    |
| NURS 6450           | NURS 665 | N/A    |
| NURS 6505           | NURS 676 | N/A    |
| NURS 6510           | NURS 671 | N/A    |
| NURS 6520           | NURS 672 | N/A    |
| NURS 6530           | NURS 673 | N/A    |

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|--|------------|--------|
| NURS 6990                              | NURS 698   | N/A    |
| NURS 6993                              | NURS 690   | N/A    |
| NURS 6997                              | NURS 691   | N/A    |
| NURS 7000                              | NURS 700   | N/A    |
| <b>NUTR-NUTRITION</b>                  |            |        |
| NUTR 2110                              | HNDS 251   | Common |
| NUTR 2120                              | HNDS 201   | Unique |
| NUTR 3110                              | HNDS 350   | N/A    |
| NUTR 3120                              | HNDS 360   | N/A    |
| NUTR 3750                              | HNDS 440   | N/A    |
| NUTR 3996                              | HNDS 450   | N/A    |
| NUTR 4110                              | HNDS 448   | N/A    |
| NUTR 4210                              | HNDS 403   | N/A    |
| NUTR 4220                              | HNDS 430   | N/A    |
| NUTR 4230                              | HNDS 446   | N/A    |
| NUTR 4230L                             | HNDS 446 L | N/A    |
| NUTR 4233                              | HNDS 420   | N/A    |
| NUTR 4235                              | HNDS 405   | N/A    |
| NUTR 4240                              | HNDS 449   | N/A    |
| NUTR 4240L                             | HNDS 449 L | N/A    |
| NUTR 4550                              | HNDS 455   | N/A    |
| NUTR 4560                              | HNDS 401   | N/A    |
| NUTR 4565                              | HNDS 407   | N/A    |
| NUTR 4991                              | HNDS 492   | N/A    |
| NUTR 5110                              | HNDS 548   | N/A    |
| NUTR 5150                              | HNDS 500   | N/A    |
| NUTR 5210                              | HNDS 551   | N/A    |
| NUTR 5220                              | HNDS 530   | N/A    |
| NUTR 5230                              | HNDS 546   | N/A    |
| NUTR 5233                              | HNDS 520   | N/A    |
| NUTR 5240                              | HNDS 549   | N/A    |
| NUTR 5610                              | HNDS 560   | N/A    |
| NUTR 5620                              | HNDS 562   | N/A    |
| NUTR 5630                              | HNDS 563   | N/A    |
| NUTR 5640                              | HNDS 564   | N/A    |
| NUTR 5650                              | HNDS 565   | N/A    |
| NUTR 5660                              | HNDS 566   | N/A    |
| NUTR 5670                              | HNDS 567   | N/A    |
| NUTR 5680                              | HNDS 568   | N/A    |
| NUTR 5991                              | HNDS 598   | N/A    |
| NUTR 5996                              | HNDS 590   | N/A    |
| <b>OATS- OFFICE ADMIN TECH SYSTEMS</b> |            |        |
| OATS 101                               | BOT 101    | N/A    |
| OATS 102                               | BOT 102    | N/A    |
| OATS 105                               | BOT 105    | N/A    |
| OATS 106                               | BOT 106    | N/A    |
| OATS 110                               | BOT 110    | N/A    |
| OATS 120                               | BOT 120    | N/A    |
| OATS 121                               | BOT 121    | N/A    |
| OATS 140                               | BOT 140    | N/A    |
| OATS 150                               | BOT 150    | N/A    |
| OATS 169                               | BOT 169    | N/A    |

|                                |         |        |
|--------------------------------|---------|--------|
| OATS 170                       | BOT 170 | N/A    |
| OATS 171                       | BOT 171 | N/A    |
| OATS 191                       | BOT 191 | N/A    |
| OATS 202                       | BOT 202 | N/A    |
| OATS 203                       | BOT 203 | N/A    |
| OATS 205                       | BOT 205 | N/A    |
| OATS 206                       | BOT 206 | N/A    |
| OATS 207                       | BOT 207 | N/A    |
| OATS 208                       | BOT 208 | N/A    |
| OATS 209                       | BOT 209 | N/A    |
| OATS 211                       | BOT 211 | N/A    |
| OATS 213                       | BOT 213 | N/A    |
| OATS 214                       | BOT 214 | N/A    |
| OATS 215                       | BOT 215 | N/A    |
| OATS 217                       | BOT 217 | N/A    |
| OATS 218                       | BOT 218 | N/A    |
| OATS 220                       | BOT 220 | N/A    |
| OATS 221                       | BOT 221 | N/A    |
| OATS 222                       | BOT 222 | N/A    |
| OATS 223                       | BOT 223 | N/A    |
| OATS 228                       | BOT 228 | N/A    |
| OATS 233                       | BOT 233 | N/A    |
| OATS 239                       | BOT 239 | N/A    |
| OATS 240                       | BOT 240 | N/A    |
| OATS 241                       | BOT 241 | N/A    |
| OATS 244                       | BOT 244 | N/A    |
| OATS 250                       | BOT 250 | N/A    |
| OATS 255                       | BOT 255 | N/A    |
| OATS 260                       | BOT 260 | N/A    |
| OATS 270                       | BOT 270 | N/A    |
| <b>PHED-PHYSICAL EDUCATION</b> |         |        |
| HLED 1154                      | P E 134 | Common |
| PHED 1110                      | P E 128 | Common |
| PHED 1230                      | P E 147 | Common |
| PHED 1230                      | P E 148 | Common |
| PHED 1230                      | P E 150 | Common |
| PHED 1290                      | P E 112 | Common |
| PHED 1290                      | P E 113 | Common |
| PHED 1290                      | P E 114 | Common |
| PHED 1290                      | P E 115 | Common |
| PHED 1290                      | P E 117 | Common |
| PHED 1290                      | P E 166 | Common |
| PHED 1310                      | P E 130 | Common |
| PHED 1320                      | P E 131 | Common |
| PHED 1410                      | P E 199 | Common |
| PHED 1430                      | P E 109 | Common |
| PHED 1510                      | P E 102 | Common |
| PHED 1510                      | P E 103 | Common |
| PHED 1510                      | P E 127 | Common |
| PHED 1620                      | P E 205 | Common |
| PHED 1630                      | P E 104 | Common |
| PHED 1670                      | P E 129 | Common |

|                                    |           |        |
|------------------------------------|-----------|--------|
| PHED 1710                          | P E 154   | Common |
| PHED 1710                          | P E 159   | Common |
| PHED 1830                          | P E 173   | Common |
| PHED 1910                          | P E 263   | Common |
| PHED 2996                          | P E 270   | Common |
| <b>PHIL-PHILOSOPHY</b>             |           |        |
| PHIL 1115G                         | PHIL 101G | Common |
| PHIL 1120G                         | PHIL 211G | Common |
| PHIL 1140G                         | PHIL 136G | Unique |
| PHIL 1145G                         | PHIL 100G | Unique |
| PHIL 1155G                         | PHIL 124G | Unique |
| PHIL 2110G                         | PHIL 223G | Common |
| PHIL 2230G                         | PHIL 201G | Common |
| <b>PHLS-PUBLIC HEALTH SCIENCES</b> |           |        |
| PHLS 1110G                         | PHLS 150G | Common |
| PHLS 2110                          | PHLS 275  | Common |
| PHLS 2120                          | PHLS 295  | Common |
| PHLS 3110V                         | PHLS 301V | N/A    |
| PHLS 3120V                         | PHLS 380V | N/A    |
| PHLS 3130V                         | PHLS 305V | N/A    |
| PHLS 3210                          | PHLS 375  | N/A    |
| PHLS 3220                          | PHLS 395  | N/A    |
| PHLS 4130                          | PHLS 452  | N/A    |
| PHLS 4210                          | PHLS 475  | N/A    |
| PHLS 4310                          | PHLS 451  | N/A    |
| PHLS 4320                          | PHLS 450  | N/A    |
| PHLS 4410                          | PHLS 457  | N/A    |
| PHLS 4420                          | PHLS 473  | N/A    |
| PHLS 4430                          | PHLS 476  | N/A    |
| PHLS 4440                          | PHLS 478  | N/A    |
| PHLS 4510                          | PHLS 497  | N/A    |
| PHLS 4515                          | PHLS 499  | N/A    |
| PHLS 4610                          | PHLS 461  | N/A    |
| PHLS 4620V                         | PHLS 464V | N/A    |
| PHLS 4630                          | PHLS 465  | N/A    |
| PHLS 4640                          | PHLS 467  | N/A    |
| PHLS 4650                          | PHLS 468  | N/A    |
| PHLS 4660                          | PHLS 469  | N/A    |
| PHLS 4710                          | GERO 415  | N/A    |
| PHLS 4720                          | GERO 450  | N/A    |
| PHLS 4730                          | GERO 493  | N/A    |
| PHLS 4740                          | GERO 451  | N/A    |
| PHLS 4810                          | PHLS 459  | N/A    |
| PHLS 4820                          | PHLS 471  | N/A    |
| PHLS 4996                          | PHLS 486  | N/A    |
| PHLS 4997                          | PHLS 490  | N/A    |
| PHLS 4998                          | PHLS 496  | N/A    |
| PHLS 5110                          | MPH 510   | N/A    |
| PHLS 5120                          | MPH 520   | N/A    |
| PHLS 5130                          | MPH 530   | N/A    |
| PHLS 5140                          | MPH 540   | N/A    |
| PHLS 5150                          | MPH 550   | N/A    |



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|---------------------|------------|--------|
| PHLS 5210           | MPH 570    | N/A    |
| PHLS 5220           | MPH 572    | N/A    |
| PHLS 5230           | MPH 573    | N/A    |
| PHLS 5240           | MPH 574    | N/A    |
| PHLS 5250           | MPH 578    | N/A    |
| PHLS 5260           | MPH 579    | N/A    |
| PHLS 5310           | MPH 541    | N/A    |
| PHLS 5320           | MPH 545    | N/A    |
| PHLS 5330           | MPH 546    | N/A    |
| PHLS 5340           | MPH 547    | N/A    |
| PHLS 5160           | PHLS 5350  | N/A    |
| PHLS 5610           | MPH 561    | N/A    |
| PHLS 5620           | MPH 564    | N/A    |
| PHLS 5630           | MPH 565    | N/A    |
| PHLS 5635           | MPH 566    | N/A    |
| PHLS 5640           | MPH 567    | N/A    |
| PHLS 5650           | MPH 568    | N/A    |
| PHLS 5660           | MPH 569    | N/A    |
| PHLS 5670           | MPH 560    | N/A    |
| PHLS 5710           | MPH 515    | N/A    |
| PHLS 5720           | MPH 557    | N/A    |
| PHLS 5730           | MPH 593    | N/A    |
| PHLS 5810           | MPH 559    | N/A    |
| PHLS 5820           | MPH 571    | N/A    |
| PHLS 5830           | MPH 581    | N/A    |
| PHLS 5996           | MPH 586    | N/A    |
| PHLS 5997           | MPH 590    | N/A    |
| PHLS 5998           | MPH 596    | N/A    |
| PHLS 5999           | MPH 599    | N/A    |
| <b>PHYS-PHYSICS</b> |            |        |
| PHYS 1111           | PHYS 150   | Unique |
| PHYS 1112           | PHYS 210   | Unique |
| PHYS 1115G          | PHYS 110G  | Common |
| PHYS 1125G          | PHYS 120G  | Common |
| PHYS 1230G          | PHYS 211G  | Common |
| PHYS 1230L          | PHYS 211GL | Common |
| PHYS 1240G          | PHYS 212G  | Common |
| PHYS 1240L          | PHYS 212GL | Common |
| PHYS 1310G          | PHYS 215G  | Common |
| PHYS 1310L          | PHYS 215GL | Common |
| PHYS 1311           | PHYS 205   | Common |
| PHYS 1320G          | PHYS 216G  | Common |
| PHYS 1320L          | PHYS 216GL | Common |
| PHYS 1321           | PHYS 206   | Common |
| PHYS 2110           | PHYS 213   | Unique |
| PHYS 2110L          | PHYS 213 L | Unique |
| PHYS 2111           | PHYS 203   | Unique |
| PHYS 2120           | PHYS 217   | Unique |
| PHYS 2120L          | PHYS 217 L | Unique |
| PHYS 2121           | PHYS 218   | Unique |
| PHYS 2140           | PHYS 214   | Unique |
| PHYS 2140L          | PHYS 214 L | Unique |

|  |            |        |
|--|------------|--------|
| PHYS 2141                                      | PHYS 204   | Unique |
| PHYS 2230G                                     | PHYS 221G  | Unique |
| PHYS 2230L                                     | PHYS 221GL | Unique |
| PHYS 2231                                      | PHYS 223   | Common |
| PHYS 2240G                                     | PHYS 222G  | Unique |
| PHYS 2240L                                     | PHYS 222GL | Unique |
| PHYS 2241                                      | PHYS 224   | Common |
| PHYS 2996                                      | PHYS 290   | Unique |
| PHYS 2997                                      | PHYS 280   | Unique |
| <b>PLEN-PLANT &amp; ENVIRONMENTAL SCIENCES</b> |            |        |
| PLEN 6110                                      | ENVS 605   | N/A    |
| PLEN 6120                                      | AGRO 620   | N/A    |
| PLEN 6120                                      | HORT 620   | N/A    |
| PLEN 6210                                      | AGRO 625   | N/A    |
| PLEN 6210                                      | HORT 625   | N/A    |
| PLEN 6210                                      | SOIL 625   | N/A    |
| PLEN 6210                                      | EPWS 625   | N/A    |
| PLEN 6320                                      | SOIL 652   | N/A    |
| PLEN 6410                                      | SOIL 655   | N/A    |
| PLEN 6415                                      | AGRO 609   | N/A    |
| PLEN 6415                                      | HORT 609   | N/A    |
| PLEN 6420                                      | AGRO 610   | N/A    |
| PLEN 6420                                      | HORT 610   | N/A    |
| PLEN 6425                                      | AGRO 670   | N/A    |
| PLEN 6425                                      | HORT 670   | N/A    |
| PLEN 6810                                      | AGRO 697   | N/A    |
| PLEN 6810                                      | HORT 697   | N/A    |
| PLEN 6810                                      | SOIL 697   | N/A    |
| PLEN 6910                                      | AGRO 694   | N/A    |
| PLEN 6910                                      | SOIL 694   | N/A    |
| PLEN 6920                                      | AGRO 696   | N/A    |
| PLEN 6920                                      | SOIL 696   | N/A    |
| PLEN 6920                                      | ENVS 696   | N/A    |
| PLEN 6991                                      | AGRO 600   | N/A    |
| PLEN 6991                                      | SOIL 600   | N/A    |
| PLEN 6996                                      | AGRO 698   | N/A    |
| PLEN 6996                                      | SOIL 698   | N/A    |
| PLEN 7000                                      | AGRO 700   | N/A    |
| PLEN 7000                                      | SOIL 700   | N/A    |
| <b>POLS-POLITICAL SCIENCE</b>                  |            |        |
| POLS 1110G                                     | GOVT 110G  | Common |
| POLS 1111                                      | GOVT 101   | Unique |
| POLS 1120G                                     | GOVT 100G  | Common |
| POLS 1130G                                     | GOVT 150G  | Common |
| POLS 2120G                                     | GOVT 160G  | Common |
| POLS 2996                                      | GOVT 201   | Unique |
| POLS 300                                       | GOVT 300   | N/A    |
| POLS 308                                       | GOVT 308   | N/A    |
| POLS 313                                       | GOVT 313   | N/A    |
| POLS 314                                       | GOVT 314   | N/A    |
| POLS 315                                       | GOVT 315   | N/A    |
| POLS 320                                       | GOVT 320   | N/A    |

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|-----------|-----------|-----|
| POLS 321  | GOVT 321  | N/A |
| POLS 324  | GOVT 324  | N/A |
| POLS 330  | GOVT 330  | N/A |
| POLS 331  | GOVT 331  | N/A |
| POLS 335  | GOVT 335  | N/A |
| POLS 343  | GOVT 343  | N/A |
| POLS 344  | GOVT 344  | N/A |
| POLS 345  | GOVT 345  | N/A |
| POLS 348  | GOVT 348  | N/A |
| POLS 350  | GOVT 350  | N/A |
| POLS 353  | GOVT 353  | N/A |
| POLS 354  | GOVT 354  | N/A |
| POLS 360  | GOVT 360  | N/A |
| POLS 361  | GOVT 361  | N/A |
| POLS 362  | GOVT 362  | N/A |
| POLS 366  | GOVT 366  | N/A |
| POLS 367  | GOVT 367  | N/A |
| POLS 370  | GOVT 370  | N/A |
| POLS 371  | GOVT 371  | N/A |
| POLS 372  | GOVT 372  | N/A |
| POLS 373  | GOVT 373  | N/A |
| POLS 378  | GOVT 378  | N/A |
| POLS 379  | GOVT 379  | N/A |
| POLS 380V | GOVT 380V | N/A |
| POLS 382  | GOVT 382  | N/A |
| POLS 383  | GOVT 383  | N/A |
| POLS 385  | GOVT 385  | N/A |
| POLS 386  | GOVT 386  | N/A |
| POLS 387  | GOVT 387  | N/A |
| POLS 390  | GOVT 390  | N/A |
| POLS 391  | GOVT 391  | N/A |
| POLS 392  | GOVT 392  | N/A |
| POLS 394  | GOVT 394  | N/A |
| POLS 395  | GOVT 395  | N/A |
| POLS 396  | GOVT 396  | N/A |
| POLS 399  | GOVT 399  | N/A |
| POLS 405  | GOVT 405  | N/A |
| POLS 406  | GOVT 406  | N/A |
| POLS 407  | GOVT 407  | N/A |
| POLS 410  | GOVT 410  | N/A |
| POLS 411  | GOVT 411  | N/A |
| POLS 412  | GOVT 412  | N/A |
| POLS 415  | GOVT 415  | N/A |
| POLS 468  | GOVT 468  | N/A |
| POLS 469  | GOVT 469  | N/A |
| POLS 493  | GOVT 493  | N/A |
| POLS 502  | GOVT 502  | N/A |
| POLS 503  | GOVT 503  | N/A |
| POLS 505  | GOVT 505  | N/A |
| POLS 510  | GOVT 510  | N/A |
| POLS 517  | GOVT 517  | N/A |
| POLS 519  | GOVT 519  | N/A |

|                        |          |        |
|------------------------|----------|--------|
| POLS 522               | GOVT 522 | N/A    |
| POLS 527               | GOVT 527 | N/A    |
| POLS 530               | GOVT 530 | N/A    |
| POLS 536               | GOVT 536 | N/A    |
| POLS 537               | GOVT 537 | N/A    |
| POLS 540               | GOVT 540 | N/A    |
| POLS 541               | GOVT 541 | N/A    |
| POLS 542               | GOVT 542 | N/A    |
| POLS 543               | GOVT 543 | N/A    |
| POLS 544               | GOVT 544 | N/A    |
| POLS 547               | GOVT 547 | N/A    |
| POLS 548               | GOVT 548 | N/A    |
| POLS 549               | GOVT 549 | N/A    |
| POLS 550               | GOVT 550 | N/A    |
| POLS 560               | GOVT 560 | N/A    |
| POLS 561               | GOVT 561 | N/A    |
| POLS 563               | GOVT 563 | N/A    |
| POLS 564               | GOVT 564 | N/A    |
| POLS 569               | GOVT 569 | N/A    |
| POLS 570               | GOVT 570 | N/A    |
| POLS 574               | GOVT 574 | N/A    |
| POLS 578               | GOVT 578 | N/A    |
| POLS 579               | GOVT 579 | N/A    |
| POLS 580               | GOVT 580 | N/A    |
| POLS 587               | GOVT 587 | N/A    |
| POLS 590               | GOVT 590 | N/A    |
| POLS 591               | GOVT 591 | N/A    |
| POLS 593               | GOVT 593 | N/A    |
| POLS 596               | GOVT 596 | N/A    |
| POLS 598               | GOVT 598 | N/A    |
| POLS 599               | GOVT 599 | N/A    |
| <b>PORT-PORTUGUESE</b> |          |        |
| PORT 1110              | PORT 213 | Common |
| PORT 1120              | PORT 214 | Common |
| <b>PSYC-PSYCHOLOGY</b> |          |        |
| PSYC 1110G             | PSY 201G | Common |
| PSYC 2221              | PSY 266  | Unique |
| PSYC 2230              | PSY 290  | Common |
| PSYC 2311              | PSY 274  | Unique |
| PSYC 301               | PSY 301  | N/A    |
| PSYC 302               | PSY 302  | N/A    |
| PSYC 310               | PSY 310  | N/A    |
| PSYC 311               | PSY 311  | N/A    |
| PSYC 315               | PSY 315  | N/A    |
| PSYC 317               | PSY 317  | N/A    |
| PSYC 320               | PSY 320  | N/A    |
| PSYC 321               | PSY 321  | N/A    |
| PSYC 324               | PSY 324  | N/A    |
| PSYC 325               | PSY 325  | N/A    |
| PSYC 330               | PSY 330  | N/A    |
| PSYC 340               | PSY 340  | N/A    |
| PSYC 350               | PSY 350  | N/A    |

|                     |         |     |
|---------------------|---------|-----|
| PSYC 351            | PSY 351 | N/A |
| PSYC 359            | PSY 359 | N/A |
| PSYC 370            | PSY 370 | N/A |
| PSYC 375            | PSY 375 | N/A |
| PSYC 376            | PSY 376 | N/A |
| PSYC 380            | PSY 380 | N/A |
| PSYC 383            | PSY 383 | N/A |
| PSYC 400            | PSY 400 | N/A |
| PSYC 401            | PSY 401 | N/A |
| PSYC 402            | PSY 402 | N/A |
| PSYC 430            | PSY 430 | N/A |
| PSYC 442            | PSY 442 | N/A |
| PSYC 450            | PSY 450 | N/A |
| PSYC 470            | PSY 470 | N/A |
| PSYC 507            | PSY 507 | N/A |
| PSYC 508            | PSY 508 | N/A |
| PSYC 509            | PSY 509 | N/A |
| PSYC 510            | PSY 510 | N/A |
| PSYC 520            | PSY 520 | N/A |
| PSYC 522            | PSY 522 | N/A |
| PSYC 523            | PSY 523 | N/A |
| PSYC 524            | PSY 524 | N/A |
| PSYC 527            | PSY 527 | N/A |
| PSYC 529            | PSY 529 | N/A |
| PSYC 540            | PSY 540 | N/A |
| PSYC 547            | PSY 547 | N/A |
| PSYC 550            | PSY 550 | N/A |
| PSYC 570            | PSY 570 | N/A |
| PSYC 590            | PSY 590 | N/A |
| PSYC 598            | PSY 598 | N/A |
| PSYC 599            | PSY 599 | N/A |
| PSYC 600            | PSY 600 | N/A |
| PSYC 698            | PSY 698 | N/A |
| PSYC 700            | PSY 700 | N/A |
| <b>READ-READING</b> |         |     |
| READ 3110           | RDG 371 | N/A |
| READ 3996           | RDG 395 | N/A |
| READ 4310           | RDG 360 | N/A |
| READ 4320           | RDG 361 | N/A |
| READ 4330           | RDG 414 | N/A |
| READ 5210           | RDG 522 | N/A |
| READ 5220           | RDG 530 | N/A |
| READ 5310           | RDG 560 | N/A |
| READ 5320           | RDG 561 | N/A |
| READ 5330           | RDG 514 | N/A |
| READ 5340           | RDG 511 | N/A |
| READ 5350           | RDG 510 | N/A |
| READ 5360           | RDG 518 | N/A |
| READ 5410           | RDG 525 | N/A |
| READ 5420           | RDG 590 | N/A |
| READ 5990           | RDG 585 | N/A |
| READ 5992           | RDG 536 | N/A |

|  |           |        |
|--|-----------|--------|
| READ 5996  | RDG 598   | N/A    |
| READ 6110  | RDG 608   | N/A    |
| READ 6120  | RDG 617   | N/A    |
| READ 6130  | RDG 639   | N/A    |
| READ 6210  | RDG 630   | N/A    |
| READ 6320  | RDG 633   | N/A    |
| READ 6991  | RDG 600   | N/A    |
| READ 6992  | RDG 636   | N/A    |
| READ 6996  | RDG 698   | N/A    |
| READ 6997  | RDG 605   | N/A    |
| READ 6999  | RDG 699   | N/A    |
| <b>RGSC-RANGE SCIENCE</b>                            |           |        |
| RGSC 1110  | RGSC 150  | Unique |
| RGSC 2110  | RGSC 294  | Common |
| RGSC 2996  | RGSC 250  | Unique |
| <b>RXPP-PRESCRIPTION PRIVATE PRACTICE PSYCHOLOGY</b> |           |        |
| RXPP 6110  | RXPP 601  | N/A    |
| RXPP 6120  | RXPP 602  | N/A    |
| RXPP 6210  | RXPP 603  | N/A    |
| RXPP 6220  | RXPP 604  | N/A    |
| RXPP 6230  | RXPP 605  | N/A    |
| RXPP 6310  | RXPP 606  | N/A    |
| RXPP 6320  | RXPP 607  | N/A    |
| RXPP 6330  | RXPP 608  | N/A    |
| RXPP 6410  | RXPP 609  | N/A    |
| RXPP 6420  | RXPP 610  | N/A    |
| RXPP 6510  | RXPP 611  | N/A    |
| RXPP 6520  | RXPP 612  | N/A    |
| RXPP 6996  | RXPP 698  | N/A    |
| <b>SIGN-SIGN LANGUAGE</b>                            |           |        |
| SIGN 1110  | C D 374   | Common |
| SIGN 1120  | C D 375   | Common |
| SIGN 2110  | C D 476   | Common |
| SIGN 574   | C D 574   | N/A    |
| <b>SOCI-SOCIOLOGY</b>                                |           |        |
| SOCI 1110G   | SOC 101G  | Common |
| SOCI 2230  | SOC 263   | Common |
| SOCI 2230  | SOC 269   | Common |
| SOCI 2240  | SOC 258   | Common |
| SOCI 2261  | SOC 262   | Unique |
| SOCI 2310G   | SOC 201G  | Common |
| SOCI 3110V   | SOCI 330V | N/A    |
| SOCI 3120V   | SOCI 360V | N/A    |
| SOCI 3150  | SOCI 352  | N/A    |
| SOCI 3160  | SOCI 353  | N/A    |
| SOCI 3165  | SOCI 351  | N/A    |
| SOCI 3240  | SOCI 359  | N/A    |
| SOCI 3245V   | SOCI 374V | N/A    |
| SOCI 3250  | SOCI 390  | N/A    |
| SOCI 3255  | SOCI 393  | N/A    |
| SOCI 3270  | SOCI 357  | N/A    |
| SOCI 3310V   | SOCI 361V | N/A    |

|            |           |     |
|------------|-----------|-----|
| SOCI 3315  | SOCI 362  | N/A |
| SOCI 3330  | SOCI 365  | N/A |
| SOCI 3340V | SOCI 376V | N/A |
| SOCI 3410  | SOCI 371  | N/A |
| SOCI 3415  | SOCI 375  | N/A |
| SOCI 3510  | SOCI 391  | N/A |
| SOCI 3520  | SOCI 392  | N/A |
| SOCI 3610V | SOCI 336V | N/A |
| SOCI 3620V | SOCI 394V | N/A |
| SOCI 4150  | SOCI 444  | N/A |
| SOCI 4155  | SOCI 445  | N/A |
| SOCI 4160  | SOCI 446  | N/A |
| SOCI 4240V | SOCI 458V | N/A |
| SOCI 4310  | SOCI 409  | N/A |
| SOCI 4320  | SOCI 430  | N/A |
| SOCI 4335V | SOCI 465V | N/A |
| SOCI 4337  | SOCI 464  | N/A |
| SOCI 4410  | SOCI 480  | N/A |
| SOCI 4420  | SOCI 470  | N/A |
| SOCI 4430  | SOCI 473  | N/A |
| SOCI 4450  | SOCI 486  | N/A |
| SOCI 4460  | SOCI 489  | N/A |
| SOCI 4510  | SOCI 481  | N/A |
| SOCI 4555  | SOCI 477  | N/A |
| SOCI 4992  | SOCI 449  | N/A |
| SOCI 4996  | SOCI 448  | N/A |
| SOCI 4998  | SOCI 496  | N/A |
| SOCI 4999  | SOCI 401  | N/A |
| SOCI 5110  | SOCI 501  | N/A |
| SOCI 5150  | SOCI 544  | N/A |
| SOCI 5153  | SOCI 553  | N/A |
| SOCI 5155  | SOCI 545  | N/A |
| SOCI 5157  | SOCI 561  | N/A |
| SOCI 5160  | SOCI 546  | N/A |
| SOCI 5163  | SOCI 551  | N/A |
| SOCI 5165  | SOCI 552  | N/A |
| SOCI 5170  | SOCI 582  | N/A |
| SOCI 5175  | SOCI 583  | N/A |
| SOCI 5270  | SOCI 559  | N/A |
| SOCI 5310  | SOCI 509  | N/A |
| SOCI 5320  | SOCI 530  | N/A |
| SOCI 5335  | SOCI 565  | N/A |
| SOCI 5337  | SOCI 564  | N/A |
| SOCI 5410  | SOCI 571  | N/A |
| SOCI 5415  | SOCI 575  | N/A |
| SOCI 5420  | SOCI 570  | N/A |
| SOCI 5430  | SOCI 587  | N/A |
| SOCI 5440  | SOCI 579  | N/A |
| SOCI 5450  | SOCI 586  | N/A |
| SOCI 5460  | SOCI 589  | N/A |
| SOCI 5510  | SOCI 581  | N/A |
| SOCI 5515  | SOCI 574  | N/A |

|                         |            |        |
|-------------------------|------------|--------|
| SOCI 5555               | SOCI 577   | N/A    |
| SOCI 5991               | SOCI 549   | N/A    |
| SOCI 5996               | SOCI 548   | N/A    |
| SOCI 5998               | SOCI 596   | N/A    |
| SOCI 5999               | SOCI 599   | N/A    |
| <b>SOIL-SOIL</b>        |            |        |
| SOIL 2110               | SOIL 252   | Common |
| SOIL 2110L              | SOIL 252 L | Common |
| SOIL 2996               | SOIL 200   | Unique |
| <b>SOWK-SOCIAL WORK</b> |            |        |
| SOWK 2110G              | S WK 221G  | Common |
| SOWK 2111               | S WK 251   | Unique |
| SOWK 3110               | SOWK 309   | N/A    |
| SOWK 3120               | SOWK 311   | N/A    |
| SOWK 3130               | SOWK 312   | N/A    |
| SOWK 3140V              | SOWK 331V  | N/A    |
| SOWK 3150               | SOWK 316   | N/A    |
| SOWK 3210               | SOWK 300   | N/A    |
| SOWK 3220               | SOWK 313   | N/A    |
| SOWK 3230               | SOWK 315   | N/A    |
| SOWK 4110               | SOWK 417   | N/A    |
| SOWK 4210               | SOWK 415   | N/A    |
| SOWK 4220               | SOWK 416   | N/A    |
| SOWK 4230               | SOWK 443   | N/A    |
| SOWK 4240               | SOWK 418   | N/A    |
| SOWK 4310               | SOWK 401   | N/A    |
| SOWK 4311               | SOWK 412   | N/A    |
| SOWK 4320               | SOWK 403   | N/A    |
| SOWK 4321               | SOWK 419   | N/A    |
| SOWK 4510               | SOWK 490   | N/A    |
| SOWK 4996               | SOWK 497   | N/A    |
| SOWK 4997               | SOWK 449   | N/A    |
| SOWK 5110               | MSW 509    | N/A    |
| SOWK 5120               | MSW 560    | N/A    |
| SOWK 5130               | MSW 510    | N/A    |
| SOWK 5140               | MSW 514    | N/A    |
| SOWK 5150               | MSW 500    | N/A    |
| SOWK 5160               | MSW 520    | N/A    |
| SOWK 5170               | MSW 521    | N/A    |
| SOWK 5180               | MSW 551    | N/A    |
| SOWK 5190               | MSW 552    | N/A    |
| SOWK 5220               | MSW 562    | N/A    |
| SOWK 5250               | MSW 503    | N/A    |
| SOWK 5280               | MSW 554    | N/A    |
| SOWK 5290               | MSW 555    | N/A    |
| SOWK 5310               | MSW 547    | N/A    |
| SOWK 5320               | MSW 524    | N/A    |
| SOWK 5330               | MSW 525    | N/A    |
| SOWK 5340               | MSW 526    | N/A    |
| SOWK 5350               | MSW 527    | N/A    |
| SOWK 5510               | MSW 590    | N/A    |
| SOWK 5996               | MSW 597    | N/A    |



|                               |          |        |
|-------------------------------|----------|--------|
| SOWK 5997                     | MSW 595  | N/A    |
| SOWK 5999                     | MSW 599  | N/A    |
| <b>SPAN-SPANISH</b>           |          |        |
| SPAN 1110                     | SPAN 111 | Common |
| SPAN 1120                     | SPAN 112 | Common |
| SPAN 1210                     | SPAN 113 | Common |
| SPAN 1220                     | SPAN 213 | Common |
| SPAN 2110                     | SPAN 211 | Common |
| SPAN 2120                     | SPAN 212 | Common |
| SPAN 2210                     | SPAN 214 | Common |
| <b>SPED-SPECIAL EDUCATION</b> |          |        |
| SPED 2996                     | SPED 201 | Unique |
| SPED 3105                     | SPED 350 | N/A    |
| SPED 3110                     | SPED 355 | N/A    |
| SPED 3120                     | SPED 360 | N/A    |
| SPED 4110                     | SPED 407 | N/A    |
| SPED 4120                     | SPED 406 | N/A    |
| SPED 4130                     | SPED 409 | N/A    |
| SPED 4140                     | SPED 411 | N/A    |
| SPED 4150                     | SPED 480 | N/A    |
| SPED 4210                     | SPED 463 | N/A    |
| SPED 4220                     | SPED 459 | N/A    |
| SPED 4310                     | SPED 485 | N/A    |
| SPED 4320                     | SPED 486 | N/A    |
| SPED 4330                     | SPED 487 | N/A    |
| SPED 4340                     | SPED 488 | N/A    |
| SPED 4810                     | SPED 483 | N/A    |
| SPED 4811                     | SPED 481 | N/A    |
| SPED 4820                     | SPED 482 | N/A    |
| SPED 4840                     | SPED 492 | N/A    |
| SPED 4992                     | SPED 495 | N/A    |
| SPED 4996                     | SPED 489 | N/A    |
| SPED 5105                     | SPED 500 | N/A    |
| SPED 5110                     | SPED 507 | N/A    |
| SPED 5120                     | SPED 506 | N/A    |
| SPED 5130                     | SPED 509 | N/A    |
| SPED 5140                     | SPED 511 | N/A    |
| SPED 5150                     | SPED 580 | N/A    |
| SPED 5160                     | SPED 545 | N/A    |
| SPED 5210                     | SPED 504 | N/A    |
| SPED 5220                     | SPED 559 | N/A    |
| SPED 5230                     | SPED 523 | N/A    |
| SPED 5310                     | SPED 585 | N/A    |
| SPED 5320                     | SPED 586 | N/A    |
| SPED 5330                     | SPED 587 | N/A    |
| SPED 5340                     | SPED 588 | N/A    |
| SPED 5405                     | SPED 532 | N/A    |
| SPED 5410                     | SPED 533 | N/A    |
| SPED 5420                     | SPED 534 | N/A    |
| SPED 5430                     | SPED 536 | N/A    |
| SPED 5440                     | SPED 538 | N/A    |
| SPED 5450                     | SPED 539 | N/A    |

|           |          |     |
|-----------|----------|-----|
| SPED 5460 | SPED 552 | N/A |
| SPED 5470 | SPED 553 | N/A |
| SPED 5480 | SPED 554 | N/A |
| SPED 5490 | SPED 555 | N/A |
| SPED 5810 | SPED 582 | N/A |
| SPED 5811 | SPED 548 | N/A |
| SPED 5820 | SPED 590 | N/A |
| SPED 5850 | SPED 513 | N/A |
| SPED 5860 | SPED 510 | N/A |
| SPED 5870 | SPED 583 | N/A |
| SPED 5990 | SPED 522 | N/A |
| SPED 5991 | SPED 598 | N/A |
| SPED 5996 | SPED 501 | N/A |
| SPED 5999 | SPED 599 | N/A |
| SPED 6110 | SPED 607 | N/A |
| SPED 6120 | SPED 606 | N/A |
| SPED 6160 | SPED 645 | N/A |
| SPED 6170 | SPED 619 | N/A |
| SPED 6310 | SPED 685 | N/A |
| SPED 6330 | SPED 687 | N/A |
| SPED 6340 | SPED 688 | N/A |
| SPED 6810 | SPED 690 | N/A |
| SPED 6830 | SPED 613 | N/A |
| SPED 6840 | SPED 610 | N/A |
| SPED 6991 | SPED 600 | N/A |
| SPED 6996 | SPED 698 | N/A |
| SPED 6997 | SPED 605 | N/A |
| SPED 6998 | SPED 640 | N/A |
| SPED 7000 | SPED 700 | N/A |

**SPHS-SPEECH & HEARING SCIENCE**

|           |          |        |
|-----------|----------|--------|
| SPHS 2110 | C D 221  | Common |
| SPHS 4510 | SPHS 323 | N/A    |
| SPHS 4520 | SPHS 422 | N/A    |
| SPHS 4610 | SPHS 301 | N/A    |
| SPHS 4620 | SPHS 324 | N/A    |
| SPHS 4710 | SPHS 421 | N/A    |
| SPHS 4720 | SPHS 322 | N/A    |
| SPHS 4810 | SPHS 326 | N/A    |
| SPHS 4820 | SPHS 423 | N/A    |
| SPHS 4830 | SPHS 424 | N/A    |
| SPHS 5110 | SPHS 505 | N/A    |
| SPHS 5120 | SPHS 523 | N/A    |
| SPHS 5130 | SPHS 525 | N/A    |
| SPHS 5140 | SPHS 542 | N/A    |
| SPHS 5210 | SPHS 530 | N/A    |
| SPHS 5220 | SPHS 535 | N/A    |
| SPHS 5230 | SPHS 584 | N/A    |
| SPHS 5310 | SPHS 545 | N/A    |
| SPHS 5320 | SPHS 547 | N/A    |
| SPHS 5330 | SPHS 583 | N/A    |
| SPHS 5340 | SPHS 585 | N/A    |
| SPHS 5350 | SPHS 586 | N/A    |

|                             |            |        |
|-----------------------------|------------|--------|
| SPHS 5410                   | SPHS 521   | N/A    |
| SPHS 5510                   | SPHS 541   | N/A    |
| SPHS 5520                   | SPHS 548   | N/A    |
| SPHS 5988                   | SPHS 590   | N/A    |
| SPHS 5989                   | SPHS 640   | N/A    |
| SPHS 5990                   | SPHS 589   | N/A    |
| SPHS 5996                   | SPHS 591   | N/A    |
| SPHS 5999                   | SPHS 599   | N/A    |
| <b>SPMD-SPORTS MEDICINE</b> |            |        |
| SPMD 1110                   | SP M 190   | Unique |
| SPMD 1120                   | SP M 191   | Unique |
| SPMD 1190                   | SP M 272   | Unique |
| SPMD 1195                   | SP M 273   | Unique |
| SPMD 1310                   | SP M 175   | Unique |
| SPMD 1350                   | PE P 185   | Unique |
| SPMD 2130                   | SP M 250   | Unique |
| SPMD 2210                   | SP M 271   | Unique |
| SPMD 2210L                  | SP M 271 L | Unique |
| SPMD 2250                   | PE P 208   | Unique |
| SPMD 2310                   | SP M 200   | Unique |
| SPMD 3010                   | SP M 310   | N/A    |
| SPMD 3050                   | SP M 375   | N/A    |
| SPMD 3090                   | SP M 372   | N/A    |
| SPMD 3093                   | SP M 373   | N/A    |
| SPMD 3110                   | PE P 323   | N/A    |
| SPMD 3120                   | PE P 363   | N/A    |
| SPMD 3130                   | PE P 392   | N/A    |
| SPMD 3140                   | PE P 394   | N/A    |
| SPMD 3150                   | PE P 393   | N/A    |
| SPMD 3160                   | PE P 315   | N/A    |
| SPMD 3210                   | SP M 371   | N/A    |
| SPMD 3210L                  | SP M 371 L | N/A    |
| SPMD 3250                   | SP M 324   | N/A    |
| SPMD 3310                   | PE P 319   | N/A    |
| SPMD 3350                   | SP M 412   | N/A    |
| SPMD 3410                   | SP M 308   | N/A    |
| SPMD 3450                   | SP M 305   | N/A    |
| SPMD 3450L                  | SP M 305 L | N/A    |
| SPMD 3550                   | SP M 304   | N/A    |
| SPMD 3610                   | SP M 303   | N/A    |
| SPMD 3650                   | SP M 341   | N/A    |
| SPMD 3710                   | SP M 342   | N/A    |
| SPMD 4010                   | SP M 410   | N/A    |
| SPMD 4015                   | SP M 415   | N/A    |
| SPMD 4020                   | SP M 420   | N/A    |
| SPMD 4025                   | SP M 411   | N/A    |
| SPMD 4030                   | SP M 425   | N/A    |
| SPMD 4090                   | SP M 422   | N/A    |
| SPMD 4093                   | SP M 423   | N/A    |
| SPMD 4095                   | SP M 424   | N/A    |
| SPMD 4098                   | SP M 498   | N/A    |
| SPMD 4110                   | PE P 455   | N/A    |

|                        |            |        |
|------------------------|------------|--------|
| SPMD 4130              | PE P 466   | N/A    |
| SPMD 4210              | SP M 451   | N/A    |
| SPMD 4250              | SP M 460   | N/A    |
| SPMD 4250L             | SP M 460 L | N/A    |
| SPMD 4350              | SP M 330   | N/A    |
| SPMD 4410              | SP M 456   | N/A    |
| SPMD 4450              | SP M 307   | N/A    |
| SPMD 4510              | SP M 309   | N/A    |
| SPMD 4550              | SP M 223   | N/A    |
| SPMD 4610              | PE P 465   | N/A    |
| SPMD 4997              | SP M 499   | N/A    |
| SPMD 4998              | SP M 445   | N/A    |
| SPMD 5010              | SP M 510   | N/A    |
| SPMD 5015              | SP M 513   | N/A    |
| SPMD 5020              | SP M 514   | N/A    |
| SPMD 5025              | SP M 511   | N/A    |
| SPMD 5030              | SP M 515   | N/A    |
| SPMD 5310              | SP M 512   | N/A    |
| SPMD 5350              | SP M 560   | N/A    |
| SPMD 5410              | SP M 509   | N/A    |
| SPMD 5450              | SP M 556   | N/A    |
| SPMD 5510              | SP M 504   | N/A    |
| SPMD 5550              | SP M 545   | N/A    |
| SPMD 6310              | PE P 624   | N/A    |
| SPMD 6350              | SP M 551   | N/A    |
| SPMD 6410              | SP M 608   | N/A    |
| SPMD 6450              | SP M 665   | N/A    |
| SPMD 6510              | SP M 660   | N/A    |
| SPMD 6710              | SP M 597   | N/A    |
| SPMD 6750              | SP M 600   | N/A    |
| SPMD 6996              | PE P 501   | N/A    |
| SPMD 7000              | SP M 700   | N/A    |
| <b>STAT-STATISTICS</b> |            |        |
| STAT 371               | STAT 3110  | N/A    |
| STAT 470               | STAT 4210  | N/A    |
| STAT 480               | STAT 4220  | N/A    |
| STAT 515               | STAT 5210  | N/A    |
| STAT 525               | STAT 5220  | N/A    |
| STAT 535               | STAT 5230  | N/A    |
| STAT 562               | STAT 5310  | N/A    |
| STAT 563               | STAT 5320  | N/A    |
| STAT 571               | STAT 5330  | N/A    |
| STAT 572               | STAT 5335  | N/A    |
| STAT 581               | STAT 5340  | N/A    |
| STAT 582               | STAT 5345  | N/A    |
| <b>THEA-THEATRE</b>    |            |        |
| THEA 1110G             | THTR 101G  | Common |
| THEA 1210G             | THTR 105   | Common |
| THEA 1221              | THTR 110   | Unique |
| THEA 1222              | THTR 120   | Unique |
| THEA 1223              | THTR 130   | Unique |
| THEA 1310              | THTR 142   | Common |

|            |            |        |
|------------|------------|--------|
| THEA 1310L | THTR 142 L | Unique |
| THEA 1415  | THTR 149   | Unique |
| THEA 2221  | THTR 210   | Unique |
| THEA 2222  | THTR 206   | Unique |
| THEA 2310  | THTR 141   | Common |
| THEA 2310L | THTR 141 L | Unique |
| THEA 2340  | THTR 250   | Unique |
| THEA 2415  | THTR 249   | Unique |
| THEA 2421  | THTR 220   | Unique |
| THEA 2993  | THTR 200   | Unique |
| THEA 2996  | THTR 222   | Unique |
| THEA 300   | THTR 300   | N/A    |
| THEA 303   | THTR 303   | N/A    |
| THEA 304   | THTR 304   | N/A    |
| THEA 305   | THTR 305   | N/A    |
| THEA 307V  | THTR 307V  | N/A    |
| THEA 308   | THTR 308   | N/A    |
| THEA 310   | THTR 310   | N/A    |
| THEA 311   | THTR 311   | N/A    |
| THEA 312   | THTR 312   | N/A    |
| THEA 313   | THTR 313   | N/A    |
| THEA 317   | THTR 317   | N/A    |
| THEA 321V  | THTR 321V  | N/A    |
| THEA 322   | THTR 322   | N/A    |
| THEA 323   | THTR 323   | N/A    |
| THEA 329   | THTR 329   | N/A    |
| THEA 330   | THTR 330   | N/A    |
| THEA 334   | THTR 334   | N/A    |
| THEA 337   | THTR 337   | N/A    |
| THEA 341   | THTR 341   | N/A    |
| THEA 343   | THTR 343   | N/A    |
| THEA 345   | THTR 345   | N/A    |
| THEA 346   | THTR 346   | N/A    |
| THEA 347   | THTR 347   | N/A    |
| THEA 348   | THTR 348   | N/A    |
| THEA 349   | THTR 349   | N/A    |
| THEA 352   | THTR 352   | N/A    |
| THEA 353   | THTR 353   | N/A    |
| THEA 354   | THTR 354   | N/A    |
| THEA 355   | THTR 355   | N/A    |
| THEA 356   | THTR 356   | N/A    |
| THEA 357   | THTR 357   | N/A    |
| THEA 360   | THTR 360   | N/A    |
| THEA 366   | THTR 366   | N/A    |
| THEA 384   | THTR 384   | N/A    |
| THEA 395   | THTR 395   | N/A    |
| THEA 396   | THTR 396   | N/A    |
| THEA 408   | THTR 408   | N/A    |
| THEA 409   | THTR 409   | N/A    |
| THEA 410   | THTR 410   | N/A    |
| THEA 414   | THTR 414   | N/A    |
| THEA 417   | THTR 417   | N/A    |

|                     |           |        |
|---------------------|-----------|--------|
| THEA 430            | THTR 430  | N/A    |
| THEA 435            | THTR 435  | N/A    |
| THEA 439            | THTR 439  | N/A    |
| THEA 440            | THTR 440  | N/A    |
| THEA 450            | THTR 450  | N/A    |
| THEA 535            | THTR 535  | N/A    |
| <b>WELD-WELDING</b> |           |        |
| WELD 100            | WELD 1130 | Common |
| WELD 102            | WELD 1110 | Common |
| WELD 110            | WELD 1120 | Common |
| WELD 115            | WELD 2130 | Common |
| WELD 120            | WELD 1310 | Common |
| WELD 125            | WELD 1220 | Common |
| WELD 130            | WELD 1140 | Common |
| WELD 140            | WELD 1155 | Common |
| WELD 150            | WELD 2220 | Common |
| WELD 160            | WELD 1210 | Common |
| WELD 170            | WELD 1171 | Common |
| WELD 180            | WELD 2155 | Common |
| WELD 190            | WELD 1191 | Common |
| WELD 211            | WELD 2290 | Common |
| WELD 221            | WELD 2995 | Unique |
| WELD 255            | WELD 2996 | Common |
| WELD 295            | WELD 2997 | Unique |

## 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. 118)
- Applied Business Retail and Merchandising Services - Certificate (p. 119)
- Applied Studies - Associate in Applied Studies (p. 110)
- Arts - Associate of Arts (p. 111)
- Automotive Technology - Associate of Applied Science (p. 116)
- Automotive Technology - Certificate of Completion (p. 117)

### B

- Building Trades Woodworking - Certificate of Completion (p. 117)

### C

- Child Development - Certificate of Completion (p. 138)
- Computer Technology - Associate of Applied Science (p. 123)
- Computer Technology - Certificate of Completion (p. 124)

- Counseling and Community Psychology - Associate in Counseling and Community Psychology (p. 128)
- Counseling and Community Psychology - Certificate of Completion (p. 129)
- Creative Media Design - Associate of Applied Science (p. 125)
- Criminal Justice - Associate in Criminal Justice (p. 126)

### D

- Digital Marketing & Advertising - Associate of Applied Science (p. 129)
- Drafting and Graphics Technology - Certificate of Completion (p. 130)

### E

- Early Childhood Education - Associate in Early Childhood Education (p. 136)
- Early Childhood Education - Certificate of Completion (p. 139)
- Education - Associate in Education (p. 140)
- Electrical Systems - Certificate of Completion (p. 141)
- Emergency Medical Services (EMS) - Basic - Certificate of Completion (p. 145)
- Emergency Medical Services (EMS) Intermediate - Associate of Applied Science (p. 145)
- Energy Technology - Certificate of Completion (p. 147)

### G

- Game Design - Certificate of Completion (p. 147)

## H

- Health Careers - Certificate of Completion (p. 148)

## M

- Medical Billing and Coding - Certificate of Completion (p. 148)

## N

- Nursing Assistant - Certificate of Completion (p. 149)

## P

- Phlebotomy Technician - Certificate of Completion (p. 150)
- Prebusiness - Associate in Prebusiness (p. 119)

## S

- Science - Associate of Science (<https://catalogs.nmsu.edu/grants/degree-certificate-programs/as/>)
- Social Work - Associate of Social Work (p. 150)
- Southwest Heritage Studies - Certificate on Completion (p. 152)

## W

- Web Fundamentals - Certificate of Completion (p. 152)
- Welding Technology - Associate of Applied Science (p. 155)
- Welding Technology - Certificate of Completion (p. 156)

### 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 are encouraged to contact the appropriate State, Tribal or local agency for specific certification requirements.

## Applied Studies - Associate in Applied Studies

The Applied Studies Degree is a versatile and practical program designed to equip students with a diverse set of skills that can be directly applied to real-world scenarios across various industries. This degree offers a unique blend of theoretical knowledge and hands-on experience, making it an ideal choice for individuals seeking a well-rounded education that prepares them for a dynamic and evolving job market.

Graduates with an Applied Studies Degree are well-positioned for a wide range of career opportunities. They find success in fields such as business, government, healthcare, technology, education, and non-profit organizations. The versatility of the degree allows for seamless transitions between different industries, making it an excellent choice for those seeking a dynamic and resilient career path.

### Associate in Applied Studies

The Associate in Applied 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 including career technical courses. It is not intended, however, to be a substitute for the Associate of Arts or Associate of Science degree programs, which prepare students for transfer to bachelor's degree programs.

Students who have previously earned an associate degree from NMSU Grants or from any other institution are ineligible to receive the Associate in Applied Studies degree. Similarly, the Associate in Applied Studies degree will not be awarded concurrently with any other associate degree offered by NMSU Grants.

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;
- Complete 32 - 35 credits of General Education requirements
- Achieve a 2.0 cumulative GPA;
- Residency - A minimum of 15 of the total degree credits for the associate's degree must be completed at NMSU Grants, or any other NMSU campus.

General Education requirements and elective credits must 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.

| Prefix                        | Title         | Credits |
|-------------------------------|---------------|---------|
| General Education             |               |         |
| <i>Area I: Communications</i> |               |         |
| ENGL 1110G                    | Composition I | 10      |

|  |   |           |
|--|---|-----------|
| ENGL 2210G   | Professional and Technical Communication Honors |           |
| or ENGL 2221G  | Writing in the Humanities and Social Science    |           |
| COMM 1115G   | Introduction to Communication                   |           |
| or COMM 1130G  | Public Speaking                                 |           |
| Area II: Mathematics <sup>1</sup>  |   | 3-4       |
| Area III: Laboratory Science <sup>1</sup>  |   | 4         |
| Area IV: Social/Behavioral Sciences <sup>1</sup>   |   | 3         |
| Either an Area III Laboratory Science OR Area IV Social/Behavioral Science Course <sup>1</sup> |   | 3-4       |
| Area V: Humanities <sup>1</sup>  |   | 3         |
| Area VI: Creative and Fine Arts <sup>1</sup>   |   | 3         |
| General Education Elective <sup>1</sup>  |   | 3-4       |
| Electives, to bring up the total to 60 credits <sup>2</sup>                                    |   | 28-25     |
| <b>Total Credits</b>   |   | <b>60</b> |

<sup>1</sup> According to the requirements outlined in the desired bachelor's degree, it is recommended to utilize elective credit to complete any required second language courses. 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. A list of General Education courses sorted by Area can be found here (<http://catalogs.nmsu.edu/carlsbad/essential-information-students/general-education-courses/>).

<sup>2</sup> Electives may be academic courses that are 1000-2000 level or career technical courses to bring the total credits to 60. 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.

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## Arts - Associate of Arts

The Associate of Arts in Arts serves as a solid foundation for those who wish to pursue further studies in the arts or related fields. Graduates may transfer to four-year institutions to pursue a bachelor's degree in fine arts, art history, or other related disciplines. Students should take courses at this level that fit into the bachelor's degree program of their interest. Alternatively, the program equips students with creative and critical skills that are valuable in various professional settings, including roles in education, arts administration, and cultural organizations.

The Associate of Arts (A.A.) degree represents the completion of the first two years of several bachelor's degree programs. Students following the Associate of Arts degree program 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 (p. 10) course list can be found here.

| Prefix  | Title   | Credits |
|---|---|---------|
| <b>General Education</b>  |   |         |
| <i>Area I: Communication</i>  |   |         |
| <i>English Composition - Level 1</i>  |   |         |
| ENGL 1110G  | Composition I                                   | 4       |
| <i>English Composition - Level 2</i>  |   |         |
| ENGL 2210G  | Professional and Technical Communication Honors | 3       |
| or ENGL 2221G   | Writing in the Humanities and Social Science    |         |
| <i>Oral Communication</i>   |   |         |
| COMM 1130G  | Public Speaking                                 | 3       |
| or COMM 1115G   | Introduction to Communication                   |         |
| <i>Area II: Mathematics</i>   |   |         |
| Select one MATH 1000-2000G course from the New Mexico General Education list. The following courses are recommended <sup>1,2</sup>        |   |         |
| MATH 1130G  | Survey of Mathematics                           |         |
| MATH 1220G  | College Algebra                                 |         |
| MATH 1350G  | Introduction to Statistics                      |         |
| <i>Area III: Laboratory Science</i>   |   |         |
| Select one 4 credit course from the New Mexico General Education list for Area III; see link above. <sup>2</sup>                          |   |         |
| <i>Area IV: Social/Behavioral Sciences</i>  |   |         |
| Select two 3 credit course from the New Mexico General Education list for Area VI; see link above. The following courses are recommended. |   |         |
| CEPY 1120G  | Human Growth and Behavior                       |         |
| CJUS 1110G  | Introduction to Criminal Justice                |         |
| PSYC 1110G  | Introduction to Psychology                      |         |
| SOCI 1110G  | Introduction to Sociology                       |         |
| <i>Area V: Humanities</i>   |   |         |
| Select any 3 credit course listed in the New Mexico General Education link; The following courses are recommended <sup>2</sup>            |   |         |
| HIST 1110G  | United States History I                         |         |
| HIST 1120G  | United States History II                        |         |
| HIST 1130G  | World History I                                 |         |
| HIST 1140G  | World History II                                |         |
| PHIL 1115G  | Introduction to Philosophy                      |         |
| PHIL 2110G  | Introduction to Ethics                          |         |
| PHIL 2230G  | Philosophical Thought                           |         |
| <i>Area VI: Creative and Fine Arts</i>  |   |         |
| Select any 3 credit course from the New Mexico General Education link; The following courses are recommended <sup>2</sup>                 |   |         |
| ARTH 1115G  | Orientation in Art                              |         |
| MUSC 1130G  | Music Appreciation: Western Music               |         |
| THEA 1110G  | Introduction to Theatre                         |         |
| <i>General Education Elective <sup>2</sup></i>  |   |         |
| Select one 3 credit class from the New Mexico General Education course list; see link above.  |   |         |



| Core Requirements   |  |           |
|---|--|-----------|
| OECS 105  | Introduction to Information Technology | 3         |
| or FYEX 1110  | First-year Seminar                     |           |
| Electives, to bring the total credits to 60   |  |           |
| 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 and SPAN 1120 are recommended for some Bachelor degree programs. <sup>3</sup> |  | 25        |
| <b>Total Credits</b>  |  | <b>60</b> |

- <sup>1</sup> 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.
- <sup>2</sup> See the General Education (p. 10) section of the catalog for a full list of courses
- <sup>3</sup> 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.

## A Suggested Plan of Study

### First Year

| Fall   |  | Credits   |
|--|--|-----------|
| ENGL 1110G   | Composition I                          | 4         |
| OECS 105   | Introduction to Information Technology | 3         |
| or FYEX 1110   | or First-year Seminar                  |           |
| Area IV: Social/Behavioral Science course <sup>1</sup> |  | 3         |
| Area II: Mathematics Course <sup>1</sup>               |  | 3         |
| Elective <sup>2</sup>                                  |  | 3         |
| <b>Credits</b>   |  | <b>16</b> |

### Spring

|  |   |           |
|--|---|-----------|
| ENGL 2210G   | Professional and Technical Communication        | 3         |
| or ENGL 2221G  | Honors  |           |
|  | or Writing in the Humanities and Social Science |           |
| Area III: Laboratory Science Course <sup>1</sup>       |   | 4         |
| Area V: Humanities <sup>1</sup>                        |   | 3         |
| Area IV: Social/Behavioral Science Course <sup>1</sup> |   | 3         |
| Elective: Recommended a SPAN 1110 <sup>2</sup>         |   | 4         |
| <b>Credits</b>   |   | <b>17</b> |

### Second Year

| Fall  |                                  |   |
|---|----------------------------------|---|
| COMM 1130G  | Public Speaking                  | 3 |
| or COMM 1115G                                       | or Introduction to Communication |   |
| Area IV: Creative and Fine Arts Course <sup>1</sup> |                                  | 3 |
| Elective <sup>2</sup>                               |                                  | 3 |
| Elective <sup>2</sup>                               |                                  | 3 |

| Elective <sup>2</sup>                   | 3         |
|---|-----------|
| <b>Credits</b>                          | <b>15</b> |
| Spring                                  |           |
| General Education Elective <sup>1</sup> | 3         |
| Elective <sup>2</sup>                   | 3         |
| Elective <sup>2</sup>                   | 3         |
| Elective <sup>2</sup>                   | 3         |
| <b>Credits</b>                          | <b>12</b> |
| <b>Total Credits</b>                    | <b>60</b> |

- <sup>1</sup> See the recommended courses in the degree requirements or refer to the General Education (p. 10) section of the catalog for a full list of courses
- <sup>2</sup> 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 and SPAN 1120 are recommended for some Bachelor degree programs.

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## Automotive Technology

The Automotive Technology program at NMSU Grants provides students automotive service experience through theory and practical application of skills. The auto service industry requires technicians to have tangible working skills, critical thinking skills and customer service skills (all of which are addressed throughout the program). NMSU Grants has the unique ability to have small class sizes, which gives students individualized responses and attention from instructors and faculty members. Students can work to receive an Associate of Applied Science in Automotive Technology, or a Certificate in Automotive Technology. In addition, the program works closely with the Welding Trades and Energy/Electrical Trades programs, to give students the possibility to expand their automotive skills in other disciplines. Students have enjoyed the ease at which their skills can be applied to other trades programs. Students will also work closely with the community by offering their services to those in the surrounding area that request automotive service.

Students who complete the Associate of Applied Science – Automotive Technology program are given several benefits if they continue in the career field. The National Institute for Automotive Service Excellence (the leading certification group in the United States for automotive technicians) requires mechanics to gain at least two years of hands-on training for certification, however after completing our Associate program, only one year of on-the-job training is required. This incentivizes students to complete the program and gain as much experience as possible before attempting ASE certification tests. Students can gain entry level service positions in various automotive capacities such as dealerships, specialty repair shops, auto part distribution stores, and even aftermarket service shops (custom vehicle shops).

Automotive Technology - Associate of Applied Science (p. 116)

Automotive Technology - Certificate (p. 117)

**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.
2. Diagnosis and demonstrate knowledge of series, parallel, and combination circuits, and their applications as applied to automotive repair.
3. Demonstrate use of wiring diagrams as a diagnostic aide.
4. Demonstrate use of meters, handheld labsopes, scan tools, and other diagnostic equipment.
5. Demonstrate use of repair manuals, both hard copy and electronic.
6. Demonstrate knowledge, diagnose and repair Air Bag Supplemental Inflatable Restraint systems
7. Demonstrate knowledge, diagnose and repair various convenience electronic systems.
8. Interpret customer concerns, create and complete a diagnostic routine and successfully repair an electrical problem.
9. Diagnose and repair starting and charging systems.

**AUTO 115. Automotive Engine Repair**

**4 Credits (2+4P)**

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.

**Learning Outcomes**

1. Understand internal combustion engine theory.
2. Identify all components of an engine and their function.
3. Identify worn engine components and determine necessary repairs.
4. Effectively present engine issues and corrections using verbal and written communication.
5. Diagnose cooling system issues and the effect on various components.
6. Rebuild/ reassemble an engine to specifications.
7. Understand the operation and rationale of forced induction.
8. Identify methods of increasing engine efficiency.

**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 123. Job Shadowing**

**1 Credit (1)**

Observing a professional in a real-world work setting, while gaining on-the-job training. Student will meet in a weekly class or online.

**Learning Outcomes**

1. Work with colleagues in the diagnosing and repair of automobiles.
2. Understand basic tool needs to meet industry requirements.
3. Prepare for various pay scales (straight time, flat-rate, hourly).
4. Understand daily operations in a live shop setting.
5. Understand the roles in the automotive field to include Technician, Service Writer, Shop Foreman, and Service Manager.

**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 CDL 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 160. Hybrid\Electric Vehicles****4 Credits (2+4P)**

Theory and operation of Hybrid and Electric vehicles with emphasis on electrical motor subsystems and battery management systems.

**Prerequisite:** AUTO 113, AUTO 115.

**Prerequisite/Corequisite:** AUTO 205.

**Learning Outcomes**

1. Use automotive scanners and test equipment effectively.
2. Explain the difference between hybrid and electrical vehicles.
3. Identify faulty electrical components and determine necessary repairs.
4. Effectively present issues and corrections using verbal and written communication.
5. Demonstrate proper safety when working with hybrid/EV batteries.
6. Demonstrate knowledge of differences between hybrid and fully electric vehicles and their benefits.
7. Perform routine service on hybrid and electric vehicles.

**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 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 200. Engine Performance****4 Credits (2+4P)**

Theory and operation of ignition, emission control systems, fuel systems, and exhaust systems. Use of troubleshooting and diagnostic equipment. May be repeated up to 4 credits.

**Prerequisite/Corequisite:** AUTO 113, AUTO 115.

**Learning Outcomes**

1. Use automotive scanners and test equipment effectively
2. Identify all emission control components of an engine and their function
3. Identify faulty ignition components and determine necessary repairs
4. Effectively present engine issues and corrections using verbal and written communication
5. Diagnose fuel system issues and the effect on various components
6. Demonstrate knowledge of differences between different fuel delivery methods and their benefits
7. Understand the operation and rationale of forced induction
8. Identify methods of increasing engine efficiency

**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.
2. Be able to explain basic and advanced engine designs and engine operating theory.
3. Be able to explain engine cooling and lubricating systems.
4. Be able to explain intake and exhaust systems
5. Test battery, starting and charging systems
6. Test ignition systems including point type, electronic trigger type, and distributor-less systems.
7. Test automotive fuel system including fuel tanks, lines, filters and pumps.
8. Test basic electronic fuel injection systems.
9. Test automotive computer input devices and controlled devices
10. Demonstrate ability to work with PC based automotive software including Alldata,

**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 'O' high voltage gloves and liners to attend this class. Restricted to: Community Colleges only.

**Prerequisite(s):** AUTO 113 and AUTO 114.

**AUTO 210. Light Diesel****4 Credits (2+4P)**

Theory and operation of light duty diesel engines with emphasis on highway diesel usage including major engine subsystems and fuel management systems.

**Prerequisite/Corequisite:** AUTO 113, AUTO 115.

**Learning Outcomes**

1. Use automotive scanners and test equipment effectively.
2. Identify all emission control components included on diesel engines and their function.
3. Identify faulty emission components and determine necessary repairs.
4. Effectively present engine issues and corrections using verbal and written communication
5. Diagnose fuel system issues and the effect on various components.
6. Demonstrate knowledge of differences between different fuel delivery methods and their benefits.
7. Understand the operation and rationale of forced induction.
8. Identify methods of increasing engine efficiency.

**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 1
10. demonstrate proficiency in the proper use of scanners, information and vehicle specifications to determine needed repairs 1
11. 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.

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# Automotive Technology - Associate of Applied Science

61 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 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.

## Program Requirements

| Prefix                   | Title | Credits |
|--------------------------|-------|---------|
| <b>General Education</b> |       |         |

Choose one course from four of the following six content areas for a total of 12-14 credits <sup>1,2</sup>

This degree requires courses from Areas I, IV, V and VI; students do not need to select any other General Education courses to complete the requirement

|   |   |           |
|---|---|-----------|
| <i>Area I: Communications</i>                           |   |           |
| ENGL 1110G  | Composition I                                       | 4         |
| <i>Area IV: Social/Behavioral Sciences</i> <sup>2</sup> |   |           |
| <i>Area V: Humanities</i> <sup>2</sup>                  |   |           |
| <i>Area VI: Creative and Fine Arts</i> <sup>2</sup>     |   |           |
| <i>General Education Elective</i>                       |   |           |
| ENGL 2210G  | Professional and Technical Communication Honors     | 3         |
| <b>Automotive Core Requirements</b>                     |   |           |
| AUTO 115  | Automotive Engine Repair                            | 4         |
| AUTO 117  | Electronic Analysis and Tune-Up of Gasoline Engines | 5         |
| AUTO 120  | Electrical Systems                                  | 4         |
| AUTO 122  | Automotive Brakes                                   | 4         |
| AUTO 129  | Automotive Steering and Suspension                  | 4         |
| AUTO 205  | Manual Drive Train and Axles                        | 4         |
| AUTO 132  | Automotive Air-Conditioning and Heating Systems     | 4         |
| or AUTO 127   | Basic Automatic Transmission                        |           |
| AUTO 137  | Fuel Systems and Emission Controls                  | 4         |
| AUTO 295  | Special Topics (Basic Auto Maintenance)             | 2         |
| OETS 118  | Mathematics for Technicians                         | 3         |
| or MATH 1215  | Intermediate Algebra                                |           |
| WELD 130  | Introduction to GMAW MIG                            | 3         |
| OEE 110   | Basic Electricity and Electronics                   | 4         |
| <b>Total Credits</b>                                    |   | <b>61</b> |

<sup>1</sup> Each course selected must be from a different area and students cannot take multiple courses in the same area.

<sup>2</sup> See the General Education (p. 10) 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.

| <b>First Year</b>                                    |   |                |
|--|---|----------------|
| <b>Fall</b>  |   | <b>Credits</b> |
| ENGL 1110G   | Composition I                                       | 4              |
| AUTO 115   | Automotive Engine Repair                            | 4              |
| OETS 118   | Mathematics for Technicians                         | 3              |
| or MATH 1215   | or Intermediate Algebra                             |                |
| WELD 130   | Introduction to GMAW MIG                            | 3              |
| <b>Credits</b>                                       |   | <b>14</b>      |
| <b>Spring</b>  |   |                |
| AUTO 117   | Electronic Analysis and Tune-Up of Gasoline Engines | 5              |
| AUTO 120   | Electrical Systems                                  | 4              |
| AUTO 137   | Fuel Systems and Emission Controls                  | 4              |
| Area IV: Social/Behavior Science Course <sup>1</sup> |   | 3              |
| <b>Credits</b>                                       |   | <b>16</b>      |

**Second Year**

| <b>Fall</b>   |  |           |
|---|--|-----------|
| AUTO 122  | Automotive Brakes  | 4         |
| AUTO 129  | Automotive Steering and Suspension   | 4         |
| AUTO 205  | Manual Drive Train and Axles   | 4         |
| OEET 110  | Basic Electricity and Electronics  | 4         |
| <b>Credits</b>                                      |  | <b>16</b> |
| <b>Spring</b>                                       |  |           |
| AUTO 132<br>or AUTO 127                             | Automotive Air-Conditioning and Heating Systems<br>or Basic Automatic Transmission | 4         |
| AUTO 295  | Special Topics   | 2         |
| ENGL 2210G  | Professional and Technical Communication Honors                                    | 3         |
| Area V: Humanities Course <sup>1</sup>              |  | 3         |
| Area VI: Creative and Fine Arts Course <sup>1</sup> |  | 3         |
| <b>Credits</b>                                      |  | <b>15</b> |
| <b>Total Credits</b>                                |  | <b>61</b> |

<sup>1</sup> See the General Education (p. 10) section of the catalog for a full list of courses

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## Automotive Technology - Certificate of Completion

32 - 33 credits

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

| Prefix                         | Title  | Credits   |
|--------------------------------|--|-----------|
| <b>Automotive Requirements</b> |  |           |
| AUTO 115                       | Automotive Engine Repair                                     | 4         |
| AUTO 117                       | Electronic Analysis and Tune-Up of Gasoline Engines          | 5         |
| AUTO 120                       | Electrical Systems   | 4         |
| AUTO 122                       | Automotive Brakes  | 4         |
| AUTO 129                       | Automotive Steering and Suspension                           | 4         |
| AUTO 137                       | Fuel Systems and Emission Controls                           | 4         |
| AUTO 205<br>or AUTO 127        | Manual Drive Train and Axles<br>Basic Automatic Transmission | 4         |
| OEET 110                       | Basic Electricity and Electronics                            | 4         |
| <b>Total Credits</b>           |  | <b>33</b> |

## 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**

| <b>Fall</b>             |   |   | <b>Credits</b> |
|-------------------------|---|---|----------------|
| AUTO 115                | Automotive Engine Repair  | 4 | 4              |
| AUTO 122                | Automotive Brakes   | 4 | 4              |
| AUTO 129                | Automotive Steering and Suspension                              | 4 | 4              |
| OEET 110                | Basic Electricity and Electronics                               | 4 | 4              |
| <b>Credits</b>          |   |   | <b>16</b>      |
| <b>Spring</b>           |   |   |                |
| AUTO 117                | Electronic Analysis and Tune-Up of Gasoline Engines             | 5 | 5              |
| AUTO 120                | Electrical Systems  | 4 | 4              |
| AUTO 137                | Fuel Systems and Emission Controls                              | 4 | 4              |
| AUTO 205<br>or AUTO 127 | Manual Drive Train and Axles<br>or Basic Automatic Transmission | 4 | 4              |
| <b>Credits</b>          |   |   | <b>17</b>      |
| <b>Total Credits</b>    |   |   | <b>33</b>      |

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## Building Trades Woodworking - Certificate of Completion

The Woodworking Certificate Program is designed to provide participants with a comprehensive and hands-on experience in the art and craft of woodworking. This program is ideal for individuals seeking to develop their skills in woodworking, whether as a hobbyist or as a foundation for a potential career in the woodworking industry. Upon successfully completing the program, participants will receive a recognized certificate. This credential not only showcases your commitment to mastering the art of woodworking but also serves as a valuable asset for those pursuing woodworking as a profession.

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.

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

## 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   |
| BCT 104              | Woodworking Skills I                    | 3         |
| BCT 106              | Woodworking Theory and Practice         | 3         |
| BCT 255              | Special Topics                          | 3         |
| <b>Credits</b>       |   | <b>9</b>  |
| Spring               |   |           |
| BCT 105              | Woodworking Skills II                   | 3         |
| BCT 206              | Advanced Cabinetmaking                  | 3         |
| BCT 290              | Special Problems in Building Technology | 1         |
| <b>Credits</b>       |   | <b>7</b>  |
| <b>Total Credits</b> |   | <b>16</b> |

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## Business

The Associate of Science in Pre-Business is designed as a transfer degree to a Bachelor's degree offered by the College of Business at New Mexico State University. Students who earn this degree will have completed the first two years of most four-year business degrees.

The Associate degree in Applied Business is designed to prepare students for various middle-level entry jobs in business related fields such as Bookkeeper, Accounting Clerk, Human Resources Assistant/ Benefits Coordinator, Customer Service Manager, Loan Officer, Purchasing Manager/Agent, Medical Billing Specialist, Administrative Assistant, Operations Manager, Business Services Representative, Computing Business Coordinator or Entrepreneur.

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.

Applied Business- Associate of Applied Business (p. 118)

Applied Business Retail and Merchandising Services - Certificate (p. 119)

Prebusiness- Associate in Prebusiness (p. 119)

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## Applied Business - Associate of Applied Business

61 Credits

The Associate degree in Applied Business is designed to prepare students for middle-level entry jobs in business. The general program surveys the fundamentals of business operations giving special consideration to basic accounting practices, basic business law,

economics, fundamentals of marketing, and management of human resources.

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.

| Prefix   | Title   | Credits                      |
|--|---|------------------------------|
| <b>General Education Requirements</b>  |   |                              |
| <i>Choose one course from four of the following six content areas for a total of 12-14 credits<sup>1,2</sup></i> |   |                              |
| <b>Area I: Communications</b>  |   |                              |
| ENGL 1110G   | Composition I   | 4                            |
| <b>Area IV: Social/Behavioral Sciences</b>   |   |                              |
| ECON 2110G   | Macroeconomic Principles  | 3                            |
|  | or ECON 2120G   | Principles of Microeconomics |
| <b>Area V: Humanities</b>  |   |                              |
|  | Select one course from Area V: Humanities <sup>1</sup>            | 3                            |
| <b>Area VI: Creative &amp; Fine Arts</b>   |   |                              |
|  | Select one course from Area VI: Creative & Fine Arts <sup>1</sup> | 3                            |
| <b>General Education Elective</b>  |   |                              |
| COMM 1115G   | Introduction to Communication                                     | 3                            |
|  | or COMM 1130G   | Public Speaking              |
| <b>Applied Business Core Requirements</b>  |   |                              |
| ACCT 2110  | Principles of Accounting I  | 3                            |
| ACCT 2120  | Principles of Accounting II                                       | 3                            |
| BCIS 1110  | Introduction to Information Systems                               | 3                            |
| BMGT 216   | Business Math   | 3                            |
|  | or MATH 1215  | Intermediate Algebra         |
| BUSA 1110  | Intro to Business   | 3                            |
| BUSA 2230G   | Human Relations in Business                                       | 3                            |
| BMGT 208   | Business Ethics   | 3                            |
| ECON 2120G   | Principles of Microeconomics                                      | 3                            |
| ENGL 2210G   | Professional and Technical Communication                          | 3                            |
|  | Honors  |                              |
| MGMT 2110  | Principles of Management  | 3                            |
| MKTG 2110  | Principles of Marketing   | 3                            |
| OECS 215   | Spreadsheet Applications  | 3                            |
| <b>Electives, to bring the total credits to 61 (Choose from BMGT, BLAW, MKTG, BFIN, or OATS)</b>                 |   | <b>9</b>                     |
| <b>Total Credits</b>   |   | <b>61</b>                    |

Note: This is a terminal degree and not designed to transfer to a Bachelor's degree program within NMSU. Those students planning to earn a Bachelor's degree will need to complete all general education requirements, including MATH 1220G College Algebra or higher.

## Retail Marketing and Merchandising Area of Interest

| Prefix   | Title                         | Credits |
|----------|-------------------------------|---------|
| BMGT 126 | Retail Management             | 3       |
| BMGT 132 | Principles of Selling         | 3       |
| BMGT 136 | Forecasting Business Activity | 3       |

## Entrepreneurship & Small Business

| Prefix    | Title                     | Credits |
|-----------|---------------------------|---------|
| ENTR 1110 | Entrepreneurship          | 3       |
| BMGT 236  | Small Business Start-Up   | 3       |
| BMGT 237  | Managing Small Businesses | 3       |

<sup>1</sup> See the General Education (<https://catalogs.nmsu.edu/grants/general-education/>) section of the catalog for a full list of all general education 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.

| First Year                      |   | Credits   |
|---------------------------------|---|-----------|
| <b>Fall</b>                     |   |           |
| ACCT 2110                       | Principles of Accounting I                          | 3         |
| BUSA 1110                       | Intro to Business                                   | 3         |
| BCIS 1110                       | Introduction to Information Systems                 | 3         |
| ECON 2110G                      | Macroeconomic Principles                            | 3         |
| ENGL 1110G                      | Composition I                                       | 4         |
| <b>Credits</b>                  |   | <b>16</b> |
| <b>Spring</b>                   |   |           |
| ACCT 2120                       | Principles of Accounting II                         | 3         |
| BMGT 216<br>or MATH 1215        | Business Math<br>or Intermediate Algebra            | 3         |
| ENGL 2210G                      | Professional and Technical Communication<br>Honors  | 3         |
| OECS 215                        | Spreadsheet Applications                            | 3         |
| COMM 1115G<br>or COMM 1130G     | Introduction to Communication<br>or Public Speaking | 3         |
| <b>Credits</b>                  |   | <b>15</b> |
| <b>Second Year</b>              |   |           |
| <b>Fall</b>                     |   |           |
| AREA V: Humanities              |   | 3         |
| AREA VI: Creative and Fine Arts |   | 3         |
| MGMT 2110                       | Principles of Management                            | 3         |
| BMGT 208                        | Business Ethics                                     | 3         |
| Elective                        |   | 3         |
| <b>Credits</b>                  |   | <b>15</b> |
| <b>Spring</b>                   |   |           |
| BUSA 2230G                      | Human Relations in Business                         | 3         |
| ECON 2120G                      | Principles of Microeconomics                        | 3         |
| MKTG 2110                       | Principles of Marketing                             | 3         |
| Electives                       |   | 6         |
| <b>Credits</b>                  |   | <b>15</b> |
| <b>Total Credits</b>            |   | <b>61</b> |

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## Applied Business Retail and Merchandising Services - Certificate

### 18 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 the Associate of Applied Business.

| Prefix                     | Title                               | Credits   |
|----------------------------|-------------------------------------|-----------|
| <b>Course Requirements</b> |                                     |           |
| BUSA 1110                  | Intro to Business                   | 3         |
| BMGT 126                   | Retail Management                   | 3         |
| BMGT 132                   | Principles of Selling               | 3         |
| BMGT 136                   | Forecasting Business Activity       | 3         |
| BMGT 216                   | Business Math                       | 3         |
| BCIS 1110                  | Introduction to Information Systems | 3         |
| <b>Total Credits</b>       |                                     | <b>18</b> |

## 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           |                                     | Credits   |
|----------------------|-------------------------------------|-----------|
| <b>Fall</b>          |                                     |           |
| BUSA 1110            | Intro to Business                   | 3         |
| BMGT 216             | Business Math                       | 3         |
| BMGT 132             | Principles of Selling               | 3         |
| <b>Credits</b>       |                                     | <b>9</b>  |
| <b>Spring</b>        |                                     |           |
| BMGT 126             | Retail Management                   | 3         |
| BMGT 136             | Forecasting Business Activity       | 3         |
| BCIS 1110            | Introduction to Information Systems | 3         |
| <b>Credits</b>       |                                     | <b>9</b>  |
| <b>Total Credits</b> |                                     | <b>18</b> |

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## Prebusiness - Associate in Prebusiness

**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.



A grade of C- or better is required for all courses designated below with footnote #2.

| Prefix   | Title  | Credits   |
|--|--|-----------|
| <b>General Education Requirements</b>                                |  |           |
| <i>Area I: Communications</i>  |  |           |
| <i>English Composition - Level 1</i> <sup>1,2</sup>                  |  |           |
| ENGL 1110G   | Composition I <sup>2</sup>   | 4         |
| <i>English Composition - Level 2</i>                                 |  |           |
| ENGL 2210G   | Professional and Technical Communication Honors <sup>2</sup>               | 3         |
| <i>Oral Communication</i>  |  |           |
| COMM 1115G<br>or COMM 1130G  | Introduction to Communication <sup>2</sup><br>Public Speaking              | 3         |
| <i>Area II: Mathematics</i>  |  |           |
| MATH 1220G   | College Algebra <sup>1,2</sup>   | 3         |
| <i>Area III: Laboratory Sciences (4 credits)</i> <sup>3</sup>        |  |           |
| Select one course from Area III: Laboratory Science <sup>3</sup>     |  |           |
| <i>Area IV: Social/Behavioral Sciences (2 Courses)</i>               |  |           |
| ECON 2110G   | Macroeconomic Principles (Grade of C- or better required) <sup>2</sup>     | 3         |
| ECON 2120G   | Principles of Microeconomics (Grade of C- or better required) <sup>2</sup> | 3         |
| <i>Area V: Humanities (1 course)</i>                                 |  |           |
| Select one course from Area V: Humanities <sup>3</sup>               |  |           |
| <i>Area VI: Creative and Fine Arts (1 course)</i>                    |  |           |
| Select one course from Area VI: Creative/Fine Arts <sup>3</sup>      |  |           |
| <i>General Education Elective</i>                                    |  |           |
| MATH 1430G   | Applications of Calculus I (Major Requirement) <sup>2</sup>                | 3         |
| <b>Program Requirements</b>  |  |           |
| ACCT 2110  | Principles of Accounting I <sup>2</sup>                                    | 3         |
| ACCT 2120  | Principles of Accounting II <sup>2</sup>                                   | 3         |
| BCIS 1110  | Introduction to Information Systems <sup>2</sup>                           | 3         |
| BUSA 1110  | Intro to Business <sup>2</sup>   | 3         |
| MATH 1350G   | Introduction to Statistics <sup>2</sup>                                    | 3         |
| <b>Electives, to bring up the total to 60 credits</b> <sup>4,5</sup> |  |           |
| BLAW 2110 and MKTG 2110 recommended. <sup>5</sup>                    |  | 13        |
| <b>Total Credits</b>   |  | <b>60</b> |

<sup>1</sup> MATH 1220G College Algebra is required for the degree but students may need to take any prerequisites needed to enter MATH 1220G first.

<sup>2</sup> A grade of C- or better is required.

<sup>3</sup> See the General Education Section (<https://catalogs.nmsu.edu/grants/general-education/>) of the catalog for a full list of courses.

<sup>4</sup> Elective credit may vary based on General Education course selection, second language requirements, prerequisites, dual credit, AP credit, double majors and/or minors. 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.

<sup>5</sup> BLAW 2110 Business Law I and MKTG 2110 Principles of Marketing are recommended electives. Note that BLAW 2110 will satisfy the BLAW 316 requirement and MKTG 2110 will satisfy the MKTG 303 requirement for students pursuing a Bachelor of Business

Administration at NMSU Las Cruces (will count as lower division not upper division credit).

## 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.

### First Year

| Fall  |  | Credits   |
|---|--|-----------|
| BCIS 1110   | Introduction to Information Systems <sup>2</sup>                 | 3         |
| BUSA 1110   | Intro to Business <sup>2</sup>                                   | 3         |
| ENGL 1110G  | Composition I <sup>2</sup>                                       | 4         |
| COMM 1130G<br>or COMM 1115G                                     | Public Speaking <sup>2</sup><br>or Introduction to Communication | 3         |
| Select one course from Area VI: Creative/Fine Arts <sup>1</sup> |  | 3         |
| <b>Credits</b>  |  | <b>16</b> |
| Spring  |  | Credits   |
| ENGL 2210G  | Professional and Technical Communication Honors <sup>2</sup>     | 3         |
| MATH 1220G  | College Algebra <sup>2</sup>                                     | 3         |
| Select one course from Area V: Humanities <sup>1</sup>          |  | 3         |
| Electives <sup>4</sup>  |  | 7         |
| <b>Credits</b>  |  | <b>16</b> |

### Second Year

| Fall   |   | Credits   |
|--|---|-----------|
| ACCT 2110  | Principles of Accounting I <sup>2</sup>   | 3         |
| ECON 2110G   | Macroeconomic Principles <sup>2</sup>     | 3         |
| MATH 1430G   | Applications of Calculus I <sup>2</sup>   | 3         |
| Select one course from Area III: Laboratory Science <sup>1</sup> |   | 4         |
| Elective (MKTG 2110 recommended) <sup>4,5</sup>                  |   | 3         |
| <b>Credits</b>   |   | <b>16</b> |
| Spring   |   | Credits   |
| ACCT 2120  | Principles of Accounting II <sup>2</sup>  | 3         |
| ECON 2120G   | Principles of Microeconomics <sup>2</sup> | 3         |
| MATH 1350G   | Introduction to Statistics <sup>2</sup>   | 3         |
| Elective (BLAW 2110 recommended) <sup>4,5</sup>                  |   | 3         |
| <b>Credits</b>   |   | <b>12</b> |
| <b>Total Credits</b>   |   | <b>60</b> |

<sup>1</sup> See the General Education Section (<https://catalogs.nmsu.edu/grants/general-education/>) of the catalog for a full list of courses.

<sup>2</sup> A grade of C- or better is required.

<sup>3</sup> MATH 1220G College Algebra is required for the degree but students may need to take any prerequisites needed to enter MATH 1220G first.

<sup>4</sup> Elective credit may vary based on General Education course selection, second language requirements, prerequisites, dual credit, A credit, double majors and/or minor 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.

<sup>5</sup> BLAW 2110 Business Law I and MKTG 2110 Principles of Marketing are recommended electives. Note that BLAW 2110 will satisfy the BLAW 316 requirement and MKTG 2110 will satisfy the MKTG 303 requirement for students pursuing a Bachelor of Business Administration at NMSU Las Cruces (will count as lower division not upper division credit).

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## Computer Technology

The Computer Technology Program at NMSU Grants provides its graduates with an excellent understanding of the world of computers from hardware, software, and networking perspectives. Giving graduates a pathway to their career as computer and network technicians in a constantly changing and expanding industry. This program is able to be completed entirely online with the option to utilize face to face labs as well. This program provides a pathway from a Computer Technology Certificate into the Associate of Applied Science in Computer Technology into the online Bachelor of Information Communication Technology at NMSU Las Cruces.

Computer Technology - Associate of Applied Science (p. 123)

Computer Technology - Certificate (p. 124)

### 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.

#### 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.

### 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 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 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.
2. Students will create a basic web page utilizing WC3 principles.
3. Students will explain the importance and impact of web presence in today's business environment.
4. Students will determine and utilize web page features and techniques for a specific business.
5. Students will create a web design management plan for business.

6. Students will discuss web page tools for performance and web traffic analytics.

7. Students will identify web design components for a motble society.

### **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.

### **OECS 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):** OECS 220. Restricted to Community Colleges campuses only.

### **OECS 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):** OECS 207. Restricted to Community Colleges campuses only.

### **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.
2. Generate and summarize data.
3. Use tools for business projections, comparisons, trends, and informed decisions.
4. Create advanced queries and enhance table design.
5. Use form tools and create custom forms.
6. Use automation tools for efficiency.
7. Secure and maintain data.

8. Plan, research, create, and revise spreadsheets and databases for a specific business application.
9. Discuss emerging topics in business related to data analysis and management.

**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.

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# Computer Technology - Associate of Applied Science

**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 12 - 14 credits of 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.

The New Mexico General Education (p. 10) course course list can be found here.

(See also Certificate in Computer Technology) (p. 124)

| Prefix   | Title         | Credits |
|--|---------------|---------|
| <b>General Education</b>   |               |         |
| This degree requires 12 - 14 credits from courses in the NM General Education Areas I, III and IV; students must select one course from the remaining areas to complete General Education requirements. <sup>2</sup> |               | 12-14   |
| Area I: Communications   |               |         |
| ENGL 1110G   | Composition I |         |
| Area III: Laboratory Sciences  |               |         |
| Select one Area III: Laboratory Sciences course (4 credits) <sup>2</sup>   |               |         |
| Area IV: Social/Behavioral Sciences  |               |         |
| Select one Area IV: Social/Behavioral Science Course (3 credits) <sup>2</sup>  |               |         |
| Select a course from one the following General Education Areas <sup>2</sup>  |               |         |
| Area II: Mathematics <sup>1</sup>  |               |         |
| Area V: Humanities   |               |         |
| Area VI: Creative and Fine Arts  |               |         |

*General Education Elective*

|  |   |           |
|--|---|-----------|
| ENGL 2210G   | Professional and Technical Communication Honors | 3         |
| <b>Core Requirements</b>                                       |   |           |
| OECS 105   | Introduction to Information Technology          | 3         |
| OECS 125   | Operating Systems                               | 3         |
| OECS 185   | PC Maintenance and Repair I                     | 3         |
| OECS 204   | Linux Operating System                          | 3         |
| OECS 207   | Windows   | 3         |
| OECS 230   | Data Communications and Networks I              | 3         |
| OECS 231   | Data Communications and Networks II             | 3         |
| OECS 269   | Network Security                                | 3         |
| OETS 118   | Mathematics for Technicians                     | 3         |
| or MATH 1215   | Intermediate Algebra                            | 3         |
| FDMA 1360  | Web Design I                                    | 3         |
| <b>Electives, to bring the total credits to 60-62</b>          |   |           |
| Select elective courses from OECS/FDMA/C S/ARTS or BICT option |   | 13        |
| <b>Total Credits</b>   |   | <b>60</b> |

- <sup>1</sup> MATH 1220G is recommended for student pursuing the Bachelor of ICT.
- <sup>2</sup> See the General Education (p. 10) section of the catalog for a full list of courses.
- <sup>3</sup> OECS 195. Java Programming I is required for the Bachelor of Science in Information & Communication Technology at NMSU.

**Required Courses for Students Pursuing the Bachelor of Science of Information & Communication Technology (BICT) at the Las Cruces Campus**

| Prefix                                    | Title                         | Credits |
|---|-------------------------------|---------|
| COMM 1115G                                | Introduction to Communication | 3       |
| or COMM 1130G                             | Public Speaking               |         |
| MATH 1220G                                | College Algebra               | 3       |
| OECS 195                                  | Java Programming I            | 3       |
| Area III: Laboratory Science <sup>2</sup> |                               | 4       |

**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.

| <b>First Year</b>                  |  |                |
|------------------------------------|--|----------------|
| <b>Fall</b>                        |  | <b>Credits</b> |
| OECS 105                           | Introduction to Information Technology | 3              |
| OECS 125                           | Operating Systems                      | 3              |
| OECS 185                           | PC Maintenance and Repair I            | 3              |
| OECS 207                           | Windows                                | 3              |
| OECS 230                           | Data Communications and Networks I     | 3              |
| <b>Credits</b>                     |  | <b>15</b>      |
| <b>Spring</b>                      |  |                |
| OECS 231                           | Data Communications and Networks II    | 3              |
| OECS 269                           | Network Security                       | 3              |
| OECS 204                           | Linux Operating System                 | 3              |
| Any OECS/C S/FDMA Elective Courses |  | 6              |

If all courses are completed, apply for the Certificate in Computer Technology

| <b>Credits</b>  |   | <b>15</b> |
|---|---|-----------|
| <b>Summer</b>   |   |           |
| An OECS/C S/FDMA Elective Course  |   | 3         |
| <b>Credits</b>  |   | <b>3</b>  |
| <b>Second Year</b>  |   |           |
| <b>Fall</b>   |   |           |
| ENGL 1110G  | Composition I                                   | 4         |
| FDMA 1360   | Web Design I                                    | 3         |
| OETS 118  | Mathematics for Technicians                     | 3         |
| Select one 4 credit course from Area III: Laboratory Science Course from the NM General Education list <sup>1</sup> |   | 4         |
| <b>Credits</b>  |   | <b>14</b> |
| <b>Spring</b>   |   |           |
| ENGL 2210G  | Professional and Technical Communication Honors | 3         |
| Select one course from Area IV: Social /Behavior Sciences   |   | 3         |
| Select one course from General Education Area II, V, or VI <sup>1</sup>   |   | 3         |
| C S/FDMA/OECS Elective Courses  |   | 4         |
| <b>Credits</b>  |   | <b>13</b> |
| <b>Total Credits</b>  |   | <b>60</b> |

<sup>1</sup> See the General Education (p. 10) section of the catalog for a full list of courses.

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**Computer Technology - Certificate of Completion**

30 credits

Students are given a variety of hands-on experiences to prepare them for computer related careers. There are opportunities for employment in a variety of settings including software support, computer repair, information management, networking and education.

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

| Prefix                             | Title                                  | Credits   |
|------------------------------------|--|-----------|
| <b>Computer Technology Courses</b> |  |           |
| OECS 105                           | Introduction to Information Technology | 3         |
| OECS 125                           | Operating Systems                      | 3         |
| OECS 185                           | PC Maintenance and Repair I            | 3         |
| OECS 204                           | Linux Operating System                 | 3         |
| OECS 207                           | Windows                                | 3         |
| OECS 230                           | Data Communications and Networks I     | 3         |
| OECS 231                           | Data Communications and Networks II    | 3         |
| OECS 269                           | Network Security                       | 3         |
| OECS/C S/FDMA Electives            |  | 6         |
| <b>Total Credits</b>               |  | <b>30</b> |

| First Year             |  |           |
|------------------------|--|-----------|
| Fall                   |  | Credits   |
| OECS 105               | Introduction to Information Technology | 3         |
| OECS 125               | Operating Systems                      | 3         |
| OECS 185               | PC Maintenance and Repair I            | 3         |
| OECS 230               | Data Communications and Networks I     | 3         |
| OECS/C S/FDMA elective |  | 3         |
| <b>Credits</b>         |  | <b>15</b> |
| Spring                 |  |           |
| OECS 207               | Windows                                | 3         |
| OECS 204               | Linux Operating System                 | 3         |
| OECS 231               | Data Communications and Networks II    | 3         |
| OECS 269               | Network Security                       | 3         |
| OECS/C S/FDMA elective |  | 3         |
| <b>Credits</b>         |  | <b>15</b> |
| <b>Total Credits</b>   |  | <b>30</b> |

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## Creative Media Design - Associate of Applied Science

The Creative Media Design Program at NMSU Grants provides its graduates with a variety of foundational skills to begin their path into a career in the massive industry of digital media. Graduates receive training in multiple industry standard software such as Adobe Creative Cloud, DaVinci Resolve, Unreal Engine 5, 3DS Max to cover a wide array of skillsets for the graduate to choose from. Graduates can also receive in person training of new technology and equipment utilized in top industry companies for film, game design, and mixed reality productions. This program is able to be completed entirely online with the option to utilize face to face labs as well.

### 60 credits

The Associate of Applied Science in Creative Media prepares students for entry-level work in the media industry. Students will develop a foundational workflow using industry standard software to create a multitude of digital media assets, along with gaining experience with project management and elevated computer literacy. The skillset and workflows obtained through this program can also be utilized in fields such as education, television/film, and game design.

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.

| Prefix   | Title         | Credits  |
|--|---------------|----------|
| <b>General Education</b>   |               |          |
| This degree requires courses from New Mexico General Education Areas I, IV, V, and VI for a total 13 credits. Courses listed are recommended and others can be found on the NM General Education list below. |               |          |
| <i>Area I: Communications</i>  |               | <b>4</b> |
| ENGL 1110G   | Composition I |          |

|  |   |           |
|--|---|-----------|
| <i>Area IV: Social/Behavioral Sciences</i>   |   | <b>3</b>  |
| Select one course from Area IV: Social /Behavior Sciences (3 credits) <sup>2</sup> |   |           |
| <i>Area V: Humanities</i>  |   | <b>3</b>  |
| Select one course from Area V: Humanities (3 credits) <sup>2</sup>                 |   |           |
| <i>Area VI: Creative and Fine Arts</i>   |   | <b>3</b>  |
| Select one course from Area VI: Creative & Fine Arts (3 credits) <sup>2</sup>      |   |           |
| <i>General Education Elective<sup>2</sup></i>                                      |   | <b>3</b>  |
| ENGL 2210G   | Professional and Technical Communication Honors   |           |
| <i>Core Requirements</i>   |   |           |
| FDMA 1120  | Desktop Publishing                                | 3         |
| FDMA 1220  | Introduction to Digital Video Editing             | 3         |
| FDMA 1360  | Web Design I                                      | 3         |
| FDMA 1415  | Principles of Sound                               | 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 2530  | Introduction to 3D Modeling                       | 3         |
| FDMA 2994  | Portfolio Design & Development                    | 3         |
| <i>Other Course Requirements</i>   |   |           |
| OECS 105   | Introduction to Information Technology            | 3         |
| <b>Electives, to bring the total credits to 60<sup>3</sup></b>                     |   | <b>11</b> |
| Select courses from the following prefixes: ARTS/ C S/FDMA/OECS                    |   |           |
| <b>Total Credits</b>   |   | <b>60</b> |

- <sup>1</sup> Each course selected must be from a different area and students cannot take multiple courses in the same area.
- <sup>2</sup> See the General Education (p. 10) section of the catalog for a full list of courses.
- <sup>3</sup> 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                          |   | Credits   |
| OECS 105                      | Introduction to Information Technology            | 3         |
| FDMA 1220                     | Introduction to Digital Video Editing             | 3         |
| FDMA 1535                     | Introduction to Illustrator                       | 3         |
| FDMA 1515                     | Introduction to Digital Image Editing - Photoshop | 3         |
| FDMA/ ARTS/ OECS/ CS Elective |   | 3         |
| <b>Credits</b>                |   | <b>15</b> |
| Spring                        |   |           |
| FDMA 1120                     | Desktop Publishing                                | 3         |
| FDMA 1415                     | Principles of Sound                               | 3         |
| FDMA 1710                     | 2D Animation                                      | 3         |

|  |           |
|--|-----------|
| General Education Course - One course from Area IV <sup>1</sup>  | 3         |
| FDMA/ARTS/C S/ OECS Elective                                     | 3         |
| <b>Credits</b>   | <b>15</b> |
| <b>Second Year</b>   |           |
| <b>Fall</b>  |           |
| FDMA 1360 Web Design I   | 3         |
| FDMA 1630 Principles of Design                                   | 3         |
| FDMA 2530 Introduction to 3D Modeling                            | 3         |
| ENGL 1110G Composition I   | 4         |
| General Education Course - One course from Area V <sup>1</sup>   | 3         |
| <b>Credits</b>   | <b>16</b> |
| <b>Spring</b>  |           |
| FDMA 2994 Portfolio Design & Development                         | 3         |
| ENGL 2210G Professional and Technical Communication Honors       | 3         |
| General Education Elective: One Course from Area VI <sup>1</sup> | 3         |
| FDMA/ARTS/C S/ OECS Elective                                     | 5         |
| <b>Credits</b>   | <b>14</b> |
| <b>Total Credits</b>   | <b>60</b> |

<sup>1</sup> See the General Education (p. 10) section of the catalog for a full list of courses.

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## Criminal Justice - Associate in Criminal Justice

The Criminal Justice Associate degree program prepares students for a career in the multifaceted criminal justice system. The curriculum, which covers a variety of topics in criminal justice, focuses on developing the ability to recognize and apply pertinent concepts and techniques while stressing the practical skills necessary to deal with complex social, political, and organizational factors. This program is structured around core courses, allowing students to acquire the basic knowledge and skills needed to work in law enforcement, private security, corrections, probation, and other related areas of criminal justice.

The Criminal Justice Associate degree program includes the study of substantive law, criminal justice, social sciences, humanities, behavioral sciences, natural sciences, and general education courses. The degree can be applied toward a bachelor's degree in Criminal Justice or other majors at New Mexico State University.

### 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.

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

The New Mexico General Education (p. 10) course list can be found here.

| Prefix  | Title   | Credits                                      |
|---|---|--|
| <b>General Education</b>  |   |  |
| <i>Area I: Communications</i>   |   |  |
| <i>English Composition - Level 1</i>  |   |  |
| ENGL 1110G  | Composition I                                   | 4  |
| <i>English Composition - Level 2</i>  |   |  |
| Select one from the following:  |   |  |
| ENGL 2210G  | Professional and Technical Communication Honors | 3  |
|   | or ENGL 2221G                                   | Writing in the Humanities and Social Science |
| <i>Oral Communication</i>   |   |  |
| COMM 1115G  | Introduction to Communication                   | 3  |
|   | or COMM 1130G                                   | Public Speaking                              |
| <i>Area II: Mathematics</i>   |   |  |
| Select one from the following:  |   |  |
| MATH 1220G  | College Algebra <sup>1</sup>                    | 3  |
|   | or MATH 1350G                                   | Introduction to Statistics                   |
| <i>Area III: Laboratory Science Course</i>  |   |  |
| Select one course from Area III: Laboratory Science <sup>3</sup>  |   |  |
| <i>Area IV: Social/Behavioral Sciences</i>  |   |  |
| CJUS 1110G  | Introduction to Criminal Justice                | 3  |
| Select an additional Area IV course <sup>3</sup>  |   |  |
| <i>Area V: Humanities <sup>3</sup></i>  |   |  |
| Recommended to select one of the following: <sup>2</sup>  |   |  |
| PHIL 1120G  | Logic, Reasoning, & Critical Thinking           |  |
| PHIL 1145G  | Philosophy, Law, and Ethics                     |  |
| PHIL 2110G  | Introduction to Ethics                          |  |
| PHIL 2230G  | Philosophical Thought                           |  |
| <i>Area VI: Creative and Fine Arts</i>  |   |  |
| Select one course from Area VI: Creative & Fine Arts <sup>3</sup>   |   |  |
| <i>General Education Elective <sup>3</sup></i>  |   |  |
| <b>Core Requirements</b>  |   |  |
| CJUS 1120   | Criminal Law                                    | 3  |
| CJUS 2220   | The American Law Enforcement System             | 3  |
| CJUS 2120   | Criminal Courts and Procedure                   | 3  |
| CJUS 2150   | Corrections System                              | 3  |
| <i>Second Language Requirement</i>  |   |  |
| Select 8 credits from NMSU College of Arts and Sciences second language requirements.   |   |  |
| <i>Other Course Requirements</i>  |   |  |
| OECS 105  | Introduction to Information Technology          | 3  |
|   | or FYEX 1110                                    | First-year Seminar                           |
| <b>Electives, to bring the total credits to 60</b>  |   |  |
| Select 5 credits of electives to bring total credits to a minimum of 60. Math prerequisites may satisfy electives however developmental MATH is not included. |   |  |
| <b>Total Credits</b>  |   |  |
| <b>60</b>   |   |  |

<sup>1</sup> MATH 1220G College Algebra or MATH 1350G Introduction to Statistics are preferred but any Mathematics course that is numbered

higher than MATH 1220G is also accepted. Note: Students may need to take prerequisite courses prior to enrolling in the required Mathematics course.

<sup>2</sup> For those students 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.

<sup>3</sup> See the General Education (<https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/>) section of the catalog for a full list of courses.

## 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 Criminal Justice degree (<https://catalogs.nmsu.edu/nmsu/arts-sciences/criminal-justice/criminal-justice-bachelor-criminal-justice/>) for additional information on how to satisfy this requirement.

Second Language Requirements:

1. Completion of a second language through the 1120 level
2. Completion through the 2130 level for native speakers

## 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

### First Year

| Fall                            |  | Credits   |
|---------------------------------|--|-----------|
| ENGL 1110G                      | Composition I                                    | 4         |
| MATH 1220G<br>or MATH 1350G     | College Algebra<br>or Introduction to Statistics | 3         |
| CJUS 1110G                      | Introduction to Criminal Justice                 | 3         |
| AREA V: Humanities <sup>1</sup> |  | 3         |
| OECS 105                        | Introduction to Information Technology           | 3         |
| <b>Credits</b>                  |  | <b>16</b> |

### Spring

|   |   |           |
|---|---|-----------|
| ENGL 2210G                                      | Professional and Technical Communication Honors | 3         |
| AREA III: Laboratory Science <sup>1</sup>       |   | 4         |
| AREA IV: Social/Behavioral Science <sup>1</sup> |   | 3         |
| CJUS 1120                                       | Criminal Law                                    | 3         |
| <b>Credits</b>                                  |   | <b>13</b> |

### Second Year

| Fall   |   | Credits   |
|--|---|-----------|
| COMM 1115G<br>or COMM 1130G                  | Introduction to Communication<br>or Public Speaking | 3         |
| AREA VI: Creative and Fine Arts <sup>1</sup> |   | 3         |
| Second Language I <sup>2</sup>               |   | 4         |
| CJUS 2150                                    | Corrections System                                  | 3         |
| CJUS 2220                                    | The American Law Enforcement System                 | 3         |
| <b>Credits</b>                               |   | <b>16</b> |

### Spring

|  |                               |           |
|--|-------------------------------|-----------|
| Second Language II <sup>2</sup>                        |                               | 4         |
| CJUS 2120  | Criminal Courts and Procedure | 3         |
| AREA IV: Social/Behavioral Science Course <sup>1</sup> |                               | 3         |
| Electives  |                               | 5         |
| <b>Credits</b>   |                               | <b>15</b> |
| <b>Total Credits</b>                                   |                               | <b>60</b> |

<sup>1</sup> The New Mexico General Education (p. 10) course list can be found here.

<sup>2</sup> 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 Criminal Justice degree (<https://catalogs.nmsu.edu/nmsu/arts-sciences/criminal-justice/criminal-justice-bachelor-criminal-justice/>) for additional information on how to satisfy this requirement.

Second Language Requirements:

1. Completion of a second language through the 1120 level
2. Completion through the 2130 level for native speakers

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## Counseling and Community Psychology

The Certificate and Associate Degree in Counseling and Community Psychology is designed to provide a foundation of study to the undergraduate who is preparing to enter one of the helping professions such as psychology, education, social work, criminal justice or nursing. A total of 60 credits is required to obtain this Associate Degree. The NMSU Grants Campus CEPY program includes the lower-division courses required for entry into the Counseling and Community Psychology baccalaureate program at New Mexico State University. Alternatively, students may opt to transfer to a similar program at another four-year institution. Completion of this program does NOT guarantee admission into the Counseling and Community Psychology Program at NMSU Las Cruces.

Counseling and Community Psychology - Associate in Counseling and Community Psychology (p. 128)

Counseling and Community Psychology - Certificate of Completion (p. 129)

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# Counseling and Community Psychology - Associate in Counseling and Community Psychology

| Prefix  | Title   | Credits   |
|---|---|-----------|
| <b>General Education</b>  |   |           |
| <i>Area I: Communications</i>   |   |           |
| <i>English Composition - Level 1</i>  |   |           |
| ENGL 1110G  | Composition I <sup>1</sup>  | 4         |
| <i>English Composition - Level 2</i>  |   |           |
| ENGL 2221G<br>or ENGL 2210G   | Writing in the Humanities and Social Science<br>Professional and Technical Communication Honors | 3         |
| <i>Oral Communication</i>   |   |           |
| COMM 1115G<br>or COMM 1130G   | Introduction to Communication<br>Public Speaking  | 3         |
| <i>Area II: Mathematics</i>   |   |           |
| MATH 1220G  | College Algebra <sup>1,2</sup>  | 3         |
| <i>Area III: Laboratory Science</i>   |   |           |
| Select two courses from Area III: Laboratory Science (8 credits) <sup>3</sup> |   | 8         |
| <i>Area IV: Social/Behavioral Sciences</i>                                    |   |           |
| CEPY 1120G  | Human Growth and Behavior   | 3         |
| <i>Area V: Humanities</i>   |   |           |
| Choose one of the following   |   | 3         |
| HIST 1110G  | United States History I   |           |
| HIST 1120G  | United States History II  |           |
| HIST 1130G  | World History I   |           |
| HIST 1140G  | World History II  |           |
| <i>Area VI: Creative and Fine Arts</i>  |   |           |
| ARTH 1115G<br>or THEA 1110G   | Orientation in Art<br>Introduction to Theatre   | 3         |
| <i>General Education Elective</i>   |   |           |
| PSYC 1110G  | Introduction to Psychology <sup>1</sup>   | 3         |
| <i>Core Degree Requirements <sup>1</sup></i>                                  |   |           |
| CEPY 2110   | Learning in the Classroom   | 3         |
| CEPY 2120   | The Preschool Child   | 3         |
| CEPY 2130   | Adolescence - School Setting  | 3         |
| CEPY 2140   | Explorations of Counseling & Community Psychology   | 3         |
| PHIL 2110G  | Introduction to Ethics  | 3         |
| <i>Other degree requirements</i>  |   |           |
| MATH 1350G  | Introduction to Statistics <sup>1</sup>   | 3         |
| PSYC 2230   | Psychology of Adjustment  | 3         |
| PSYC 2311   | A Study of Substance Abuse through Learning   | 3         |
| Choose one from the following:  |   | 3         |
| GNDR 2110G  | Introduction to Women, Gender, and Sexuality Studies  |           |
| SOCI 1110G  | Introduction to Sociology   |           |
| SOCI 2310G  | Contemporary Social Problems  |           |
| SOWK 2110G  | Introduction to Human Services & Social Work  |           |
| <b>Total Credits</b>  |   | <b>60</b> |

<sup>1</sup> A grade of C or better is required for all core degree requirements and other designated courses.

<sup>2</sup> MATH 1220G College Algebra (or any higher MATH course, excluding MATH 1130G Survey of Mathematics) is required for the degree.

Student may need to take any prerequisite course needed to enter MATH 1220G College Algebra or higher first.  
<sup>3</sup> The New Mexico General Education (<https://catalogs.nmsu.edu/grants/general-education/>) course list can be found here for areas I, II, III, IV, V, and VI.

| <b>First Year</b>                                |  |                |
|--|--|----------------|
| <b>Semester 1</b>                                |  | <b>Credits</b> |
| ENGL 1110G                                       | Composition I  | 4              |
| MATH 1220G                                       | College Algebra  | 3              |
| CEPY 1120G                                       | Human Growth and Behavior  | 3              |
| CEPY 2110  | Learning in the Classroom  | 3              |
| ARTH 1115G<br>or THEA 1110G                      | Orientation in Art<br>or Introduction to Theatre   | 3              |
| <b>Credits</b>                                   |  | <b>16</b>      |
| <b>Semester 2</b>                                |  |                |
| CEPY 2120  | The Preschool Child  | 3              |
| ENGL 2221G<br>or ENGL 2210G                      | Writing in the Humanities and Social Science<br>or Professional and Technical Communication Honors | 3              |
| MATH 1350G                                       | Introduction to Statistics   | 3              |
| PSYC 1110G                                       | Introduction to Psychology   | 3              |
| Area III: Laboratory Science                     |  | 4              |
| <b>Credits</b>                                   |  | <b>16</b>      |
| <b>Second Year</b>                               |  |                |
| <b>Semester 1</b>                                |  |                |
| COMM 1115G<br>or COMM 1130G                      | Introduction to Communication<br>or Public Speaking  | 3              |
| CEPY 2130  | Adolescence - School Setting   | 3              |
| PHIL 2110G                                       | Introduction to Ethics   | 3              |
| PSYC 2311  | A Study of Substance Abuse through Learning  | 3              |
| Area III: Laboratory Science                     |  | 4              |
| <b>Credits</b>                                   |  | <b>16</b>      |
| <b>Semester 2</b>                                |  |                |
| CEPY 2140  | Explorations of Counseling & Community Psychology  | 3              |
| PSYC 2230  | Psychology of Adjustment   | 3              |
| Area V: Humanities - Choose one of the following |  | 3              |
| HIST 1110G                                       | United States History I  |                |
| HIST 1120G                                       | United States History II   |                |
| HIST 1130G                                       | World History I  |                |
| HIST 1140G                                       | World History II   |                |
| Choose one from the following:                   |  | 3              |
| GNDR 2110G                                       | Introduction to Women, Gender, and Sexuality Studies   |                |
| SOCI 1110G                                       | Introduction to Sociology  |                |
| SOCI 2310G                                       | Contemporary Social Problems   |                |
| SOWK 2110G                                       | Introduction to Human Services & Social Work   |                |
| <b>Credits</b>                                   |  | <b>12</b>      |
| <b>Total Credits</b>                             |  | <b>60</b>      |

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# Counseling and Community Psychology - Certificate of Completion

| Prefix               | Title  | Credits   |
|----------------------|--|-----------|
| CEPY 1120G           | Human Growth and Behavior <sup>1</sup>                         | 3         |
| CEPY 2110            | Learning in the Classroom <sup>1</sup>                         | 3         |
| CEPY 2120            | The Preschool Child <sup>1</sup>                               | 3         |
| CEPY 2130            | Adolescence - School Setting <sup>1</sup>                      | 3         |
| CEPY 2140            | Explorations of Counseling & Community Psychology <sup>1</sup> | 3         |
| PSYC 1110G           | Introduction to Psychology                                     | 3         |
| PSYC 2230            | Psychology of Adjustment                                       | 3         |
| PSYC 2311            | A Study of Substance Abuse through Learning                    | 3         |
| <b>Total Credits</b> |  | <b>24</b> |

<sup>1</sup> A grade of C or better is required for all CEPY courses.

| First Year           |   |           |
|----------------------|---|-----------|
| Semester 1           |   |           |
|                      |   | Credits   |
| CEPY 1120G           | Human Growth and Behavior                         | 3         |
| CEPY 2110            | Learning in the Classroom                         | 3         |
| CEPY 2120            | The Preschool Child                               | 3         |
| CEPY 2130            | Adolescence - School Setting                      | 3         |
| <b>Credits</b>       |   | <b>12</b> |
| Semester 2           |   |           |
| CEPY 2140            | Explorations of Counseling & Community Psychology | 3         |
| PSYC 1110G           | Introduction to Psychology                        | 3         |
| PSYC 2230            | Psychology of Adjustment                          | 3         |
| PSYC 2311            | A Study of Substance Abuse through Learning       | 3         |
| <b>Credits</b>       |   | <b>12</b> |
| <b>Total Credits</b> |   | <b>24</b> |

**Program Manager:** Kathleen O'Connor  
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## Digital Marketing & Advertising - Associate of Applied Science

The Digital Marketing and Advertising Associate Degree program equips students with the skills and knowledge necessary to thrive in the rapidly evolving field of online marketing. This comprehensive two-year program combines a solid foundation in marketing principles with specialized training in digital strategies, ensuring graduates are well-prepared for a variety of roles in the digital marketing and advertising industry.

Graduates of the Digital Marketing and Advertising Associate Degree program are prepared for a range of entry-level positions, including: Digital Marketing Specialist, Social Media Coordinator, Content Marketing Assistant, Digital Advertising Coordinator or Email Marketing Associate.

### 60 credits

The Associate of Applied Science in Digital Marketing and Advertising will prepare students for positions in advertising and marketing fields.

Students will have a working knowledge of design principles for print and digital media, illustrations, images, and videos 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 (p. 10)

| Prefix  | Title   | Credits   |
|---|---|-----------|
| <b>General Education</b>  |   |           |
| <i>Select one course from four of the following six content areas for a total of 12-14 credits <sup>1,2</sup></i>                                     |   |           |
| This degree requires courses from Areas I, III IV, and V; students do not need to take additional courses to complete General Education requirements. |   |           |
| <i>Area I: Communications</i>   |   |           |
| ENGL 1110G  | Composition I                                     | 4         |
| <i>Area III: Laboratory Sciences</i>  |   |           |
| Select one course from Area III: Laboratory Science <sup>2</sup>  |   |           |
| <i>Area IV: Social/Behavioral Sciences</i>  |   |           |
| Select one course from Area IV: Social /Behavior Sciences <sup>2</sup>  |   |           |
| <i>Area V: Humanities</i>   |   |           |
| Select one course from Area V: Humanities <sup>2</sup>  |   |           |
| <i>General Education Elective</i>   |   |           |
| COMM 1130G  | Public Speaking                                   | 3         |
| <i>Major Requirements</i>   |   |           |
| BCIS 1110   | Introduction to Information Systems               | 3         |
| or OECS 105   | Introduction to Information Technology            |           |
| BMGT 138  | Advertising                                       | 3         |
| BMGT 216  | Business Math                                     | 3         |
| or OETS 118   | Mathematics for Technicians                       |           |
| BUSA 1110   | Intro to Business                                 | 3         |
| FDMA 1120   | Desktop Publishing                                | 3         |
| FDMA 1220   | Introduction to Digital Video Editing             | 3         |
| FDMA 1360   | Web Design I                                      | 3         |
| FDMA 1515   | Introduction to Digital Image Editing - Photoshop | 3         |
| FDMA 1535   | Introduction to Illustrator                       | 3         |
| FDMA 1630   | Principles of Design                              | 3         |
| MKTG 2110   | Principles of Marketing                           | 3         |
| <i>Select a minimum of 10 credits from the following:</i>   |   |           |
| FDMA, BMGT, MKTG, BLAW or OECS  |   | 10        |
| <b>Total Credits</b>  |   | <b>60</b> |

<sup>1</sup> Each course selected must be from a different area and students cannot take multiple courses in the same area.

<sup>2</sup> See the General Education (p. 10) 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. 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.

### First Year

| Fall           |   | Credits   |
|----------------|---|-----------|
| BCIS 1110      | Introduction to Information Systems               | 3         |
| BMGT 216       | Business Math                                     | 3         |
| BUSA 1110      | Intro to Business                                 | 3         |
| ENGL 1110G     | Composition I                                     | 4         |
| FDMA 1515      | Introduction to Digital Image Editing - Photoshop | 3         |
| <b>Credits</b> |   | <b>16</b> |

### Spring

|  |                             |           |
|--|-----------------------------|-----------|
| COMM 1130G   | Public Speaking             | 3         |
| FDMA 1120  | Desktop Publishing          | 3         |
| FDMA 1535  | Introduction to Illustrator | 3         |
| Select one course from Area III: Laboratory Science <sup>1</sup> |                             | 4         |
| FDMA/ARTS/BMGT/MKTG/OECS Elective                                |                             | 3         |
| <b>Credits</b>   |                             | <b>16</b> |

### Second Year

| Fall   |                                       | Credits   |
|--|---------------------------------------|-----------|
| FDMA 1220  | Introduction to Digital Video Editing | 3         |
| FDMA 1360  | Web Design I                          | 3         |
| FDMA 1630  | Principles of Design                  | 3         |
| MKTG 2110  | Principles of Marketing               | 3         |
| Select one course from Area IV: Social /Behavior Sciences <sup>1</sup> |                                       | 3         |
| <b>Credits</b>   |                                       | <b>15</b> |

### Spring

|  |             |           |
|--|-------------|-----------|
| BMGT 138   | Advertising | 3         |
| Select one course from Area V: Humanities <sup>1</sup> |             | 3         |
| FDMA/ARTS/BMGT/MKTG/OECS Elective                      |             | 3         |
| FDMA/ARTS/BMGT/MKTG/OECS Elective                      |             | 3         |
| FDMA/ARTS/BMGT/MKTG/OECS Elective                      |             | 3         |
| <b>Credits</b>   |             | <b>15</b> |
| <b>Total Credits</b>                                   |             | <b>62</b> |

<sup>1</sup> See the General Education (p. 10) section of the catalog for a full list of courses

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## Drafting and Graphics Technology - Certificate of Completion

The Drafting & Graphics Technology Program with Computer-Aided Design (CAD) is a comprehensive educational initiative designed to equip students with the essential skills and knowledge required for a successful career in the dynamic fields of drafting, design, and graphics. This program integrates traditional drafting principles with cutting-edge CAD technology to empower students with the tools needed to thrive in industries such as architecture, engineering, manufacturing, and more.

### 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   |
|----------------------|---|-----------|
| <b>Requirements</b>  |   |           |
| 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 180             | Residential Drafting                      | 3         |
| DRFT 181             | Commercial Drafting                       | 3         |
| DRFT 242             | Roadway Development Drafting              | 3         |
| DRFT 276             | Computer Rendering and Animation I        | 3         |
| OETS 118             | Mathematics for Technicians               | 3         |
| <b>Total Credits</b> |   | <b>30</b> |

## A Suggested Plan of Study

### First Year

| Fall           |                                    | Credits   |
|----------------|------------------------------------|-----------|
| DRFT 109       | Computer Drafting Fundamentals     | 3         |
| DRFT 143       | Civil Drafting Fundamentals        | 3         |
| DRFT 114       | Introduction to Solid Modeling     | 3         |
| DRFT 276       | Computer Rendering and Animation I | 3         |
| OETS 118       | Mathematics for Technicians        | 3         |
| <b>Credits</b> |                                    | <b>15</b> |

### Spring

|                      |   |           |
|----------------------|---|-----------|
| DRFT 135             | Electronics Drafting I                    | 3         |
| DRFT 151             | Construction Principles and Print Reading | 3         |
| DRFT 180             | Residential Drafting                      | 3         |
| DRFT 181             | Commercial Drafting                       | 3         |
| DRFT 242             | Roadway Development Drafting              | 3         |
| <b>Credits</b>       |   | <b>15</b> |
| <b>Total Credits</b> |   | <b>30</b> |

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## Early Childhood Education

### Associate of Early Childhood Education

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.

*NOTE: This program requires that students take and pass a security background check in order to take the field experience and practicum courses. Past criminal violations may prevent a student from completing a degree in the education program.*

### **Certificate of Early Childhood Education**

This certificate is awarded for those who have completed all the Early Childhood Courses and wish to obtain entrance into a TEP or Teacher Education Program at NMSU Las Cruces or any University in the state of New Mexico. This Certificate is embedded in the Early Childhood Education Associate Degree.

*NOTE: This program requires that students take and pass a security background check in order to take the field experience and practicum courses. Past criminal violations may prevent a student from completing a degree in the education program.*

### **Child Development Certificate**

This Child Development Certificate indicates completion of the basic early childhood courses that allow a student to meet the professional requirements for individuals already working in a classroom setting with infants and toddlers or preschool children. This professional certification serves as an equivalent of a state awarded CDC certificate issued by the New Mexico Office of Child Development. For more information, contact the New Mexico Early Childhood Education and Care Development at (505) 277-7900.

[Early Childhood Education - Associate Degree \(p. 136\)](#)

[Early Childhood Education - Certificate \(p. 139\)](#)

### **Child Development - Certificate**

### **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. May be repeated up to 3 credits.

#### **Learning Outcomes**

1. Incorporate understanding of developmental stages, processes, and theories of growth, development, and learning into developmentally appropriate practice. A.one
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.two
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.three
5. Demonstrate knowledge of the similarities between children who are developing typically and those with diverse abilities. A.four
6. Demonstrate knowledge of the many functions that language serves in the cognitive, social, and emotional aspects of development in the formative years. A.seven

7. Demonstrate knowledge of the developmental sequence of language and literacy, including the influence of culture and home factors. A.eight
8. Demonstrate knowledge of how children acquire and use verbal, non-verbal, and alternative means of communication. A.nine
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.ten 1
10. Use appropriate guidance to support the development of self-regulatory capacities in young children. A.eleven

### **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. May be repeated up to 2 credits.

#### **Learning Outcomes**

1. Recognize and respond to each child's physical health, intellectual and emotional well-being, and nutritional and safety needs. B.one
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.two
3. Use appropriate health appraisal and management procedures and makes referrals when necessary. B.three
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.four
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.five
6. Provide a consistent daily schedule for rest/sleep, as developmentally appropriate. B.six
7. Implement health care and educational activities for children and families based on health and a.nutritional information that is responsive to diverse cultures. B.seven
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.eight

### **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. May be repeated up to 3 credits.

**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.six
2. Demonstrate knowledge of the many functions that language serves in the cognitive, social, and emotional aspects of development in the formative years. A.seven
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.ten
4. Use appropriate guidance to support the development of self-regulatory capacities in young children. A.eleven
5. Recognize and respond to each child's physical health, intellectual and emotional well-being, and nutritional and safety needs. B.one
6. Demonstrate knowledge and skill in building positive, reciprocal relationships with families. C.one
7. Demonstrate knowledge of and respect for variations across cultures, in terms of family strengths, expectations, values, and child-rearing practices. C.four
8. Demonstrate the ability to incorporate the families' desires and goals for their children into classroom or intervention strategies. C.seven
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.three 1
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.seven 1
11. Demonstrate knowledge of assessment techniques, interpretation of assessment information in the application of this
4. Demonstrate understanding of the influences of environmental factors, cultural/linguistic differences, and diverse ways of learning on assessment outcomes. F.four
5. 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.five
6. Articulate an understanding of the distinctions and definitions of assessment concepts (e.g., screening, diagnostic assessment, standardized, testing, accountability assessment). F.six
7. 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.seven
8. 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.eight
9. Demonstrate knowledge of assessment techniques, interpretation of assessment information in the Application of this data to curriculum development and/or intervention planning. F.nine 1
10. Demonstrate knowledge of a variety of techniques and procedures to evaluate and modify program goals for young children and their families. F.ten 1
11. Demonstrate knowledge and use of program evaluation to ensure comprehensive quality of the total Environment for children, families, and the community. F.eleven 1
12. Use both self and collaborative evaluations as part of ongoing program evaluations. F.twelve

**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. May be repeated up to 3 credits.

**Prerequisite:** 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.one
2. Demonstrate knowledge of maintaining appropriate records of children's development and behavior that safeguard confidentiality and privacy. F.two
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.three

**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 establish collaborative relationships with families in early childhood settings is discussed. Families' goals and desires for their children will be supported through culturally responsive strategies. May be repeated up to 3 credits.

**Prerequisite:** 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.one
2. Articulate an understanding of a safe and welcoming environment for families and community members. C.two
3. Develop and maintain ongoing contact with families through a variety of communication strategies. C.three
4. Demonstrate knowledge of and respect for variations across cultures, in terms of family strengths, expectations, values, and child-rearing practices. C.four
5. Articulate understanding of the complexity and dynamics of family systems. C.five
6. Demonstrate understanding of the importance of families as the primary educator of their child. C.six
7. Involve families and community members in contributing to the learning environment. C.nine
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.eleven

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.twelve 1
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.thirteen 1
11. Demonstrate effective written and oral communication skills when working with children, families, and early care, education, and family support professionals. E.fourteen 1
12. Demonstrate a commitment to leadership and advocacy for excellence in programs and services for young children and their families. G.six

### **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. May be repeated up to 2 credits.

#### **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.four
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.eleven
3. Use both self and collaborative evaluations as part of ongoing program evaluations. F.twelve
4. Demonstrate ability to adhere to early childhood professional codes of ethical conduct and issues of confidentiality. G.one
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.two
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.three
7. Demonstrate critical reflection of one's own professional and educational practices from community, state, national, and global perspectives. G.four
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.five
9. Demonstrate knowledge in technology resources to engage in ongoing professional development. G.seven

### **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. May be repeated up to 3 credits.

**Prerequisite:** 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.seven
2. Demonstrate knowledge of the developmental sequence of language and literacy, including the influence of culture and home factors. A.eight
3. Demonstrate knowledge of how children acquire and use verbal, non-verbal, and alternative means of communication. A.nine
4. Develop partnerships with family members to promote early literacy in the home. C.eight
5. Establish partnerships with community members in promoting literacy. C.ten
6. Demonstrate knowledge of the reading and writing components of emergent literacy at each developmental level. D.four
7. Provide and use anti-bias materials/literature and experiences in all content areas of the curriculum. D.seven
8. Create and manage a literacy-rich environment that is responsive to each child's unique path of development. E.nine
9. Use a variety of strategies during adult-child and child-child interactions and facilitate communication and dialogue of expressive language and thought. E.ten 1
10. Demonstrate a variety of developmentally appropriate instructional strategies that facilitate the development of literacy skills. E.eleven

### **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. May be repeated up to 3 credits.

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

**Corequisite:** ECED 2121.

#### **Learning Outcomes**

1. Use appropriate guidance to support the development of self-regulatory capacities in young children. A.eleven
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 years of age. D.one
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.two

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.six
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.one
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.two
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.four
8. Demonstrate understanding that each child's creative expression is unique and can be encouraged through diverse ways, including creative play. E.five
9. Plan blocks of uninterrupted time for children to persist at self-chosen activities, both indoors and outdoors. E.six 1
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.seven 1
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.eight 1
12. Demonstrate a variety of developmentally appropriate instructional strategies that facilitate the development of emergent literacy skills. E.eleven 1
13. Demonstrate knowledge of assessment techniques, interpretation of assessment information in the application of this data to curriculum development of intervention planning. F.

**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. May be repeated up to 2 credits.

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

**Corequisite:** 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.five
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.five
3. Provides and uses anti-bias materials and literature, and experiences in all content areas of the curriculum. D.seven
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.four
5. Demonstrate understanding that each child's creative expression is unique and can be encouraged through diverse ways, including creative play. E.five
6. Plan blocks of uninterrupted time for children to persist at self-chosen activities, both indoors and outdoors. E.six
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.seven
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.eight

**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. May be repeated up to 3 credits.

**Prerequisite:** ECED 1110, ECED 2120 and ECED 2121 (ENGL 1110G or ENGL 1110H or ENGL 1110M).

**Corequisite:** ECED 2131.

**Learning Outcomes**

1. Use appropriate guidance to support the development of self-regulatory capacities in young children. A.Eleven
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.Two
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.Three
4. Demonstrate knowledge of the language, reading and writing components of emergent literacy at each developmental level. D.Four
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.Six

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.One
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.Two
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.Four
9. Demonstrate understanding that each child's creative expression is unique and can be encouraged through diverse ways, including creative play. E.Five 1
10. Plan blocks of uninterrupted time for children to persist at self-chosen activities, both indoors and outdoors. E.Six 1
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.Seven 1
12. Demonstrate knowledge of developmentally appropriate uses of technology, including assistive technology. E.Twelve 1
13. Demonstrate knowledge of assessment techniques, interpretation of assessment information in the application of this data to curriculum development of intervention planning. F.Nine

**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. May be repeated up to 2 credits.

**Prerequisite:** ECED 1110 (ENGL 1110G or ENGL 1110H or ENGL 1110M), ECED 2120, and ECED 2121.

**Corequisite:** ECED 2130.

**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.Five
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.Five
3. Provides and uses anti-bias materials and literature, and experiences in all content areas of the curriculum. D.Seven
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.Four
5. Demonstrate understanding that each child's creative expression is unique and can be encouraged through diverse ways, including creative play. E.Five

6. Plan blocks of uninterrupted time for children to persist at self-chosen activities, both indoors and outdoors. E.Six
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.Seven
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.Eight

**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. May be repeated up to 3 credits.

**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. May be repeated up to 2 credits.

**Corequisite:** 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. May be repeated up to 3 credits.

#### **Learning Outcomes**

1. Develop a comprehensive program philosophy.
2. Demonstrate the ability to develop systems that are effective for quality program operation.
3. Create a program budget and understand the Income and Expense sides and what affects each part.
4. Model best practices that integrate various leadership styles.

### **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. May be repeated up to 3 credits.

**Corequisite:** 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 technologies which may be used in an early childhood setting.
4. 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

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## **Early Childhood Education - Associate in Early Childhood Education**

### **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. Practicum Courses ECED 2121 and 2131 require a Criminal Background Clearance in order to complete 60 hours of practicum per course. 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.

- Students must complete all technical requirement courses as well as the following courses with a grade of C or better.

| Prefix     | Title  | Credits |
|------------|--|---------|
| CEPY 1120G | Human Growth and Behavior                    | 3       |
| ENGL 1110G | Composition I                                | 4       |
| ENGL 2221G | Writing in the Humanities and Social Science | 3       |
| MATH 1215  | Intermediate Algebra                         | 3       |
| MATH 1134  | Fundamentals of Elementary Mathematics I     | 3       |
| MATH 2134G | Fundamentals of Elementary Math II           | 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.
- 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.

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.

| Prefix  | Title   | Credits |
|---|---|---------|
| <b>General Education</b>  |   |         |
| <i>Area I: Communications</i>   |   |         |
| <i>English Composition - Level 1</i>  |   |         |
| ENGL 1110G  | Composition I   | 4       |
| <i>English Composition - Level 2</i>  |   |         |
| ENGL 2221G  | Writing in the Humanities and Social Science  | 3       |
| <i>Oral Communication</i>   |   |         |
| COMM 1130G<br>or COMM 1115G   | Public Speaking<br>Introduction to Communication  | 3       |
| <i>Area II: Mathematics</i>   |   |         |
| MATH 2134G  | Fundamentals of Elementary Math II <sup>1</sup>   | 3       |
| <i>Area III: Laboratory Sciences</i>  |   |         |
| Choose two courses from two different departments from the following recommended course list (8 credits): |   |         |
| ASTR 1120G<br>or ASTR 1115G   | The Planets Lecture & Laboratory<br>Introduction to Astronomy Lecture & Laboratory  |         |
| BIOL 1120G<br>& BIOL 1120L  | Human Biology<br>and Human Biology Laboratory   |         |
| BIOL 1190G  | Contemporary Problems in Biology  |         |
| BIOL 2110G<br>& BIOL 2110L  | Principles of Biology: Cellular and Molecular Biology<br>and Principles of Biology: Cellular and Molecular Biology Laboratory |         |
| CHEM 1120G  | Introduction to Chemistry Lecture and Laboratory (non majors)   |         |

|  |  |           |
|--|--|-----------|
| CHEM 1215G                                 | General Chemistry I Lecture and Laboratory for STEM Majors                       |           |
| ENVS 1110G                                 | Environmental Science I  |           |
| GEOL 1110G                                 | Physical Geology   |           |
| GEOG 1110G                                 | Physical Geography   |           |
| PHYS 1115G                                 | Survey of Physics with Lab   |           |
| <i>Area IV: Social/Behavioral Sciences</i> |  |           |
| CEPY 1120G                                 | Human Growth and Behavior  | 3         |
| <i>Area V: Humanities</i>                  |  |           |
| Choose one of the following 3              |  |           |
| HIST 1130G                                 | World History I  |           |
| HIST 1140G                                 | World History II   |           |
| HIST 1150G                                 | Western Civilization I   |           |
| HIST 1160G                                 | Western Civilization II  |           |
| <i>Area VI: Creative and Fine Arts</i>     |  |           |
| Choose one from the following: 3           |  |           |
| ARTH 1115G                                 | Orientation in Art   |           |
| MUSC 1130G<br>or MUSC 1110G                | Music Appreciation: Western Music<br>Music Appreciation: Jazz                    |           |
| THEA 1110G                                 | Introduction to Theatre  |           |
| <i>General Education Elective</i>          |  |           |
| HIST 1110G<br>or HIST 1120G                | United States History I<br>United States History II                              | 3         |
| <b>Core Requirements</b>                   |  |           |
| MATH 1134                                  | Fundamentals of Elementary Mathematics I   | 3         |
| Choose one from the following: 3           |  |           |
| ANTH 1115G                                 | Introduction to Anthropology   |           |
| ECON 2110G                                 | Macroeconomic Principles   |           |
| ECON 2120G                                 | Principles of Microeconomics   |           |
| GEOG 1120G<br>or GEOG 1130G                | World Regional Geography<br>Human Geography                                      |           |
| POLS 1120G<br>or POLS 1110G                | American National Government<br>Introduction to Political Science                |           |
| SOCI 1110G                                 | Introduction to Sociology  |           |
| <b>Major Requirements</b>                  |  |           |
| ECED 1110                                  | Child Growth, Development, and Learning  | 3         |
| ECED 1115                                  | Health, Safety, and Nutrition  | 2         |
| ECED 1120                                  | Guiding Young Children   | 3         |
| ECED 1125                                  | Assessment of Children and Evaluation of Programs                                | 3         |
| ECED 1130                                  | Family and Community Collaboration   | 3         |
| ECED 2110                                  | Professionalism  | 2         |
| ECED 2115                                  | Introduction to Language, Literacy, and Reading                                  | 3         |
| 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 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         |
| <b>Total Credits</b>                       |  | <b>68</b> |

<sup>1</sup> 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.

### First Year

| Fall                           |  | Credits   |
|--------------------------------|--|-----------|
| ENGL 1110G                     | Composition I                            | 4         |
| MATH 1134                      | Fundamentals of Elementary Mathematics I | 3         |
| CEPY 1120G                     | Human Growth and Behavior                | 3         |
| Choose one from the following: |  | 3         |
| ARTH 1115G                     | Orientation in Art                       |           |
| MUSC 1130G                     | Music Appreciation: Western Music        |           |
| or MUSC 1110G                  | or Music Appreciation: Jazz              |           |
| THEA 1110G                     | Introduction to Theatre                  |           |
| <b>Credits</b>                 |  | <b>13</b> |

| Spring         |   | Credits   |
|----------------|---|-----------|
| ENGL 2221G     | Writing in the Humanities and Social Science    | 3         |
| MATH 2134G     | Fundamentals of Elementary Math II <sup>1</sup> | 3         |
| HIST 1130G     | World History I                                 | 3         |
| or HIST 1140G  | or World History II                             |           |
| ECED 1115      | Health, Safety, and Nutrition                   | 2         |
| ECED 1110      | Child Growth, Development, and Learning         | 3         |
| <b>Credits</b> |   | <b>14</b> |

| Summer         |   | Credits  |
|----------------|---|----------|
| ECED 2115      | Introduction to Language, Literacy, and Reading | 3        |
| ECED 1120      | Guiding Young Children                          | 3        |
| <b>Credits</b> |   | <b>6</b> |

### Second Year

| Fall   |  | Credits   |
|--|--|-----------|
| COMM 1130G                                       | Public Speaking  | 3         |
| or COMM 1115G                                    | or Introduction to Communication   |           |
| Area III: Laboratory Science Course <sup>2</sup> |  | 4         |
| HIST 1110G                                       | United States History I  | 3         |
| or HIST 1120G                                    | or United States History II  |           |
| 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         |
| <b>Credits</b>                                   |  | <b>15</b> |

| Spring  |  | Credits |
|---|--|---------|
| An additional Area IV: Social/Behavioral Sciences Course <sup>3</sup> |  | 3       |
| Area III: Laboratory Science Course <sup>2</sup>                      |  | 4       |
| 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         |
| ECED 1125            | Assessment of Children and Evaluation of Programs                                | 3         |
| <b>Credits</b>       |  | <b>15</b> |
| <b>Summer</b>        |  |           |
| ECED 1130            | Family and Community Collaboration   | 3         |
| ECED 2110            | Professionalism  | 2         |
| <b>Credits</b>       |  | <b>5</b>  |
| <b>Total Credits</b> |  | <b>68</b> |

<sup>1</sup> MATH 1220G College Algebra 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

<sup>2</sup> See the General Education (p. 10) section of the catalog for a full list of courses.

<sup>3</sup> Choose one from the following:

- ANTH 1115G Introduction to Anthropology
- ECON 2110G Macroeconomic Principles
- ECON 2120G Principles of Microeconomics
- GEOG 1120G World Regional Geography or GEOG 1130G Human Geography
- POLS 1120G American National Government or POLS 1110G Introduction to Political Science
- SOCI 1110G Introduction to Sociology

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## Child Development - Certificate of Completion

The Child Development Certificate of Completion at NMSU Grants is aligned to support the New Mexico Child Development Certificate (CDC) offered by the New Mexico Office of Child Development. This certificate provides entry-level requirements for educators who are already working in a classroom setting with infants and toddlers or preschool children.

The professional certification additionally requires a state awarded certificate issued by the New Mexico Office of Child Development upon completion of course requirements. For more information, contact the Office of Child Development at (505) 827-7946 or 1-800-832-1321. The Child Development Certificate exceeds the requirements of the New Mexico State CDA, and includes four of the courses required for a Certificate of Early Childhood Education and an Associate Degree in Early Childhood Education.

| Prefix               | Title   | Credits   |
|----------------------|---|-----------|
| ENGL 1110G           | Composition I                                     | 4         |
| ECED 1110            | Child Growth, Development, and Learning           | 3         |
| ECED 1120            | Guiding Young Children                            | 3         |
| ECED 1125            | Assessment of Children and Evaluation of Programs | 3         |
| ECED 1130            | Family and Community Collaboration                | 3         |
| <b>Total Credits</b> |   | <b>16</b> |

| First Year           |   |           |
|----------------------|---|-----------|
| Fall                 |   | Credits   |
| ENGL 1110G           | Composition I                                     | 4         |
| ECED 1110            | Child Growth, Development, and Learning           | 3         |
| ECED 1120            | Guiding Young Children                            | 3         |
| <b>Credits</b>       |   | <b>10</b> |
| Spring               |   |           |
| ECED 1125            | Assessment of Children and Evaluation of Programs | 3         |
| ECED 1130            | Family and Community Collaboration                | 3         |
| <b>Credits</b>       |   | <b>6</b>  |
| <b>Total Credits</b> |   | <b>16</b> |

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## 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. Practicum Courses ECED 2121 and 2131 require a Criminal Background Clearance in order to complete 60 hours of practicum per course. 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.

| Prefix                               | Title                                   | Credits |
|--------------------------------------|---|---------|
| <b>General Education Requirement</b> |   |         |
| ENGL 1110G                           | Composition I                           | 4       |
| <b>Early Childhood Requirements</b>  |   |         |
| ECED 1110                            | Child Growth, Development, and Learning | 3       |

|                      |  |           |
|----------------------|--|-----------|
| ECED 1115            | Health, Safety, and Nutrition  | 2         |
| ECED 1125            | Assessment of Children and Evaluation of Programs                                | 3         |
| ECED 1120            | Guiding Young Children   | 3         |
| ECED 1130            | Family and Community Collaboration   | 3         |
| ECED 2110            | Professionalism  | 2         |
| ECED 2115            | Introduction to Language, Literacy, and Reading                                  | 3         |
| 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 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         |
| <b>Total Credits</b> |  | <b>33</b> |

### 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.

| First Year           |  |           |
|----------------------|--|-----------|
| Fall                 |  | Credits   |
| ENGL 1110G           | Composition I  | 4         |
| ECED 1110            | Child Growth, Development, and Learning  | 3         |
| ECED 1120            | Guiding Young Children   | 3         |
| ECED 2110            | Professionalism  | 2         |
| <b>Credits</b>       |  | <b>12</b> |
| 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         |
| <b>Credits</b>       |  | <b>13</b> |
| Second Year          |  |           |
| Fall                 |  | Credits   |
| 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         |
| <b>Credits</b>       |  | <b>8</b>  |
| <b>Total Credits</b> |  | <b>33</b> |

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## Education - Associate in Education

The Associate degree in Education program at NMSU Grants Campus 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 Education programs provides the courses required for entry into the Teacher Education Program (TEP) at NMSU.

\*Education (Elementary Education) – *Advisement can focus on a specialization such as Science, Language Arts, Math, Social Studies, or Special Education depending upon individual interests.*

### 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 (<https://catalogs.nmsu.edu/nmsu/health-education-social-transformation/>) 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:

| Prefix     | Title  | Credits |
|------------|--|---------|
| ENGL 1110G | Composition I                                | 4       |
| ENGL 2221G | Writing in the Humanities and Social Science | 3       |
| MATH 1134  | Fundamentals of Elementary Mathematics I     | 3       |
| MATH 2134G | Fundamentals of Elementary Math II           | 3       |
| MATH 1215  | Intermediate Algebra                         | 3       |

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 (p. 10) courses.

| Prefix   | Title   | Credits |
|--|---|---------|
| <b>General Education</b>   |   |         |
| <i>Area I: Communications</i>  |   |         |
| <i>English Composition - Level 1</i>                                   |   |         |
| ENGL 1110G   | Composition I   | 4       |
| <i>English Composition - Level 2</i>                                   |   |         |
| ENGL 2221G   | Writing in the Humanities and Social Science  | 3       |
| <i>Oral Communication</i>  |   |         |
| COMM 1115G<br>or COMM 1130G  | Introduction to Communication<br>Public Speaking  | 3       |
| <i>Area II: Mathematics</i>  |   |         |
| MATH 2134G   | Fundamentals of Elementary Math II <sup>1</sup>   | 3       |
| <i>Area III/IV: Laboratory Sciences and Social/Behavioral Sciences</i> |   |         |
| CEPY 1120G   | Human Growth and Behavior   | 3       |
| Select two 4 credit courses, including lab, from two areas.            |   |         |
| ASTR 1115G<br>or ASTR 1120G  | Introduction to Astronomy Lecture & Laboratory<br>The Planets Lecture & Laboratory  | 3       |
| BIOL 1120G<br>& BIOL 1120L   | Human Biology<br>and Human Biology Laboratory   | 3       |
| BIOL 1190G   | Contemporary Problems in Biology  | 3       |
| BIOL 2110G<br>& BIOL 2110L   | Principles of Biology: Cellular and Molecular Biology<br>and Principles of Biology: Cellular and Molecular Biology Laboratory | 3       |
| CHEM 1120G   | Introduction to Chemistry Lecture and Laboratory (non majors)   | 3       |
| CHEM 1215G   | General Chemistry I Lecture and Laboratory for STEM Majors  | 3       |
| ENVS 1110G   | Environmental Science I   | 3       |
| GEOL 1110G   | Physical Geology  | 3       |
| GEOG 1110G   | Physical Geography  | 3       |
| PHYS 1115G   | Survey of Physics with Lab  | 3       |
| <i>Area V: Humanities</i>  |   |         |
| HIST 1130G<br>or HIST 1140G  | World History I<br>World History II   | 3       |
| <i>Area VI: Creative and Fine Arts</i>                                 |   |         |
| Select one from the following:   |   |         |
| ARTH 1115G   | Orientation in Art  | 3       |
| MUSC 1130G   | Music Appreciation: Western Music   | 3       |
| THEA 1110G   | Introduction to Theatre   | 3       |
| <i>General Education Elective</i>                                      |   |         |
| LING 2110G   | Introduction to the Study of Language and Linguistics   | 3       |
| <b>Core Requirements</b>   |   |         |
| HIST 1110G<br>or HIST 1120G  | United States History I<br>United States History II   | 3       |
| MATH 1215  | Intermediate Algebra  | 3       |
| MATH 1134  | Fundamentals of Elementary Mathematics I  | 3       |

|  |   |
|--|---|
| Select one course from the following:  | 3 |
| GEOG 1120G World Regional Geography<br>or GEOG 1130G Human Geography                       |   |
| POLS 1110G Introduction to Political Science<br>or POLS 1120G American National Government |   |

|   |           |
|---|-----------|
| <b>Major Requirements</b>                               |           |
| <i>Professional Education Core</i>                      |           |
| BLED 2110 Bilingual Methods                             | 3         |
| BLED 1110 Introduction in Bilingual Education/ESL       | 3         |
| CEPY 2110 Learning in the Classroom                     | 3         |
| EDLT 2110 Integrating Technology with Teaching          | 3         |
| <i>Elective</i>   | 3         |
| Any Teaching Field course - See an Advisor <sup>2</sup> |           |
| <b>Total Credits</b>                                    | <b>60</b> |

<sup>1</sup> 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.

<sup>2</sup> Consult with the Education Program Manager to select an elective for your teaching field.

## 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.

|  |           |
|--|-----------|
| <b>First Year</b>                            |           |
| <b>Fall</b>                                  |           |
| ENGL 1110G Composition I                     | 4         |
| MATH 1215 Intermediate Algebra               | 3         |
| CEPY 1120G Human Growth and Behavior         | 3         |
| Choose one from the following:               | 3         |
| ARTH 1115G Orientation in Art                |           |
| MUSC 1130G Music Appreciation: Western Music |           |
| THEA 1110G Introduction to Theatre           |           |
| <b>Credits</b>                               | <b>13</b> |

|  |           |
|--|-----------|
| <b>Spring</b>  |           |
| ENGL 2221G Writing in the Humanities and Social Science                      | 3         |
| MATH 1134 Fundamentals of Elementary Mathematics I                           | 3         |
| CEPY 2110 Learning in the Classroom  | 3         |
| COMM 1115G Introduction to Communication<br>or COMM 1130G or Public Speaking | 3         |
| LING 2110G Introduction to the Study of Language and Linguistics             | 3         |
| <b>Credits</b>   | <b>15</b> |

|   |   |
|---|---|
| <b>Second Year</b>  |   |
| <b>Fall</b>   |   |
| HIST 1130G World History I<br>or HIST 1140G or World History II | 3 |
| MATH 2134G Fundamentals of Elementary Math II                   | 3 |
| BLED 1110 Introduction in Bilingual Education/ESL               | 3 |
| Choose one from the following:                                  | 3 |

|  |   |
|--|---|
| GEOG 1120G World Regional Geography              |   |
| GEOG 1130G Human Geography                       |   |
| POLS 1110G Introduction to Political Science     |   |
| POLS 1120G American National Government          |   |
| Area III: Laboratory Science Course <sup>1</sup> | 4 |

|   |           |
|---|-----------|
| <b>Credits</b>  | <b>16</b> |
| <b>Spring</b>   |           |
| HIST 1110G United States History I<br>or HIST 1120G or United States History II | 3         |
| Area III: Laboratory Science Course <sup>1</sup>                                | 4         |
| BLED 2110 Bilingual Methods   | 3         |
| EDLT 2110 Integrating Technology with Teaching                                  | 3         |
| Elective Course (See advisor for options)                                       | 3         |
| <b>Credits</b>  | <b>16</b> |
| <b>Total Credits</b>  | <b>60</b> |

<sup>1</sup> See the General Education (p. 10) section of this catalog for a full list of courses.

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## Electrical Systems - Certificate of Completion

The Electrical Systems Certificate Program is designed to equip individuals with the essential knowledge and skills needed to excel in the dynamic field of electrical systems. This program covers a wide range of topics, providing a solid foundation in electrical theory, practical applications, and safety protocols. Participants will gain hands-on experience, enabling them to confidently navigate the complexities of electrical systems in various industries. Upon completion of the Electrical Systems Certificate Program, graduates will be well-prepared for entry-level positions in various industries, including residential and commercial electrical services, manufacturing, energy production, and maintenance.

Coursework for the certificate program leads to the Associate in Applied Studies.

### 29 Credits

The Electrical Systems Certificate of Completion prepares and trains students to acquire the electrical and electronic skills needed to be more competitive in the electrical field. The certificate is designed to provide related training in the electrical trade that will give students the proper coursework in Safety, National Electrical Code, Equipment, and knowledge of the trade. Coursework for the certificate program also leads to the Associate in Applied Studies.

| Prefix   | Title                                       | Credits |
|----------|---|---------|
| TCEN 101 | Energy for the Next Generation              | 3       |
| OEET 110 | Basic Electricity and Electronics           | 4       |
| OEET 120 | Basic Motor Controls                        | 5       |
| OEET 205 | National Electric Code                      | 3       |
| TCEN 121 | Basic Electrical Principles II, AC Circuits | 4       |
| BCT 123  | Residential Wiring I                        | 3       |
| BCT 223  | Residential Wiring II                       | 3       |
| OETS 118 | Mathematics for Technicians                 | 3       |

|                      |  |           |
|----------------------|--|-----------|
| OETS 102             | Career Readiness Certification Preparation | 1         |
| <b>Total Credits</b> |  | <b>29</b> |

### A suggest Plan of Study

#### First Year

| Fall     |                                   | Credits   |
|----------|-----------------------------------|-----------|
| TCEN 101 | Energy for the Next Generation    | 3         |
| OEET 110 | Basic Electricity and Electronics | 4         |
| OETS 118 | Mathematics for Technicians       | 3         |
| BCT 123  | Residential Wiring I              | 3         |
|          | <b>Credits</b>                    | <b>13</b> |

#### Spring

|          |   |           |
|----------|---|-----------|
| OEET 120 | Basic Motor Controls                        | 5         |
| OEET 205 | National Electric Code                      | 3         |
| OETS 102 | Career Readiness Certification Preparation  | 1         |
| BCT 223  | Residential Wiring II                       | 3         |
| TCEN 121 | Basic Electrical Principles II, AC Circuits | 4         |
|          | <b>Credits</b>                              | <b>16</b> |
|          | <b>Total Credits</b>                        | <b>29</b> |

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## Emergency Medical Services (EMS)

The Emergency Medical Service (EMS) Program at NMSU Grants is designed to provide comprehensive training and education for individuals seeking a career in emergency medical services. Our program is committed to equipping students with the knowledge, skills, and practical experience necessary to excel in various roles within the healthcare field, particularly in emergency medical response.

Emergency Medical Services (EMS) - Basic Certificate (p. 145)

Emergency Medical Services (EMS) Intermediate - Associate of Applied Science (p. 145)

### 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

#### 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 201. Human Systems, Pathophysiology and Development  
3 Credits (3)**

A course which provides a survey of human anatomy and physiology, pathological processes, and life span development. Emphasis is placed on interrelationships among organ systems and deviation from homeostasis. Restricted to: OEMS, OEEM majors. Restricted to Community Colleges campuses only. May be repeated up to 3 credits.

**Prerequisite:** OEEM 120, OEEM 120 L.

**Learning Outcomes**

1. Explain the general terminology, anatomy, and physiology of the human body.
2. Apply principles of normal anatomy and physiology of the human body to the pathophysiologic processes of common health problems.
3. Associate pathophysiology to patient assessment and treatment.
4. Describe key physiologic and psychosocial changes that occur in different age groups.

**OEEM 202. Airway and Respiratory Emergencies  
2 Credits (2)**

A course which focuses on the anatomy, physiology, and pathophysiology of the respiratory system. Integrates the knowledge to develop and implement a comprehensive treatment plan, with the goal of assuring a patent airway, adequate mechanical ventilation and respiration for patients of all ages. Requires a "C" or better to pass. Restricted to: OEEM majors. Restricted to Community Colleges campuses only. May be repeated up to 2 credits.

**Prerequisite:** OEEM 201, OEEM 206, OEEM 207.

**Corequisite:** OEEM 202 L.

**Learning Outcomes**

1. Demonstrates an understanding of the mechanics, neurological control and diseases impacting respiration and ventilation.
2. Demonstrates an understanding of various methods, tools and techniques to assure a patent airway, ventilation and respiration.
3. Integrate assessment findings with emergency pharmacology and relevant tools to create and implement treatment plans for patients with medical or trauma related respiratory complaints.

**OEEM 202 L. Airway and Respiratory Emergencies  
1 Credit (3P)**

A course which focuses on the anatomy, physiology, and pathophysiology of the respiratory system. Integrates the knowledge to develop and implement a comprehensive treatment plan, with the goal of assuring a patent airway, adequate mechanical ventilation and respiration for patients of all ages. Requires a "C" or better to pass. Restricted to: OEEM majors. Restricted to Community Colleges campuses only. May be repeated up to 2 credits.

**Prerequisite:** OEEM 201, OEEM 206, OEEM 207.

**Corequisite:** OEEM 202.

**Learning Outcomes**

1. Appropriately utilizes various methods, tools and techniques to assure a patent airway, ventilation and respiration.
2. Integrates assessment findings with emergency pharmacology and relevant tools to implement treatment plans for patients with medical or trauma related respiratory complaints.
3. Act as an entry-level Paramedic team leader in an airway management, ventilation or respiratory simulation.

**OEEM 203. Paramedic Trauma Care  
2 Credits (2)**

A course which covers the mechanism of injury, pathophysiology, diagnosis, assessment, treatment and care of the trauma and

environmental emergency patient. Consent of instructor. Restricted to majors. Requires a C or better to pass. Restricted to: OEEM majors. Restricted to Community Colleges campuses only. May be repeated up to 2 credits.

**Prerequisite:** OEEM 201, OEEM 206, OEEM 207.

**Corequisite:** OEEM 203 L.

**Learning Outcomes**

1. Understands epidemiology, trauma scoring and destination decisions.
2. Formulates comprehensive and focused assessment strategies for minor, moderate and critically ill patients with bleeding; chest, abdominal, genitourinary, orthopedic, soft tissue, head, face, neck, spine, nervous system trauma.
3. Construct assessment and treatment plans for vulnerable trauma patient populations including the cognitively impaired, pregnant, pediatrics and geriatrics.
4. Understands the pathophysiology, assessment, management and treatment of environmental emergencies.
5. Understands the pathophysiology, assessment, management and treatment of the multisystem trauma patient.

**OEEM 203 L. Paramedic Trauma Care Lab  
1 Credit (3P)**

A practical course which covers the mechanism of injury, pathophysiology, diagnosis, assessment, treatment and care of the trauma and environmental patient. Consent of instructor. Restricted to majors. Requires a C or better to pass. Restricted to: OEEM majors. Restricted to Community Colleges campuses only. May be repeated up to 1 credit.

**Prerequisite:** OEEM 201, OEEM 206, OEEM 207.

**Corequisite:** OEEM 203.

**Learning Outcomes**

1. Applies an understanding of epidemiology, trauma scoring and destination decisions.
2. Implements comprehensive and focused assessment strategies for minor, moderate and critically ill patients with bleeding; chest, abdominal, genitourinary, orthopedic, soft tissue, head, face, neck, spine, nervous system trauma.
3. Constructs and applies assessment and treatment plans for vulnerable trauma patient populations including the cognitively impaired, pregnant, pediatrics and geriatrics.
4. Applies an understanding of the pathophysiology, assessment, management and treatment of environmental emergencies.
5. Applies an understanding of the pathophysiology, assessment, management and treatment of the multisystem trauma patient.

**OEEM 206. Introduction Paramedic Practice  
3 Credits (3)**

A course which introduces students to the advanced practice of prehospital medicine, research, medical legal issues, the wellbeing of the provider. Reviews foundational EMS knowledge and the NM Paramedic Scope of Practice. Emphasizes paramedic operations within the healthcare system. Requires a C or better to pass. Restricted to majors. Consent of instructor required. Restricted to: Community Colleges only. Restricted to OEEM majors. May be repeated up to 3 credits.

**Prerequisite:** OEEM 120, OEEM 120 L, OEEM 121.

**Learning Outcomes**

1. Discuss paramedic roles and responsibilities within an EMS system.
2. Analyze and interpret research and describe how to integrate findings into evidence



- Integrates health and safety principles to maintain provider, crew and situational awareness, safety, and wellbeing.
- Uses appropriate written or electronic tools to effectively document the essential elements of patient care and transport.
- Explains the components of the EMS communications systems and the importance of Quality Assurance/Quality Improvement.
- Applies the appropriate techniques of therapeutic communication with patients, families and other healthcare team members.
- Identifies relevant laws and ethical issues which impact decisions made in healthcare settings.

**OEEM 207. Emergency Pharmacology****2 Credits (2)**

A course which integrates comprehensive knowledge of pharmacology to formulate a treatment plan intended to mitigate emergencies and improve the overall health of the patient. Discusses physiologic actions, pharmacodynamics, pharmacokinetics, therapeutic effects, medication administration, dosages and interactions. Restricted to majors. Requires a C or better to pass. Restricted to: Community Colleges only. Restricted to OEEM majors. May be repeated up to 2 credits.

**Prerequisite:** OEEM 120 OEEM 120 L, OEEM 121.

**Corequisite:** OEEM 207 L.

**Learning Outcomes**

- Explains relevant terms, processes and definitions relating to pharmacology.
- Describes safety, storage and security, legislation, naming, classification and scheduling of medications.
- Demonstrates appropriate decision making regarding medication administration to mitigate emergencies and improve overall health of the patient.
- Demonstrates an understanding of the dosages, routes, indications, contraindications, mechanism of actions, side effects of medications in the National and NM Paramedic Scope of Practice.
- Demonstrates application of ethical, legal, communication and documentation aspects of emergency pharmacology.

**OEEM 207 L. Emergency Pharmacology Lab****1 Credit (3P)**

A course which integrates comprehensive knowledge of pharmacology to formulate a treatment plan intended to mitigate emergencies and improve the overall health of the patient. Students will practice medication administration, calculate medication dosages, vascular access, fluid administration and other related skills. Requires a C or better to pass. Instructor permission required. Restricted to: Community Colleges only. Restricted to OEEM majors. May be repeated up to 1 credit.

**Prerequisite:** OEEM 120, OEEM 120 L, OEEM 121.

**Corequisite:** OEEM 207.

**Learning Outcomes**

- Demonstrates an ability to safely administer medications in the national and NM Paramedic Scope of Practice.
- Calculates the correct volume, flow rate and amount of medication to be administered in a given situation.
- Demonstrates an ability to administer medications as appropriate based on patient presentations.

**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: 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****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.

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## Emergency Medical Services (EMS) - Basic - Certificate of Completion

This Certificate leads to the Associate of Applied Science in Region 1 EMS Intermediate.

**30 Credits**

| Prefix                               | Title   | Credits |
|--------------------------------------|---|---------|
| <b>General Education Requirement</b> |   |         |
| ENGL 1110G                           | Composition I                                     | 4       |
| COMM 1130G                           | Public Speaking                                   | 3       |
| MATH 1215                            | Intermediate Algebra                              | 3       |
| <b>EMS Core Requirements</b>         |   |         |
| OEEM 101                             | CPR for the Health Care Professional              | 1       |
| OEEM 115                             | First Responder Prehospital Professional          | 3       |
| 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       |

**Required Courses**

|                      |  |           |
|----------------------|--|-----------|
| AHS 120              | Medical Terminology                                    | 3         |
| AHS 153              | Introduction to Anatomy and Physiology I               | 4         |
| or BIOL 2210         | Human Anatomy and Physiology I for the Health Sciences |           |
| <b>Total Credits</b> |  | <b>30</b> |

## 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**

| Fall           |  | Credits   |
|----------------|--|-----------|
| AHS 120        | Medical Terminology                      | 3         |
| OEEM 101       | CPR for the Health Care Professional     | 1         |
| OEEM 115       | First Responder Prehospital Professional | 3         |
| ENGL 1110G     | Composition I                            | 4         |
| MATH 1215      | Intermediate Algebra                     | 3         |
| <b>Credits</b> |  | <b>14</b> |

**Spring**

|                         |  |           |
|-------------------------|--|-----------|
| COMM 1130G              | Public Speaking  | 3         |
| AHS 153<br>or BIOL 2210 | Introduction to Anatomy and Physiology I<br>or Human Anatomy and Physiology I for the<br>Health Sciences | 4         |
| OEEM 120                | Emergency Medical Technician Basic   | 6         |
| OEEM 120 L              | Emergency Medical Technician Basic Lab   | 2         |
| OEEM 121                | Emergency Medical Technician Basic Field/<br>Clinical  | 1         |
| <b>Credits</b>          |  | <b>16</b> |
| <b>Total Credits</b>    |  | <b>30</b> |

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## 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 (p. 10)

| Prefix   | Title | Credits |
|--|-------|---------|
| <b>General Education</b>   |       |         |
| <i>Select one course from four of the following six content areas for a total of 12-14 credits.</i> <sup>1,2</sup> |       | 12-14   |

This degree requires courses from Areas I, III, IV and V; students do not need to take additional courses to complete General Education requirements.

|  |  |    |
|--|--|----|
| <b>Area I: Communications</b>  |  |    |
| ENGL 1110G   | Composition I  |    |
| <b>Area III: Laboratory Sciences</b>   |  |    |
| Select one 4 credit course from the following:                                 |  |    |
| 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) (or higher CHEM)   |    |
| <b>Area IV: Social/Behavioral Sciences</b>                                     |  |    |
| Select one from the following:   |  |    |
| ANTH 1115G   | Introduction to Anthropology   |    |
| CEPY 1120G   | Human Growth and Behavior  |    |
| PSYC 1110G   | Introduction to Psychology   |    |
| SOCI 1110G or SOCI 2310G   | Introduction to Sociology<br>Contemporary Social Problems  |    |
| <b>Area V: Humanities.</b>   |  |    |
| Select one from the following:   |  |    |
| HIST 1110G or HIST 1120G   | United States History I<br>United States History II  |    |
| PHIL 1115G or PHIL 2110G   | Introduction to Philosophy<br>Introduction to Ethics   |    |
| ENGL 1410G   | Introduction to Literature   |    |
| ENGL 2520G   | Film as Literature   |    |
| ENGL 2650G   | World Literature I   |    |
| <b>General Education Elective</b>  |  |    |
| COMM 1130G or COMM 1115G   | Public Speaking<br>Introduction to Communication   | 3  |
| <b>Core Requirements</b>   |  |    |
| 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  |
| 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  |
| <b>Other Required Courses</b>  |  | 3  |
| OECS 105   | Introduction to Information Technology   |    |
| <b>Electives, to bring the total credits to 60</b>                             |  |    |
| Select up to a minimum of 21 recommended elective credits to reach 60 credits. |  | 21 |
| AHS 120  | Medical Terminology  |    |
| BIOL 2210 or AHS 153   | Human Anatomy and Physiology I for the Health Sciences<br>Introduction to Anatomy and Physiology I                         |    |
| BIOL 2225  | Human Anatomy and Physiology II  |    |
| NA 104 & 104 L   | Nursing Assistant Fundamentals and Nursing Assistant Fundamentals Lab  |    |
| NA 105   | Nursing Assistant Clinicals  |    |
| NAV 111  | Elementary Navajo I  |    |

|                      |  |
|----------------------|--|
| OEEM 115             | First Responder Prehospital Professional |
| SPAN 1110            | Spanish I                                |
| SPAN 1120            | Spanish II                               |
| <b>Total Credits</b> | <b>60</b>                                |

<sup>1</sup> Each course selected must be from a different area and students cannot take multiple courses in the same area.

<sup>2</sup> See the General Education (p. 10) 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 Human Anatomy and Physiology I for the Health Sciences and BIOL 2225 Human Anatomy and Physiology II 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                            |   | Credits   |
|---------------------------------|---|-----------|
| 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         |
| OECS 105                        | Introduction to Information Technology            | 3         |
| Electives from recommended list |   | 3         |
| <b>Credits</b>                  |   | <b>16</b> |

### Spring

|   |  |           |
|---|--|-----------|
| 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)  |           |
| AREA IV: Social/Behavioral Science      |  | 3         |
| AREA V: Humanites                       |  | 3         |
| <b>Credits</b>                          |  | <b>14</b> |

### Second Year

| Fall                            |   | Credits   |
|---------------------------------|---|-----------|
| COMM 1130G or COMM 1115G        | Public Speaking<br>or Introduction to Communication | 3         |
| Electives from recommended list |   | 12        |
| <b>Credits</b>                  |   | <b>15</b> |
| Spring                          |   | Credits   |
| 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         |
| <b>Credits</b>                  |  | <b>15</b> |
| <b>Total Credits</b>            |  | <b>60</b> |

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## Energy Technology - Certificate of Completion

The Energy Technology Certificate provides basic knowledge and skills to help prepare individuals for entry level employment in the energy technology field. Required coursework includes mathematics; electricity principles, and energy fundamentals. Expected learning 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. Coursework for the certificate program also leads to the Associate in Applied Studies.

### 26 Credits

The Energy Technology Certificate provides basic knowledge and skills to help prepare individuals for entry level employment in the energy technology field. Required coursework includes mathematics; electricity principles, and energy fundamentals. Coursework for the certificate program also leads to the Associate in Applied Studies.

| Prefix                     | Title                                       | Credits   |
|----------------------------|---|-----------|
| <b>Course Requirements</b> |   |           |
| TCEN 101                   | Energy for the Next Generation              | 3         |
| TCEN 111                   | Basic Electrical Principles I, DC Circuits  | 4         |
| TCEN 121                   | Basic Electrical Principles II, AC Circuits | 4         |
| TCEN 110                   | Photovoltaic Application                    | 4         |
| TCEN 205                   | NEC for Alternative Energy                  | 4         |
| OETS 118                   | Mathematics for Technicians                 | 3         |
| OECS 105                   | Introduction to Information Technology      | 3         |
| OETS 102                   | Career Readiness Certification Preparation  | 1         |
| <b>Total Credits</b>       |   | <b>26</b> |

## 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 |
|----------|--|---------|
| OECS 105 | Introduction to Information Technology | 3       |
| OETS 118 | Mathematics for Technicians            | 3       |
| TCEN 101 | Energy for the Next Generation         | 3       |

|                      |   |           |
|----------------------|---|-----------|
| TCEN 111             | Basic Electrical Principles I, DC Circuits  | 4         |
| <b>Credits</b>       |   | <b>13</b> |
| <b>Spring</b>        |   |           |
| TCEN 110             | Photovoltaic Application                    | 4         |
| TCEN 121             | Basic Electrical Principles II, AC Circuits | 4         |
| TCEN 205             | NEC for Alternative Energy                  | 4         |
| OETS 102             | Career Readiness Certification Preparation  | 1         |
| <b>Credits</b>       |   | <b>13</b> |
| <b>Total Credits</b> |   | <b>26</b> |

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## Game Design - Certificate of Completion

The Game Design Certificate at NMSU Grants provides students interested in the Video Game Industry a wide foundational skillset in industry standard software so that they may begin the path to a more specific career in the industry. Our courses include training in software such as Unreal Engine 5, Autodesk 3D Studio Max, Blender, and the Adobe suite of software. Our campus boasts the capability for students to gain experience working with studio level workstations and equipment such as Wacom Cintiq Drawing Tablets, Oculus and HTC Vive Virtual Reality kits, and Alienware workstations with modern ray tracing capabilities. Students who complete this certificate will have skillsets in 3D Modeling, Conceptual Game Design, 3D/CG Visual Effects (VFX), Digital Media Design, Programming along with 2 Game Prototypes for their portfolio.

### 30 credits

| Prefix   | Title   | Credits   |
|--|---|-----------|
| FDMA 1515  | Introduction to Digital Image Editing - Photoshop | 3         |
| FDMA 1531  | Evolution of Electronic Games                     | 3         |
| FDMA 1535  | Introduction to Illustrator                       | 3         |
| FDMA 1720  | 3-D Character Design                              | 3         |
| FDMA 2530  | Introduction to 3D Modeling                       | 3         |
| FDMA 2715  | Special Effects                                   | 3         |
| FDMA 2770  | Critical Game Studies                             | 3         |
| FDMA 2775  | Game Tools and Techniques                         | 3         |
| FDMA 2785  | Level Design Concepts                             | 3         |
| Select 3 credits from the following:                   |   | 3         |
| Any course with a FDMA prefix that is not listed above |   |           |
| <b>Total Credits</b>                                   |   | <b>30</b> |

## 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 |
|-----------|-------------------------------|---------|
| FDMA 1535 | Introduction to Illustrator   | 3       |
| FDMA 1531 | Evolution of Electronic Games | 3       |

|                      |   |           |
|----------------------|---|-----------|
| FDMA 2530            | Introduction to 3D Modeling                       | 3         |
| FDMA 2770            | Critical Game Studies                             | 3         |
| FDMA Elective        |   | 3         |
| <b>Credits</b>       |   | <b>15</b> |
| <b>Spring</b>        |   |           |
| FDMA 1515            | Introduction to Digital Image Editing - Photoshop | 3         |
| FDMA 1720            | 3-D Character Design                              | 3         |
| FDMA 2775            | Game Tools and Techniques                         | 3         |
| FDMA 2715            | Special Effects                                   | 3         |
| FDMA 2785            | Level Design Concepts                             | 3         |
| <b>Credits</b>       |   | <b>15</b> |
| <b>Total Credits</b> |   | <b>30</b> |

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## Health Careers - Certificate of Completion

The Certificate in Health Careers program is designed to equip individuals with the fundamental knowledge and skills necessary to embark on a successful career in various healthcare settings. This certificate program offers a structured curriculum covering key topics such as medical terminology, anatomy and physiology, personal health & wellness, patient care techniques, CPR, and professional communication. Students will engage in hands-on training and practical experiences to develop proficiency in patient interaction and teamwork within the healthcare field. With a focus on preparing students for entry-level positions in healthcare, this certificate program provides a solid foundation for further education and career advancement in the dynamic and rewarding field of healthcare.

The course work in this certificate applies to elective credit in the Associate of Applied Studies.

### 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.

| Prefix           | Title                                    | Credits |
|------------------|--|---------|
| <b>Core</b>      |  |         |
| FYEX 1110        | First-year Seminar                       | 1       |
| OEEM 101         | CPR for the Health Care Professional     | 1       |
| CEPY 1120G       | Human Growth and Behavior                | 3       |
| OECS 105         | Introduction to Information Technology   | 3       |
| COMM 1115G       | Introduction to Communication            | 3       |
| AHS 120          | Medical Terminology                      | 3       |
| MATH 1215        | Intermediate Algebra                     | 3       |
| AHS 153          | Introduction to Anatomy and Physiology I | 4       |
| PHLS 1110G       | Personal Health & Wellness               | 3       |
| <b>Electives</b> |  |         |

|   |   |           |
|---|---|-----------|
| Select a minimum of 6 credits from the following: |   | 6         |
| CHEM 1120G  | Introduction to Chemistry Lecture and Laboratory (non majors) |           |
| NUTR 2110   | Human Nutrition   |           |
| NA 101  | Nursing Assistant Theory and Lab                              |           |
| NA 104  | Nursing Assistant Fundamentals                                |           |
| NA 104 L  | Nursing Assistant Fundamentals Lab                            |           |
| NA 105  | Nursing Assistant Clinicals                                   |           |
| NA 115  | Phlebotomist Technician                                       |           |
| OEEM 115  | First Responder Prehospital Professional                      |           |
| OEEM 120  | Emergency Medical Technician Basic                            |           |
| OEEM 120 L  | Emergency Medical Technician Basic Lab                        |           |
| <b>Total Credits</b>                              |   | <b>30</b> |

## 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   |
|-----------------------------|---|-----------|
| FYEX 1110                   | First-year Seminar  | 1         |
| OEEM 101                    | CPR for the Health Care Professional  | 1         |
| AHS 120                     | Medical Terminology   | 3         |
| OECS 105                    | Introduction to Information Technology  | 3         |
| CEPY 1120G                  | Human Growth and Behavior   | 3         |
| Elective from approved list |   | 3         |
| <b>Credits</b>              |   | <b>14</b> |
| <b>Spring</b>               |   |           |
| AHS 153<br>or BIOL 2210     | Introduction to Anatomy and Physiology I<br>or Human Anatomy and Physiology I for the Health Sciences | 4         |
| COMM 1115G                  | Introduction to Communication   | 3         |
| MATH 1215                   | Intermediate Algebra  | 3         |
| PHLS 1110G                  | Personal Health & Wellness  | 3         |
| Elective from approved list |   | 3         |
| <b>Credits</b>              |   | <b>16</b> |
| <b>Total Credits</b>        |   | <b>30</b> |

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## Medical Billing and Coding - Certificate of Completion

Medical Billing and Coding is a fast-growing, in-demand allied health field that can allow you to enter the medical field without providing direct patient care. Medical billers and coders (also referred to as health information specialists, medical billing and coding specialists, or medical information specialists) work to ensure the quality and accuracy of medical records and billing accounts. Medical biller and coder duties may also include providing administrative support within their work environment. The course work in this certificate applies to elective credit in the Associate of Applied Studies.

## 19 credits

Medical Billing and Coding is a fast-growing, in-demand allied health field that can allow you to enter the medical field without providing direct patient care. Medical billers and coders (also referred to as health information specialists, medical billing and coding specialists, or medical information specialists) work to ensure the quality and accuracy of medical records and billing accounts. Medical biller and coder duties may also include providing administrative support within their work environment. The course work in this certificate applies to elective credit in the Associate of Applied Studies.

| Prefix               | Title                                    | Credits   |
|----------------------|--|-----------|
| AHS 120              | Medical Terminology                      | 3         |
| AHS 153              | Introduction to Anatomy and Physiology I | 4         |
| OATS 208             | Medical Office Procedures                | 3         |
| OATS 228             | Medical Insurance Billing                | 3         |
| HIT 248              | Medical Coding I                         | 3         |
| HIT 258              | Medical Coding II                        | 3         |
| <b>Total Credits</b> |  | <b>19</b> |

| Course               | Title                                    | Credits   |
|----------------------|--|-----------|
| <b>First Year</b>    |  |           |
| <b>Semester 1</b>    |  |           |
| AHS 120              | Medical Terminology                      | 3         |
| AHS 153              | Introduction to Anatomy and Physiology I | 4         |
| OATS 228             | Medical Insurance Billing                | 3         |
| <b>Credits</b>       |  | <b>10</b> |
| <b>Semester 2</b>    |  |           |
| OATS 208             | Medical Office Procedures                | 3         |
| HIT 248              | Medical Coding I                         | 3         |
| <b>Credits</b>       |  | <b>6</b>  |
| <b>Total Credits</b> |  | <b>16</b> |

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## Nursing Assistant - Certificate of Completion

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. 157).

### 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. 157).

| Prefix               | Title                                    | Credits   |
|----------------------|--|-----------|
| <b>Requirements</b>  |  |           |
| 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         |
| NA 105               | Nursing Assistant Clinicals              | 4         |
| OEEM 101             | CPR for the Health Care Professional     | 1         |
| <b>Total Credits</b> |  | <b>16</b> |

## A Suggested Plan of Study: One Semester

| <b>First Year</b>    |  |                |
|----------------------|--|----------------|
| <b>Fall</b>          |  |                |
|                      |  | <b>Credits</b> |
| 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              |
| <b>Credits</b>       |  | <b>16</b>      |
| <b>Total Credits</b> |  | <b>16</b>      |

## 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.PR be completed in the students **LAST** semester.

| <b>Freshman</b>      |  |                |
|----------------------|--|----------------|
| <b>Fall</b>          |  |                |
|                      |  | <b>Credits</b> |
| 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              |
| <b>Credits</b>       |  | <b>11</b>      |
| <b>Spring</b>        |  |                |
| NA 105               | Nursing Assistant Clinicals              | 4              |
| OEEM 101             | CPR for the Health Care Professional     | 1              |
| <b>Credits</b>       |  | <b>5</b>       |
| <b>Total Credits</b> |  | <b>16</b>      |

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**Office:** Lucy Belle Ma Hall

## Phlebotomy Technician - Certificate of Completion

The Certificate in Phlebotomy prepares students for employment as a Phlebotomist Technician and includes skills with a bio-psychosocial-cultural approach to client care. The coursework includes class and lab practice prior to practice in the clinical setting consisting of phlebotomy, pre and post analytical considerations, safety and lab maintenance, basic point of care testing and the associated specimen testing. In order to be eligible to participate in the clinical setting, students are required to successfully pass a background check through the New Mexico Department of Health Caregivers Criminal History Screening Act, be granted employment clearance prior to clinical assignment and participation, and are current on all immunizations. Successful coursework completion requires a grade of "C" or better, a grade of pass on all skills checklists, a final exam grade of 84% or better, 80% average of clinical/lab, and completion of all assignments. Successful completion includes 100% attendance for class, lab, and clinical time. Upon successful completion of all coursework, a student has met all requirements for eligibility to test through the National Health career Association (NHA) for certification as a Phlebotomist Technician.

The Certificate in Phlebotomy prepares students for employment as a Phlebotomist Technician and includes skills with a bio-psychosocial-cultural approach to client care. The coursework includes class and lab practice prior to practice in the clinical setting consisting of phlebotomy, pre and post analytical considerations, safety and lab maintenance, basic point of care testing and the associated specimen testing. In order to be eligible to participate in the clinical setting, students are required to successfully pass a background check through the New Mexico Department of Health Caregivers Criminal History Screening Act, be granted employment clearance prior to clinical assignment and participation, and are current on all immunizations. Successful coursework completion requires a grade of "C" or better, a grade of pass on all skills checklists, a final exam grade of 84% or better, 80% average of clinical/lab, and completion of all assignments. Successful completion includes 100% attendance for class, lab, and clinical time. Upon successful completion of all coursework, a student has met all requirements for eligibility to test through the National Health career Association (NHA) for certification as a Phlebotomist Technician

| Prefix               | Title                                    | Credits   |
|----------------------|--|-----------|
| NA 115               | Phlebotomist Technician                  | 6         |
| AHS 120              | Medical Terminology                      | 3         |
| AHS 153              | Introduction to Anatomy and Physiology I | 4         |
| OEEM 101             | CPR for the Health Care Professional     | 1         |
| OECS 105             | Introduction to Information Technology   | 3         |
| or FYEX 1110         | First-year Seminar                       |           |
| <b>Total Credits</b> |  | <b>17</b> |

This certificate can be completed in one semester using the following road map.

| First Year |                                      | Credits |
|------------|--------------------------------------|---------|
| Semester 1 |                                      |         |
| NA 115     | Phlebotomist Technician              | 6       |
| OEEM 101   | CPR for the Health Care Professional | 1       |

|                      |  |           |
|----------------------|--|-----------|
| AHS 120              | Medical Terminology                      | 3         |
| AHS 153              | Introduction to Anatomy and Physiology I | 4         |
| OECS 105             | Introduction to Information Technology   | 3         |
| <b>Credits</b>       |  | <b>17</b> |
| <b>Total Credits</b> |  | <b>17</b> |

**Program Manager:** Neal Gallagher  
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**Office:** Lucy Belle Ma Hall

## Social Work - Associate of Social Work

The Social Work Associate degree program, addresses the significant history, policies, theories and functional practices applied when working with marginalized individuals, families, groups and communities. Throughout the program students will collect, analyze, and apply data as it relates to social phenomena, including social problems and individual behavior. Core courses teach students how individuals, groups, institutions or segments of societies behave, function, and influence one another.

The curriculum was developed to provide students with the introductory-level knowledge in the field of social work study and to support a seamless transfer to the New Mexico State University Bachelor in Social Work degree (BSW).

### 60 credits

The Associate degree in Social Work is designed to prepare students for careers in social service or community health agencies as paraprofessionals. In addition, because of the large New Mexico Common Core component, the degree also helps prepare the student for a successful transition into a bachelor's program in Social Work or other majors.

The bachelor degree requirement for a second language requires a grade of C or better through the 1120 level in any second language. If the student is a native speaker or has taken one or two years of a second language in high school, see an advisor for information in fulfilling the requirement.

Students interested in the Las Cruces campus Bachelor Degree in Social Work program may also be interested in the Associate in Social Work. Students planning to pursue a Bachelor's Degree in Social Work must apply for the Social Work Program. Students (particularly transfer students) should contact the Social Work Advisor in Las Cruces for advising and for the application packets. **Note: A 2.5 GPA is required for the Bachelor in Social Work degree.**

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 (p. 10) course list can be found here.

| Prefix                        | Title | Credits |
|-------------------------------|-------|---------|
| <b>General Education</b>      |       |         |
| <i>Area I: Communications</i> |       |         |

*English Composition - Level 1*

|            |               |   |
|------------|---------------|---|
| ENGL 1110G | Composition I | 4 |
|------------|---------------|---|

*English Composition - Level 2*

|               |   |   |
|---------------|---|---|
| ENGL 2221G    | Writing in the Humanities and Social Science    | 3 |
| or ENGL 2210G | Professional and Technical Communication Honors |   |

*Oral Communication*

|               |                               |   |
|---------------|-------------------------------|---|
| COMM 1115G    | Introduction to Communication | 3 |
| or COMM 1130G | Public Speaking               |   |

*Area II: Mathematics*

|            |   |   |
|------------|---|---|
| MATH 1350G | Introduction to Statistics <sup>1</sup> | 3 |
|------------|---|---|

*Area III: Laboratory Science*

|                            |   |   |
|----------------------------|---|---|
| BIOL 1120G<br>& BIOL 1120L | Human Biology<br>and Human Biology Laboratory | 4 |
|----------------------------|---|---|

*Area IV: Social/Behavioral Sciences (2 courses)*

|            |  |   |
|------------|--|---|
| SOWK 2110G | Introduction to Human Services & Social Work | 3 |
| PSYC 1110G | Introduction to Psychology                   | 3 |

*Area V: Humanities <sup>3</sup>**Area VI: Creative and Fine Arts <sup>3</sup>**General Education Elective*

|            |                           |   |
|------------|---------------------------|---|
| CEPY 1120G | Human Growth and Behavior | 3 |
|------------|---------------------------|---|

*Second Language Requirement - 8 credits*

|           |            |  |
|-----------|------------|--|
| SPAN 1110 | Spanish I  |  |
| SPAN 1120 | Spanish II |  |

*Core Requirements*

|                           |  |   |
|---------------------------|--|---|
| HMSV 2110                 | Case Management                                | 3 |
| SOCI 1110G                | Introduction to Sociology                      | 3 |
| PSYC 2221<br>or PSYC 2230 | Applied Psychology<br>Psychology of Adjustment | 3 |

*Other Course Requirements*

|                          |  |   |
|--------------------------|--|---|
| OECS 105<br>or FYEX 1110 | Introduction to Information Technology<br>First-year Seminar | 3 |
|--------------------------|--|---|

**Electives, to bring the total credits to 60. <sup>2</sup>***Recommended Electives*

|            |  |  |
|------------|--|--|
| CJUS 2120  | Criminal Courts and Procedure                        |  |
| SOCI 2310G | Contemporary Social Problems                         |  |
| CEPY 2140  | Explorations of Counseling & Community<br>Psychology |  |
| PSYC 2311  | A Study of Substance Abuse through Learning          |  |

**Total Credits 60**

<sup>1</sup> MATH 1350G Introduction to Statistics is required for the NMSU Las Cruces Bachelor of Social Work. If students are not planning to pursue a Bachelor's degree, MATH 1130G Survey of Mathematics is acceptable but does not prepare the student for higher level MATH/STAT.

<sup>2</sup> 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 at least 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.

<sup>3</sup> See the General Education (<https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/>) section of the catalog for a full list of courses.

## A Suggested Plan of Study

This roadmap assumes student placement into ENGL 1110G Composition I and a College level MATH, such as MATH 1350G Introduction to Statistics, 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.

**First Year**

| Fall                     |   | Credits   |
|--------------------------|---|-----------|
| ENGL 1110G               | Composition I   | 4         |
| OECS 105<br>or FYEX 1110 | Introduction to Information Technology<br>or First-year Seminar | 3         |
| PSYC 1110G               | Introduction to Psychology                                      | 3         |
| SOWK 2110G               | Introduction to Human Services & Social Work                    | 3         |
| CEPY 1120G               | Human Growth and Behavior                                       | 3         |
| <b>Credits</b>           |   | <b>16</b> |

**Spring**

|                                 |  |           |
|---------------------------------|--|-----------|
| ENGL 2210G<br>or ENGL 2221G     | Professional and Technical Communication<br>Honors<br>or Writing in the Humanities and Social<br>Science | 3         |
| COMM 1115G<br>or COMM 1130G     | Introduction to Communication<br>or Public Speaking  | 3         |
| PSYC 2230<br>or PSYC 2221       | Psychology of Adjustment<br>or Applied Psychology  | 3         |
| SOCI 1110G                      | Introduction to Sociology  | 3         |
| AREA V: Humanities <sup>1</sup> |  | 3         |
| <b>Credits</b>                  |  | <b>15</b> |

**Second Year**

| Fall   |                            | Credits   |
|--|----------------------------|-----------|
| MATH 1350G                                   | Introduction to Statistics | 3         |
| SPAN 1110                                    | Spanish I                  | 4         |
| AREA VI: Creative and Fine Arts <sup>1</sup> |                            | 3         |
| Electives (two 3 credit hours courses)       |                            | 6         |
| <b>Credits</b>                               |                            | <b>16</b> |

**Spring**

|                |                          |           |
|----------------|--------------------------|-----------|
| HMSV 2110      | Case Management          | 3         |
| BIOL 1120G     | Human Biology            | 3         |
| SPAN 1120      | Spanish II               | 4         |
| BIOL 1120L     | Human Biology Laboratory | 1         |
| Elective       |                          | 2         |
| <b>Credits</b> |                          | <b>13</b> |

**Total Credits 60**

<sup>1</sup> The New Mexico General Education (p. 10) course list can be found here.

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# Southwest Heritage Studies - Certificate on Completion

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.

### 29-31 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.

| Prefix                                 | Title   | Credits |
|--|---|---------|
| <b>Requirements</b>                    |   |         |
| ENGL 1110G                             | Composition I                                     | 4       |
| COMM 1115G                             | Introduction to Communication                     | 3       |
| or COMM 1130G                          | Public Speaking                                   |         |
| MATH 1215                              | Intermediate Algebra                              | 3       |
| BIOL 1190G                             | Contemporary Problems in Biology                  | 4       |
| OECS 105                               | Introduction to Information Technology            | 3       |
| or FYEX 1110                           | First-year Seminar                                |         |
| <b>Local History Requirements</b>      |   |         |
| HIST 2110                              | Survey of New Mexico History                      | 3       |
| HIST 2996                              | Special Topics                                    | 3       |
| <b>Electives</b>                       |   |         |
| Select two courses from the following: |   | 6-8     |
| ANTH 1140G                             | Introduction to Cultural Anthropology             |         |
| ANTH 2140G                             | Indigenous Peoples of North America               |         |
| ARTH 1115G                             | Orientation in Art                                |         |
| ENGL 1410G & ENGL 2650G                | Introduction to Literature and World Literature I |         |
| GEOG 1120G or GEOG 1130G               | World Regional Geography Human Geography          |         |

|            |                  |
|------------|------------------|
| GEOL 1110G | Physical Geology |
| SPAN 1110  | Spanish I        |
| SPAN 1120  | Spanish II       |

**Total Credits** **29-31**

## 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 1110G Composition I and MATH 1215 Intermediate Algebra as determined by the English and Math Placement test, an ACT score, or passing the prerequisite course.

| <b>First Year</b>                                  |  |                |
|--|--|----------------|
| <b>Fall</b>  |  | <b>Credits</b> |
| ENGL 1110G   | Composition I  | 4              |
| MATH 1215  | Intermediate Algebra   | 3              |
| HIST 2110  | Survey of New Mexico History                                 | 3              |
| OECS 105 or FYEX 1110                              | Introduction to Information Technology or First-year Seminar | 3              |
| Elective - Choose from list in degree requirements |  | 3-4            |
| <b>Credits</b>                                     |  | <b>16-17</b>   |
| <b>Spring</b>                                      |  |                |
| BIOL 1190G   | Contemporary Problems in Biology                             | 4              |
| COMM 1115G   | Introduction to Communication                                | 3              |
| HIST 2996  | Special Topics   | 3              |
| Elective - Choose from list in degree requirements |  | 3-4            |
| <b>Credits</b>                                     |  | <b>13-14</b>   |
| <b>Total Credits</b>                               |  | <b>29-31</b>   |

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## Web Fundamentals - Certificate of Completion

The Web Fundamentals certificate at NMSU Grants provides its graduates with a variety of foundational skills to begin their path into a career in web design. Graduates receive training in modern web design practices with a focus on building strong skillsets with HTML, CSS and other tools to create user experience oriented responsive designs. Graduates will also gain proficiency with digital media programs to aid in their design like Adobe Creative Cloud Software. This program is able to be completed entirely online with the option to utilize face to face labs as well.

This Certificate is 100% embedded and leads to the Associate of Applied Science in Creative Media Design at NMSU Grants.

This Certificate is 100% embedded and leads to the Associate of Applied Science in Creative Media Design at NMSU Grants.

**30 credits**

| Prefix               | Title   | Credits   |
|----------------------|---|-----------|
| <b>Requirements</b>  |   |           |
| OECS 105             | Introduction to Information Technology            | 3         |
| FDMA 1120            | Desktop Publishing                                | 3         |
| FDMA 1360            | Web Design I                                      | 3         |
| FDMA 1515            | Introduction to Digital Image Editing - Photoshop | 3         |
| FDMA 1535            | Introduction to Illustrator                       | 3         |
| FDMA 1630            | Principles of Design                              | 3         |
| FDMA 2360            | Web Design II                                     | 3         |
| FDMA 2994            | Portfolio Design & Development                    | 3         |
| FDMA Electives       |   | 6         |
| <b>Total Credits</b> |   | <b>30</b> |

## 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   |
|--|---|-----------|
| OECS 105                                 | Introduction to Information Technology            | 3         |
| FDMA 1120                                | Desktop Publishing                                | 3         |
| FDMA 1360                                | Web Design I                                      | 3         |
| FDMA 1515                                | Introduction to Digital Image Editing - Photoshop | 3         |
| FDMA 1535                                | Introduction to Illustrator                       | 3         |
|  | <b>Credits</b>                                    | <b>15</b> |
| Spring                                   |   |           |
| FDMA 2360                                | Web Design II                                     | 3         |
| FDMA 2994                                | Portfolio Design & Development                    | 3         |
| FDMA 1630                                | Principles of Design                              | 3         |
| FDMA electives - Choose two FDMA courses |   | 6         |
|  | <b>Credits</b>                                    | <b>15</b> |
|  | <b>Total Credits</b>                              | <b>30</b> |

**Program Manager:** Michael Webb

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## Welding Technology

The Welding Program at NMSU Grants is designed to provide students with the skills and knowledge necessary for a successful career in the dynamic field of welding. This program offers both certificate and associate degree options, catering to individuals with varying career goals and aspirations.

The Welding Certificate is ideal for those seeking a quick entry into the workforce, the certificate program provides a focused curriculum that covers essential welding skills. Graduates are prepared for entry-level positions in a variety of industries. For students aspiring to advance their careers or pursue leadership roles, the associate degree program offers a more comprehensive education. In addition to welding skills, students gain a solid foundation in communication, problem-solving, and critical thinking.

Graduates of our Welding Program are well-positioned for exciting career opportunities in industries such as manufacturing, construction, automotive, and aerospace. Potential career paths include welder, welding inspector, fabrication specialist, and welding supervisor.

Welding Technology - Associate of Applied Science (p. 155)

Welding Technology - Certificate (p. 156)

### WELD 1110. Introduction to Welding Fundamentals 3 Credits (2)

This course focuses on the fundamental techniques employed in the welding field. It is a laboratory approach to understanding and building skills in welding related areas including shop safety, hand and portable power tool usage, and welding.

#### Learning Outcomes

1. Demonstrate knowledge of basic welding processes.
2. Demonstrate shop safety including the proper use of welding hand and machine tools.
3. Practice and demonstrate SMAW with various electrodes in all positions.

### WELD 1120. Print Reading for Welders 3 Credits (3)

Provides students with the knowledge to read and interpret prints and welding symbols and transfer this knowledge to the workplace with layout tools and measuring instruments.

#### Learning Outcomes

1. Identify, read and follow AWS welding symbols.
2. Demonstrate the ability to interpret orthographic and isometric drawings.
3. Demonstrate the ability to read/interpret pipe welding drawing and schematics.
4. Demonstrate proficiency in the mathematics utilized in welding and fabrication.

### WELD 1130. SMAW (Shielded Metal Arc Welding) I 6 Credits (3+6P)

This course will cover introductory theory and practical applications of structural plate welding, welding safety, handheld torch cutting operations and equipment set up. The development of student skills using the Shielded Metal Arc Welding process in all positions will be stressed. The standards of this course are set by the American Welding Society and utilized in both classroom study and laboratory work.

#### Learning Outcomes

1. Perform welds on various joints in all positions.
2. Perform welds on various joints in all positions.
3. Demonstrate proficiency in identification of electrode classification and proper storage.
4. Identify SMAW power sources and their characteristics.
5. Maintain, use, and safely operate SMAW equipment.

### WELD 1140. GMAW-Gas Metal Arc Welding I 3 Credits (2)

Introduces Gas Metal Arc Welding (GMAW) short circuit welding safety, machine set up and shutdown procedures. Topics include personal protective equipment (PPE), GMAW uses, advantages and disadvantages, constant voltage (CV) power source, polarity, electrode types, shielding gasses, and weld discontinuities and defects identification and corrective practices. Lab exercises will include various joints in all positions.

**Learning Outcomes**

1. Demonstrate the ability to safely operate the Gas Metal Arc Welding equipment.
2. Demonstrate Gas Metal Arc Welding theory and application.
3. Demonstrate the ability to perform Gas Metal Arc Welding on various joints in all positions.
4. Demonstrate the ability to fabricate assigned projects while applying proper tolerance to finished projects.

**WELD 1155. GTAW-Gas Tungsten Arc Welding I****3 Credits (2+2P)**

A basic course designed to provide the student with the ability to setup, maintain and operate Gas Tungsten Arc Welding (GTAW) equipment safely. Develop skills to weld structural joints to bend tests standards utilizing various metals. Weld quality will be measured in accordance with American Welding Society standards.

**Learning Outcomes**

1. Demonstrate the ability set up GTAW equipment for use, inspect equipment prior to use, perform minor maintenance, and identify potential hazards.
2. Demonstrate the ability to perform GTAW on various base metals in all positions.
3. Demonstrate the understanding of basic metallurgical differences in various base and filler metals.
4. Demonstrate an understanding of welding currents and power sources.

**WELD 1171. Layout and Fabrication****3 Credits (1+4P)**

This class is an introduction to general layout and fabrication techniques as related to structural welding. Emphasis will be on construction of small projects to tolerances using prints. A variety of welding processes will be used in all positions.

**Prerequisites:** WELD 1130, WELD 1120, WELD 1140, and OETS 104 and OETS 118.

**Learning Outcomes**

1. Demonstrate the ability to fabricate projects.
2. Use shop drawing and/or prints to create projects and develop the bill of materials for the project.
3. Demonstrate ability to properly follow WPS (Welding Procedure Specification) during fabrication.

**WELD 1191. Welded Art****3 Credits (1+4P)**

Students explore the possibilities of welded art.

**Prerequisite:** WELD 1110.

**Learning Outcomes**

1. Demonstrate knowledge of the different forms of welded art.

**WELD 1210. Flux Cored Arc Welding****3 Credits (2+2P)**

Principles of flux cored arc welding (FCAW) terminology, safety procedures, and equipment set-up. Students will practice welding structural joints in all positions using the FCAW process.

**Learning Outcomes**

1. Demonstrate the set up of FCAW equipment.
2. Demonstrate safe operations of FCAW equipment.
3. Demonstrate minor repairs/maintenance of equipment.
4. Perform FCAW welds to minimum required specifications.

**WELD 1220. Pipe Welding I****3 Credits (2+2P)**

Stresses the theory and practical application of pipe welding in the 1-G and 2-G positions. This course will develop skills in the fit-up and technique of welding pipe, using electrodes and various Welding process.

**Prerequisite(s):** WELD 1130, WELD 1140, and WELD 1155, or consent of instructor.

**Learning Outcomes**

1. Demonstrate an understanding of 1-G and 2-G pipe welding using a variety of pipe sizes.
2. Demonstrate the ability to produce destructive test samples to AWS and/or API standards.
3. Demonstrate the ability to prepare, fit and tack pipe to specifications, getting pipe ready to weld.
4. Demonstrate knowledge of appropriate pipe fitting terminology and calculations.

**WELD 1310. Metallurgy****3 Credits (3)**

This course includes a study of ferrous and nonferrous metals from ore to the finished products. Emphasis is placed on metal alloys, heat-treating, hard surfacing, welding techniques, forging, foundry processes, and mechanical properties of metal including hardness, machinability, and ductility. Technical terms used in the various phases of metallurgy, from early history to present.

**Prerequisites:** WELD 1130 or consent of instructor.

**Learning Outcomes**

1. Describe metals and alloys commonly used in industry.
2. Describe mechanical properties of metals including stresses and failures.
3. Describe the metalworking processes of casting, forming, and machining.
4. Describe the two basic processes, and state the four major purposes of heat treatment.

**WELD 2130. SMAW (Shielded Metal Arc Welding) II****6 Credits (3+6P)**

Reviews and builds upon SMAW-1 skills. Students will learn joint design and AWS standards for welder qualification testing. Continuation of WELD 1130. May be repeated up to 6 credits.

**Prerequisite:** WELD 1130.

**Learning Outcomes**

1. Meet AWS acceptance criteria for weld quality and destructive tests (bend test).

**WELD 2155. GTAW-Gas Tungsten Arc Welding II****3 Credits (2)**

A continuation of GTAW I. This course is designed to provide the student with the ability to setup, maintain and operate Gas Tungsten Arc Welding (GTAW) equipment safely. Develop skills to weld structural joints to bend tests standards utilizing various metals. Weld quality will be measured in accordance with American Welding Society standards.

**Prerequisite:** WELD 1155 or consent of instructor.

**Learning Outcomes**

1. Demonstrate the ability to perform increasingly complex welds.
2. Demonstrate the ability set up GTAW equipment for use, inspect equipment prior to use, perform minor maintenance, and identify potential hazards.
3. Demonstrate the ability to perform GTAW on various base metals in all positions.

- Demonstrate the understanding of basic metallurgical differences in various base and filler metals.
- Demonstrate an understanding of welding currents and power sources.

**WELD 2220. Pipe Welding II****3 Credits (2+2P)**

Stresses the theory and practical application of 5-G and 6-G pipe welding. This course will develop skills in the technique of pipe welding, using various Welding processes.

**Prerequisite:** WELD 2120.

**Learning Outcomes**

- Demonstrate an understanding of 5-G and 6-G pipe welding using a variety of pipe sizes.
- Demonstrate the ability to produce destructive test samples to AWS and/or API standards.
- Demonstrate the ability to prepare, fit and tack pipe to specifications, getting pipe ready to weld.
- Demonstrate knowledge of appropriate pipe fitting terminology and calculations.

**WELD 2290. Welder Qualifications****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, and basics of welding codes. Restricted to Welding majors.

**Prerequisites:** OETS 104 or OETS 118; and WELD 11130, WELD 1120, WELD 1310, WELD 1140, WELD 1155, WELD 1210 and WELD 2155 or consent of instructor.

**Learning Outcomes**

- Pass the AWS and ASME Welder Performance Qualification Tests in all processes and all positions.
- Recognize the role of welding inspection and testing in industry.
- Identify essential information for welding procedure and performance qualification.
- Identify essential welding and inspection information from Welding Procedure Specifications (WPS's).
- Identify essential welding and inspection information from AWS D1 1, Structural Welding Code – Steel.
- Identify essential welding and inspection information from ASME, Boiler and Pressure Vessel Code - Section IX.
- Describe the basic principles of non-destructive testing methods.

**WELD 2995. Cooperative Education in Welding****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. May be repeated up to 6 credits.

**Learning Outcomes**

- Varies.

**WELD 2996. Topics in Welding****1-6 Credits**

Individual studies in areas of welding technology. May be repeated up to 12 credits.

**Learning Outcomes**

- Varies.

**WELD 2997. Independent Study****1-4 Credits**

Individual Studies related to Welding.

**Learning Outcomes**

- Varies.

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## 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. 156))

| Prefix   | Title                                    | Credits                   |
|--|--|---------------------------|
| <b>General Education</b>   |  |                           |
| <i>Select one course from four of the following six content areas for a total of 13 credits.</i> <sup>1, 2</sup>   |  | 13                        |
| 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                   |                           |
| Area VI: Creative and Fine Arts  |  |                           |
| Select one from the following:   |  |                           |
| ARTH 1115G   | Orientation in Art                       |                           |
| THEA 1110G   | Introduction to Theatre                  |                           |
| <i>General Education Elective</i>  |  |                           |
| ENGL 2210G   | Professional and Technical Communication | 3                         |
| <b>Welding Core Requirements</b>   |  |                           |
| WELD 1130  | SMAW (Shielded Metal Arc Welding) I      | 6                         |
| WELD 1120  | Print Reading for Welders                | 3                         |
| WELD 1310  | Metallurgy                               | 3                         |
| WELD 1220  | Pipe Welding I                           | 3                         |
| WELD 1140  | GMAW-Gas Metal Arc Welding I             | 3                         |
| WELD 1155  | GTAW-Gas Tungsten Arc Welding I          | 3                         |

|                                  |                                  |           |
|----------------------------------|----------------------------------|-----------|
| WELD 2220                        | Pipe Welding II                  | 3         |
| WELD 1171                        | Layout and Fabrication           | 3         |
| WELD 2155                        | GTAW-Gas Tungsten Arc Welding II | 3         |
| WELD 1191                        | Welded Art                       | 3         |
| WELD 2290                        | Welder Qualifications            | 6         |
| <i>Other Course Requirements</i> |                                  |           |
| DRFT 114                         | Introduction to Solid Modeling   | 3         |
| or DRFT 109                      | Computer Drafting Fundamentals   |           |
| MATH 1215                        | Intermediate Algebra             | 3         |
| or OETS 118                      | Mathematics for Technicians      |           |
| <b>Total Credits</b>             |                                  | <b>61</b> |

## 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           |                                     | Credits   |
|----------------|-------------------------------------|-----------|
| WELD 1130      | SMAW (Shielded Metal Arc Welding) I | 6         |
| WELD 1140      | GMAW-Gas Metal Arc Welding I        | 3         |
| WELD 1155      | GTAW-Gas Tungsten Arc Welding I     | 3         |
| OETS 118       |                                     | 3         |
| <b>Credits</b> |                                     | <b>15</b> |

### Spring

|                |                                  |           |
|----------------|----------------------------------|-----------|
| WELD 1120      | Print Reading for Welders        | 3         |
| WELD 2155      | GTAW-Gas Tungsten Arc Welding II | 3         |
| ENGL 1110G     | Composition I                    | 4         |
| PSYC 1110G     | Introduction to Psychology       | 3         |
| or SOCI 1110G  | or Introduction to Sociology     |           |
| <b>Credits</b> |                                  | <b>13</b> |

### Summer

|                |                                   |          |
|----------------|-----------------------------------|----------|
| DRFT 109       | Computer Drafting Fundamentals    | 3        |
| or DRFT 114    | or Introduction to Solid Modeling |          |
| <b>Credits</b> |                                   | <b>3</b> |

### Second Year

| Fall           |  | Credits   |
|----------------|--|-----------|
| WELD 1310      | Metallurgy                               | 3         |
| WELD 1220      | Pipe Welding I                           | 3         |
| WELD 2220      | Pipe Welding II                          | 3         |
| ENGL 2210G     | Professional and Technical Communication | 3         |
| WELD 1171      | Layout and Fabrication                   | 3         |
| <b>Credits</b> |  | <b>15</b> |

### Spring

|  |                       |           |
|--|-----------------------|-----------|
| WELD 2290                                    | Welder Qualifications | 6         |
| WELD 1191                                    | Welded Art            | 3         |
| AREA V: Humanities <sup>1</sup>              |                       | 3         |
| AREA VI: Creative and Fine Arts <sup>1</sup> |                       | 3         |
| <b>Credits</b>                               |                       | <b>15</b> |
| <b>Total Credits</b>                         |                       | <b>61</b> |

<sup>1</sup> See the General Education (p. 10) section for a full list.

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## Welding Technology - Certificate of Completion

This Certificate is 100% embedded in, and leads to the Associate of Applied Science in Welding Technology.

### 30 credits

| Prefix                      | Title                               | Credits   |
|-----------------------------|-------------------------------------|-----------|
| <b>Welding Requirements</b> |                                     |           |
| WELD 1130                   | SMAW (Shielded Metal Arc Welding) I | 6         |
| WELD 1120                   | Print Reading for Welders           | 3         |
| WELD 1220                   | Pipe Welding I                      | 3         |
| WELD 1140                   | GMAW-Gas Metal Arc Welding I        | 3         |
| WELD 1155                   | GTAW-Gas Tungsten Arc Welding I     | 3         |
| WELD 2220                   | Pipe Welding II                     | 3         |
| WELD 2155                   | GTAW-Gas Tungsten Arc Welding II    | 3         |
| WELD 2290                   | Welder Qualifications               | 6         |
| <b>Total Credits</b>        |                                     | <b>30</b> |

## 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   |
|----------------|-------------------------------------|-----------|
| WELD 1130      | SMAW (Shielded Metal Arc Welding) I | 6         |
| WELD 1220      | Pipe Welding I                      | 3         |
| WELD 1155      | GTAW-Gas Tungsten Arc Welding I     | 3         |
| WELD 1120      | Print Reading for Welders           | 3         |
| <b>Credits</b> |                                     | <b>15</b> |

### Spring

|                      |                                  |           |
|----------------------|----------------------------------|-----------|
| WELD 1140            | GMAW-Gas Metal Arc Welding I     | 3         |
| WELD 2220            | Pipe Welding II                  | 3         |
| WELD 2155            | GTAW-Gas Tungsten Arc Welding II | 3         |
| WELD 2290            | Welder Qualifications            | 6         |
| <b>Credits</b>       |                                  | <b>15</b> |
| <b>Total Credits</b> |                                  | <b>30</b> |

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# Courses Descriptions

**Note: Not all courses listed below are taught at the NMSU Grants Campus.**

## A

- ACCT-ACCOUNTING (p. 159)
- ACES-AGRI, CONSUMER & ENV SCIE (p. 160)
- ACOM-AG COMMUNICATIONS (<https://catalogs.nmsu.edu/grants/courses-descriptions/acom/>)
- AEEC-AGRICULTURAL ECON/ECON (p. 160)
- AERO-AEROSPACE STUDIES (p. 161)
- AERT-AEROSPACE TECHNOLOGY (p. 162)
- AFST-AFRICANA STUDIES (p. 164)
- AGRO-AGRONOMY (p. 165)
- AHS-ALLIED HEALTH SCIENCE (p. 165)
- ANSC-ANIMAL SCIENCE (p. 166)
- ANTH-ANTHROPOLOGY (p. 169)
- ARCH-ARCHITECTURE (p. 170)
- ARSC-ARTS & SCIENCES (<https://catalogs.nmsu.edu/grants/courses-descriptions/arsc/>)
- ARTH-ART HISTORY (p. 174)
- ARTS-ART STUDIO (p. 174)
- ASTR-ASTRONOMY (p. 179)
- AUTO-AUTOMOTIVE TECHNOLOGY (p. 179)
- AXED-AGRICULTURAL EXTN EDUC (p. 183)

## B

- B A-BUSINESS ADMINISTRATION (p. 188)
- BCHE-BIOCHEMISTRY (p. 188)
- BCIS-BUSINESS COMPUTER SYSTEMS (p. 188)
- BFIN-BUSINESS FINANCE (p. 188)
- BIOL-BIOLOGY (p. 189)
- BLAW-BUSINESS LAW (p. 193)
- BLED-BILINGUAL EDUCATION (p. 193)
- BMGT-BUSINESS MANAGEMENT (p. 194)
- BUSA-BUSINESS ADMINISTRATION (p. 197)

## C

- C E-CIVIL ENGINEERING (p. 198)
- CCDE-DEVELOPMENTAL ENGLISH (p. 198)
- CCDM-DEVELOPMENTAL MATHEMATICS (p. 199)
- CCDR-DEVELOPMENTAL READING (p. 199)
- CCDS-DEVELOPMENTAL SKILLS (p. 199)
- CCST-CHICANA/O STUDIES (p. 199)
- CEPY-COUNSELING & EDUCATIONAL PSYCHOLOGY (p. 200)
- CHEF-CULINARY ARTS (p. 201)
- CHEM-CHEMISTRY (p. 207)
- CHME-CHEMICAL & MATERIALS ENGR (p. 211)
- CHSS - COMM HEALTH/SOC SRVCS (p. 212)
- CJUS-CRIMINAL JUSTICE (p. 212)
- CNST-CONSTRUCTION (p. 214)
- COMM-COMMUNICATION (p. 215)
- CSEC-CYBERSECURITY (p. 229)

- CTEC-CYBER TECHNOLOGY (p. 230)
- CTFM-CLTHNG/TXTLS/FSHN MRCHDSG (p. 232)

## D

- DANC-DANCE (p. 233)
- DAS-DENTAL ASSISTING (p. 235)
- DHYG-DENTAL HYGIENE/HYGIENIST (p. 238)
- DMS-DIAGNOSTIC MED SONOGRAPHY (p. 251)
- DRFT-DRAFTING (p. 256)

## E

- E E-ELECTRICAL ENGINEERING (p. 262)
- E T-ENGINEERING TECHNOLOGY (p. 262)
- ECED-EARLY CHILDHOOD EDUCATION (p. 266)
- ECON-ECONOMICS (p. 272)
- EDLT-EDUCATIONAL TECHNOLOGY (p. 273)
- EDUC-EDUCATION (p. 273)
- ELAD-EDUCATIONAL LEADERSHIP ADMINISTRATION (p. 274)
- ELT - ELECTRONICS TECHNOLOGY (p. 275)
- ELTR-ELECTRICAL (p. 278)
- ENGL-ENGLISH (p. 280)
- ENGR-ENGINEERING (p. 285)
- ENTR-ENTREPRENEURSHIP (p. 287)
- ENVS-ENVIRONMENTAL SCIENCE (p. 287)
- EPWS-ETMLGY/PLNT PTHLGY/WD SCI (p. 287)

## F

- FCSC-FAMILY AND CONSUMER SCIENCES (p. 288)
- FCST-FAMILY AND CHILD STUDIES (p. 288)
- FDMA-FILM & DIGITAL MEDIA ARTS (p. 289)
- FIRE-FIRE INVESTIGATION (p. 297)
- FREN-FRENCH (p. 301)
- FSTE-FOOD SCIENCE & TECHNOLOGY (p. 303)
- FWCE-FISH,WILDLF,CONSERV ECOL (p. 303)
- FYEX-FIRST YEAR EXPERIENCE (p. 304)

## G

- GENE-GENETICS (p. 306)
- GEOG-GEOGRAPHY (p. 306)
- GEOL-GEOLOGY (p. 308)
- GNDR-GENDER AND SEXUALITY STUDIES (p. 308)
- GRMN-GERMAN (p. 309)

## H

- HIST-HISTORY (p. 310)
- HIT-HEALTH INFO TECHNOLOGY (p. 313)
- HMRT-HUMAN RIGHTS (p. 316)
- HMSV-HUMAN SERVICES (p. 318)
- HNRS-HONORS (p. 318)
- HORT-HORTICULTURE (p. 322)
- HOST-HOSPITALITY AND TOURISM (p. 323)

- HRTM-HOTEL/RESTRNT/TOURISM MGT (p. 327)
- HVAC-HEATING/AC/REFRIGERATION (p. 328)

## I

- I E-INDUSTRIAL ENGINEERING (p. 330)
- INMT - INDUSTRIAL MAINTENANCE (p. 331)
- INST-INSTRUMENT & CONTR TECH (p. 332)

## J

- JAPN-JAPANESE (p. 332)
- JOUR-JOURNALISM (p. 333)

## L

- L SC-LIBRARY SCIENCE (p. 334)
- LANG-LANGUAGE (p. 335)
- LAWE-LAW ENFORCEMENT (p. 335)
- LIBR-LIBRARY SCIENCE (p. 337)
- LING-LINGUISTICS (p. 337)

## M

- M E-MECHANICAL ENGINEERING (p. 337)
- MAT-AUTOMATION & MANUFACTURING (p. 338)
- MATH-MATHEMATICS (p. 339)
- MGMT-MANAGEMENT (p. 345)
- MKTG-MARKETING (p. 345)
- MLSL-MILITARY SCIENCE (p. 347)
- MUSC-MUSIC (p. 348)

## N

- NA - NURSING ASSISTANT (p. 352)
- NATV-NATIVE AMERICAN STUDIES (p. 355)
- NAV-NAVAJO (p. 355)
- NGEN-NATURAL GAS ENGINE COMP (p. 355)
- NURS-NURSING (p. 356)
- NUTR-NUTRITION (p. 364)

## O

- OATS-OFFICE ADMINISTRATION TECHNOLOGY SYSTEMS (p. 365)
- OEBM-BIOMEDICAL TECHNOLOGY (p. 370)
- OECS-COMPUTER TECHNOLOGY (p. 370)
- ODEM- PARAMEDIC (p. 373)
- OEGR-DIGITAL GRAPHIC TECH (p. 376)
- OETS-TECHNICAL STUDIES (p. 376)

## P

- PHED-PHYSICAL EDUCATION (p. 376)
- PHIL-PHILOSOPHY (p. 377)
- PHLS-PUBLIC HEALTH SCIENCES (p. 378)
- PHYS-PHYSICS (p. 379)
- PL-S-PARALEGAL SERVICES (p. 385)
- POLS-POLITICAL SCIENCE (p. 386)

- PORT-PORTUGUESE (p. 387)
- PSYC-PSYCHOLOGY (p. 387)

## R

- RADT-RADIOLOGIC TECHNOLOGY (p. 389)
- RESP - RESPIRATORY THERAPY (p. 393)
- RGSC-RANGE SCIENCE (p. 396)

## S

- SIGN-SIGN LANGUAGE (p. 396)
- SMET-SCIENCE/MATH/ENG/TECH (p. 397)
- SOCI-SOCIOLOGY (p. 397)
- SOIL-SOIL (p. 398)
- SOWK-SOCIAL WORK (p. 399)
- SPAN-SPANISH (p. 399)
- SPED-SPECIAL EDUCATION (p. 401)
- SPHS-SPEECH & HEARING SCIENCE (p. 401)
- SPMD-SPORTS MEDICINE (p. 401)
- SUR-SURVEYING (p. 404)
- SURG-SURGICAL TECHNOLOGY (p. 405)

## T

- TCEN-ENVIRONMENTAL/ENERGY TECH (p. 406)
- THEA-THEATER (p. 408)

## W

- WATR-WATER UTILITIES (p. 410)
- WELD-WELDING TECHNOLOGY (p. 411)

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 Numbering:

### Four-digit Course

ASTR 1120G The Planets Lecture & Laboratory (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
  - *Suffix (G)*- indicates a New Mexico statewide General Education course.
  - *Suffix (V)*- indicates a Viewing a Wider World course.
  - *Suffix (H)*- indicates a Honors courses outside of the Honors prefix.
  - *Suffix (L)*- indicates a Laboratory course.
  - *Suffix (M)*- indicates a Multicultural course.
- **Credits** - The unit of university credit is the semester hour. In the example the course can be taken and will be charged for 4 credits. The numbers that appear in the parenthesis indicate the number of

credits for lecture hours (3) and the number of credits for practicum/ laboratory hours (3).

### Three-digit Course

AERT 105 Aerospace Engineering PLTW (4 credits (2+4P))

- **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-** (105) 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
  - *Suffix (G)*- indicates a New Mexico statewide General Education course.
  - *Suffix (V)*- indicates a Viewing a Wider World course.
  - *Suffix (H)*- indicates a Honors courses outside of the Honors prefix.
  - *Suffix (L)*- indicates a Laboratory course.
  - *Suffix (M)*- indicates a Multicultural course.
  - *Suffix (N)* - indicates when the course credits are not applicable to the baccalaureate and specified associate degrees and is only added to developmental coursework.
- **Credits** - The unit of university credit is the semester hour. In the example the course can be taken and will be charged for 4 credits. The numbers that appear in the parenthesis indicate the number of credits for lecture hours (2) and the number of credits for practicum/ laboratory hours (4).

### Designation

- 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.

### 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.

#### **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.

## ACCT-ACCOUNTING (ACCT)

### ACCT 200. A Survey of Accounting

#### **3 Credits (3)**

Emphasis on financial statement interpretation and development of accounting information for management. For engineering, computer science, and other non business majors. Community Colleges only.

**Prerequisite:** one C S course or consent of instructor.

### 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 1130. Agricultural Industry Certifications

#### 3 Credits (3)

Provides academic course credit for the successful completion of agricultural industry certifications. The successful completion of one approved agricultural industry certification yields three hours of course credit. The completion of two agricultural industry certifications can yield a maximum course credit of six hours. Any third-party costs associated with completing the agricultural industry certification(s) will be the responsibility of the student. May be repeated up to 6 credits.

#### Learning Outcomes

1. Students will demonstrate a comprehensive understanding of the key concepts, tools, and techniques specific to the agricultural certification, including both theoretical knowledge and practical applications relevant to the industry.
2. Students will achieve proficiency in technical skills related to modern agricultural practices within their chosen certification area, such as precision agriculture, sustainable farming techniques, and the use of advanced agricultural machinery and technology.
3. Students will develop and apply problem-solving and critical-thinking skills to address real-world challenges in the agricultural sector, utilizing data-driven approaches and industry best practices.
4. Students will demonstrate an understanding of professional and ethical standards within the agricultural industry, including sustainable practices, environmental stewardship, and adherence to safety and regulatory requirements.

### 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, g.life success principles, e.g., goal setting, time management, stress management.

3. 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 principles 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 provides an orientation to careers in agricultural economics and agricultural business. Students will learn about the agricultural supply chain 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 current agricultural issues. Freshman status or consent of instructor required. May be repeated up to 1 credit.

#### Learning Outcomes

1. Become familiar with career opportunities in agricultural economics and agricultural business
2. 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 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. May be repeated up to 3 credits.

**Learning Outcomes**

- Demonstrate, refine and expand written and oral communication skills
- Develop an understanding of basic financial statements, their use and analysis
- Understand the roles management and management styles play in modern agribusiness
- Learn about the history of agribusiness domestically and internationally
- 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**

- 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**

- Understand of global agriculture including production techniques used in various geographical regions, consumption trends, and political and social constraints.
- Synthesis information about agricultural issues and make informed arguments
- Articulately discuss modern issues in agriculture
- 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. May be repeated up to 3 credits.

**Learning Outcomes**

- Demonstrate an understanding of the terminology used to describe common techniques and concepts in business information systems.
- Demonstrate a mastery of spreadsheet design and use.

**AEEC 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**

- 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)**

"Team and Leadership Fundamentals," focuses on laying the foundation for teams and leadership. The topics include skills that will 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. May be repeated up to 4 credits.

### Learning Outcomes

1. Identify problems and advantages of living and working in space.
2. Describe what career opportunities exist for future aerospace technicians.
3. Using industrial equipment, demonstrate various fabrication techniques relative to the aerospace industry.
4. Construct electrical control circuits using various techniques.
5. Identify notable people and their accomplishments in the aerospace industry.

## 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 145. Introduction to Drone-UAS Technology 3 Credits (3)

Introduction to drone or Unmanned Aircraft System (UAS) technology and its applications in architecture, engineering, construction, film, media, and other related industries. Best practices, training, permissions, licensing, and documentation requirements will be explored. Obtaining, working with, and managing data obtained by drones will be emphasized. Emerging technologies and future applications will be introduced. Restricted to Dona Ana Campus only.

### Learning Outcomes

1. Describe applications of drone technology by industry.
2. Recognize types of drone data.
3. Provide examples of how drone data can be used in project visualization.
4. Identify standard drone features.
5. Utilize related applications, software, and hardware successfully.
6. Demonstrate professional practices.
7. Describe training, permissions, licensing, and documentation requirements.

8. Identify best practices of UAV use.
9. Process and produce imagery and videos from drone data. 1
10. Perform basic data processing. 1
11. Manage point cloud data. 1
12. Create 3D meshes from drone data. 1
13. Explore emerging technologies and future applications.

## AERT 195. Introduction to Drone - UAS Equipment Operation and Maintenance 4 Credits (4)

Introduction to drone or Unmanned Aircraft System (UAS) equipment operation and maintenance. Flying and maneuvering drones will be practiced. Pre-flight, in-flight, and post-flight procedures will be emphasized. Drone maintenance will be introduced. Restricted to Dona Ana campus only.

**Prerequisite:** A grade of C- or better in AERT 145.

### Learning Outcomes

1. Describe related safety practices and procedures.
2. Discuss related communications requirements.
3. Demonstrate launch preparation steps.
4. Create a basic flight plan.
5. Demonstrate proper preflight, inflight, and post-flight procedures.
6. Describe standard flight operations.
7. Perform basic drone flight and maneuvers.
8. Identify elements of maintenance and inspection programs.
9. Describe related FAA requirements. 1
10. Demonstrate proper equipment and battery maintenance. 1
11. Describe proper parts and material control.

## 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. May be repeated up to 4 credits.

**Prerequisite:** ELT 160.

### Learning Outcomes

1. Apply the appropriate techniques to connect a multimeter correctly to a circuit or component for measuring voltage, current, microfarads, and resistance.
2. Demonstrate the process of troubleshooting basic electrical circuits.
3. Apply the theories and concepts learned to solve practical problems related to electromechanical devices and digital control circuits.
4. Evaluate the advantages and disadvantages of different control methods, such as pneumatic, hydraulic, or electronic control, for specific scenarios.
5. Classify and compare different types of electromechanical devices and digital control circuits, such as pneumatics, hydraulics, DC/AC motors, and stepper motors.

## AERT 212. Materials and Processes (Basic Metallurgy) 3 Credits (2+2P)

Basic Metallurgy: Aluminum and its alloys (Alclad), hardening, tempering, annealing, anodizing, magnetism, titanium, copper, stainless steel, surgical steel, safety wire, iron rust. Metallurgical Processes: Welding and soldering. Inspection Fundamentals: Eddy currents, magnetic particles (ferrous and non-ferrous metals), ultrasonic, x-ray, visual, corrosion

and corrosion control, and vacuum bagging. Restricted to: Community Colleges only. May be repeated up to 3 credits.

**Learning Outcomes**

1. Perform hardness testing.
2. Select the proper type of steel for a given application.
3. Describe the failures and deformation of metal.
4. Interpret Iron-carbon phase diagrams.
5. Summarize the various quenching methods of ferrous metals.

**AERT 213. Aerospace Fluid Systems**

**3 Credits (2+2P)**

This course includes a familiarization of fluid system components, characteristics, and applications. Cryogenic and hypergolic materials and high pressure systems are also covered. Restricted to: Community Colleges only. May be repeated up to 3 credits.

**Learning Outcomes**

1. Recall the basic knowledge and terminology related to hypergol and cryogenic systems in aerospace programs.
2. Identify the potential hazards associated with hypergol and cryogenic systems and the necessary safety measures, including first aid and personal protective equipment.
3. Apply the foundational knowledge to identify and describe the different hardware components used in hypergol and cryogenic systems.
4. Analyze the interactions and interdependencies between hypergol and cryogenic systems and their impact on aerospace programs.
5. Memorize the key concepts and principles of hypergol and cryogenic subsystem design.
6. Comprehend the properties and characteristics of hypergol and cryogenic materials and soft goods.
7. Utilize the entry-level awareness to assess and address the challenges related to hypergol and cryogenic buildup, including operations and ground interactions.
8. Evaluate the potential risks and hazards associated with hypergol and cryogenic systems and propose appropriate mitigation strategies.

**AERT 214. Aerospace Systems**

**3 Credits (2+2P)**

This course provides an introduction to expendable and reusable spacecraft systems including hydraulic, pneumatic, electrical, propulsion, mechanical, HVAC, and ECLSS (Environmental Control and Life Support System). How systems interact with computer and data acquisition systems is also covered. Restricted to: Community Colleges only. May be repeated up to 3 credits.

**Learning Outcomes**

1. Recall the key contents and information covered in the Space Mission and Design Analyses text.
2. Research the role and importance of mission operations and ground interactions in the context of space missions.
3. Employ the knowledge gained from the Space Mission and Design Analyses text to analyze and evaluate spacecraft and subsystem designs.
4. Analyze the complexities and considerations involved in constellation design and the development of multi-satellite systems.
5. Evaluate strategies and techniques for reducing mission costs and designing low-cost missions.
6. Utilize the entry-level awareness to assess and propose solutions for mission operations and ground interactions.

7. Relate the significance of requirements definition, logistics, and system implementation in space systems.

**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. May be repeated up to 3 credits.

**Learning Outcomes**

1. Understand the purpose and function of quality management in aerospace companies.
2. Perform visual and precision inspections from engineering drawings.
3. Acquire practical understanding of Geometric Dimensions and Tolerances, along with proficiency in using specialized measuring equipment.
4. Develop the capability to conduct inspections for FOD, corrosion, and other relevant conditions.

**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. May be repeated up to 3 credits.

**Prerequisite:** ELT 160.

**Prerequisite/Corequisite:** A grade of C- or better in AERT 221 or MAT 240.

**Learning Outcomes**

1. Recall the key concepts and information presented in the Space Mission and Design Analyses book.
2. Describe the principles and theories behind mission operations and ground interactions.
3. Apply the knowledge gained from the Space Mission and Design Analyses book to analyze and evaluate spacecraft and subsystem designs.
4. Analyze the complexities and considerations involved in constellation design and the development of multi-satellite systems.
5. Memorize the foundational knowledge related to spacecraft and subsystem design.
6. Comprehend the significance of requirements definition, logistics, and the implementation of space systems.
7. Apply the knowledge gained from the Space Mission and Design Analyses book to analyze and evaluate spacecraft and subsystem designs.
8. Evaluate strategies and techniques for reducing mission costs and designing low-cost missions.
9. Comprehend the significance of requirements definition, logistics, and the implementation of space systems.

**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. Restricted to Community Colleges Only. May be repeated up to 3 credits.

**Prerequisite/Corequisite:** AERT 221.

**Learning Outcomes**

1. Identify common material defects and their causes.
2. Understand the theory of various forms of material inspections and perform basic operation on multimeters, and oscilloscopes.
3. Identify common aerospace materials.
4. Apply professional productive work habits.

**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 245. Remote Pilot Certificate Test Preparation****3 Credits (3)**

Preparation course for the FAA Unmanned Aircraft General – Small (UAG) aeronautical knowledge exam. Overview of applicable regulations, restrictions, procedures, and operations will be provided. Process for obtaining an FAA Tracking Number (FTN), registering for the FAA Unmanned Aircraft General – Small (UAG) aeronautical knowledge exam, and certificate registration requirements will be explored. Restricted to Dona Ana campus only.

**Prerequisite:** AERT 195.

**Learning Outcomes**

1. Demonstrate increased knowledge related to topics covered in the FAA UAG exam.
2. Demonstrate increased skills related to topics covered in the FAA UAG exam.
3. Demonstrate increased abilities related to topics covered in the FAA UAG exam.
4. Describe processes related to obtaining a FAA Unmanned Aircraft General – Small (UAG) aeronautical certificate.
5. Practice certification test-taking skills.

**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.

## AFST-AFRICANA STUDIES

**AFST 1110G. Introduction to Africana Studies****3 Credits (3)**

An interdisciplinary course that introduce students to the histories, cultures, and experiences of global people of African descent. NMSU Specific Description This course presents a survey of the experiences of Blacks across the African Diaspora with particular attention given to the experience of Blacks in the United States. This course will examine the experiences of Black people across various disciplines and fields of academic inquiry. African people, and their descendants across the diaspora, have contributed to the political, cultural, economic, and social landscape of the world. This course will assist you in understanding the Black/Africana experience in the U.S. and around the world.

**Learning Outcomes**

1. Students will carry out critical analysis and engagement with complex, interdependent global systems and legacies (natural,

physical, social, cultural, economic, and political) and their implications for people's lives and the earth's sustainability.

2. Students will explore issues/objects/works through collection and analysis of evidence that result in informed conclusions/judgments, understanding and analysis of critical literacy and ethics pertaining to the dynamics of diversity, equity, inclusion and social change.
3. Students will examine habits of mind characterized by the comprehensive exploration of issues, ideas, artifacts and events related to diversity, equity and inclusion before accepting or formulating an opinion or conclusion.
4. Students will demonstrate the capacity to combine or synthesize existing ideas, images, or expertise in original ways.
5. Students will prepare, purposeful presentations designed to increase knowledge, foster understanding, or promote change in listener's values, beliefs, or behaviors pertaining to the dynamics of diversity, equity, inclusion and social change.
6. Students will develop and express ideas in writing and learning in many genres and styles using different writing technologies, mixing texts, data and images that relate to the dynamics of diversity, equity, inclusion and social change.
7. Students will show the ability to reason and solve quantitative problems from a wide array of authentic contexts and everyday life situation.
8. Students will demonstrate the ability to know a need for information or visual literacy and understanding of the dynamics of historic and contemporary inequality and how they shape individual and community power, biases, structural arrangements and social justice bias.
9. Students will enact behaviors and efforts and interact with others on the team to enhance the quality and quantity of contributions made to team discussions. 1
10. Students will design, evaluate and implement strategies to answer open-ended questions in multiple ways. 1
11. Students will work to make a difference in the civic life of communities and develop the combination of knowledge, skills and values and motivation to make a difference. 1
12. Students will develop their cognitive, affective and behavioral skills and characteristics to support effective and appropriate interaction in a variety of cultures. 1
13. Students will develop their ethical self-identity as they practice ethical decision making skills while learning how to describe and analyze positions on ethical issues. 1
14. Students will engage in self-reflection regarding one's own history and position in contemporary U.S. society as well as in a global context. 1
15. Student learners will connect perspectives and integrate relevant experience and academic knowledge from multiple disciplines.

**AFST 2110G. African American History****3 Credits (3)**

This course surveys the long and turbulent journey of African-Americans, the rich culture they have cultivated, and their persistent struggle for freedom from the perspective, interests, aspirations, possibilities and envisioned destinies of African descended peoples. From African antiquity to the 21st century, students will study: 1) The African background; 2) The Holocaust of Enslavement; 3) Black Resistance and Abolition; 4) Reconstruction; 5) The Jim Crow Era; 6) Civil Rights and Black Power, and; 7) The Post-Industrial/Post Civil Rights Era. (unique)

**Learning Outcomes**

1. Demonstrate a full ability to analyze and interpret how enslavement and oppression shape the racial, gendered, social, economic, and political realities of African descended people in the U.S.
2. Recognize and respond to ethical challenges/social justice issues that affect African American people.
3. Acquire a critical understanding of the human condition.

**AFST 2140G. Black Women in the African Diaspora  
3 Credits (3)**

This survey course reviews the contributions of Black women to the Black Diasporic Story. NMSU Specific Description This course critically surveys Black women's history and experiences across the African Diaspora. Particular attention is given to Black women's experiences in North America. Some of the topics covered include: Black women and the building of nation-states; Black women in the U.S. slave system; Black women in race and gender movements in the U.S. and Latin America; systemic and institutionalized violence against Black women; Black motherhood; Black Latinas and the politics of identity; representations of Black women in popular culture; radical activism and Black lesbian identity, as well as the emergence and growth of Black feminist theory and selected other topics. In addition, students will engage in an autobiographical project on a Black woman they select to study.

**Learning Outcomes**

1. Students will gain theoretical knowledge of the field of Black feminist thought.
2. Students will explore the relationship between Black feminist theory and the larger more general body of work on feminism.
3. Students will study the historical, political and social experiences of Black women in the Americas.
4. Students will understand the intersecting relationship between race, gender, class and sexuality.
5. Students will critically analyze the representations of Black women in popular culture.

**AFST 4110. Race, Culture, and Education  
3 Credits (3)**

This course deconstructs the history of education through the lens of culture and race. Using an intersectionality framework, the creation of public education, and the impact of historical shifts within the law concerning education will be examined. Special emphasis is placed on the role of ethnicity in the development of the United States and its education system. Includes an overview of multicultural/multilingual curricula with a special focus on culturally / linguistically responsive instruction and assessment practices. This course provides a critical examination of race and culture using multicultural theoretical frameworks to analyze the conditions of education today.

**Learning Outcomes**

1. Analyze and interpret the historical, philosophical, economic, and sociocultural elements of education as it relates to race and culture.
2. Evaluate and interpret the ways in which education policies influence and are influenced by equity issues.
3. Describe multicultural education initiatives and assumptions about teaching, learning, and knowing.
4. Understand how cultural groups and students' cultural identities affect language learning and education overall.
5. Explain and provide examples of anti-bias teaching strategies and education practices.

## 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 and readings.

**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.

**Learning Outcomes**

1. Varies

## AHS-ALLIED HEALTH SCIENCE (AHS)

**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 150.

**Learning Outcomes**

1. By the conclusion of this course, the student should be able to identify and translate common medical prefixes.

2. By the conclusion of this course, the student should be able to identify and translate common medical and surgical suffixes.
3. By the conclusion of this course, the student should be able to identify and translate common medical root words.
4. By the conclusion of this course, the student should be able to construct and deconstruct medical terms.

#### **AHS 140. Essentials of Anatomy and Physiology**

##### **4 Credits (3+3P)**

Essentials of anatomy and physiology for those considering a career in health as well as those interested in understanding their own body and the basics of health.

#### **AHS 153. Introduction to Anatomy and Physiology I**

##### **4 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)**

This course provides an overview of the legal and ethical considerations guiding the relationships and actions of healthcare professionals, researchers, and policymakers. By reviewing real case studies, learners will explore the legal and ethical implications of their actions for their employers, patients, and families.

##### **Learning Outcomes**

1. Apply health care ethical principles to medical case studies.
2. Outline the legal system in the United States and its importance to health care professionals.

3. Describe basic legal terms and doctrines related to medical provider/patient relationships.
4. Describe workplace laws and ethics.
5. Discuss the public duties of health care professionals, professional liability, and medical malpractice.
6. Discuss issues associated with patient confidentiality and record keeping in the electronic age.
7. Discuss bioethical issues associated with health care, such as human reproduction, genetic manipulation, euthanasia, and withholding and/or withdrawing life-sustaining treatment.

#### **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)**

Survey of the livestock industry throughout the world. Basic management practices will be covered, including livestock selection, nutrition, reproduction, anatomy and marketing to the consumer. This course will also discuss animal behavior and welfare.

#### **Learning Outcomes**

1. Understand the role of farm animals in a global setting.
2. Describe the role of nutrition, breeding, behavior, welfare, and physiology of livestock in the world.
3. Explain the structure and organization of livestock industries.
4. Discuss concepts and terminology of the livestock industries as they relate to the global perspective.
5. Classify the overall management, care, marketing of animals, represented in the various livestock industries.

#### **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 1125. Equestrian Team Competition**

##### **1 Credit (1)**

Basic principles of equestrian team competition, including care and management of the riding horse, equitation equipment, and development of riding skills. Emphasis will be placed competition within the Intercollegiate Horse Show Association. Consent of Instructor required. May be repeated up to 8 credits.

#### **Learning Outcomes**

1. Have a general knowledge of horses and basic horsemanship/equitation position.
2. Explain and demonstrate basic techniques of balance, control, and safety skills while being in contact and mounted on a horse.
3. Explain and demonstrate proper handling and safety around horses and the proper care of the stable and tack.
4. Be able to ride unassisted at the walk, jog, and lope in either English or Western tack.
5. Apply general knowledge of horsemanship and equitation to competitive equine events in a safe manner including equitation on the flat, equitation over fences, horsemanship, ranch riding and reining.

#### **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.
3. Gain a greater perspective of accounting, economic and financial principles in an equine business 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.

#### **ANSC 2330. Animal Production**

##### **3 Credits (2+2P)**

Production and utilization of beef cattle, sheep, and swine; emphasis on feeding, breeding, management problems and marketing; selection of animals for breeding and market

#### 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.

#### ANSC 2340. Genetics in Animal Science

##### 3 Credits (3)

Introduction to genetics and inheritance relative to livestock production. Introduction to procedures for collection and use of performance information in livestock improvement programs.

**Prerequisites:** BIOL 2610G.

#### Learning Outcomes

1. Gain a broader understanding of the role genetic impacts in the livestock industry.
2. Employ an increased knowledge of impact of genetics in the food animal industry and the production and economic principles that apply.
3. Recognition of the global impacts of genetics in the food animal industry in a global setting.

#### ANSC 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.

#### Learning Outcomes

1. Varies

## ANTH-ANTHROPOLOGY (ANTH)

#### 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 methods that anthropologists use to study our species and gain a broader perspective on the human experience.

#### Learning Outcomes

1. Describe and summarize terms, approaches, and cultural and biological adaptations in the four subfields of anthropology.
2. Explain and analyze conceptual and ethical arguments in the four subfields of anthropology.
3. Effectively communicate content, perspectives, and ideas in four subfields of anthropology.
4. Critically evaluate sources, approaches, and arguments in the four subfields of anthropology.

#### 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.

**Corequisite:** ANTH 1135L.

#### Learning Outcomes

1. Summarize the basic principles of evolution and recognize how they apply to the human species.
2. Recognize the biological and behavioral continuity of humans with all life, and especially other modern primate species.
3. Identify ways in which the human species is biologically and behaviorally unique.
4. Summarize fossil evidence for human evolution.
5. Distinguish the major Paleolithic industries and outline the behavioral and cognitive changes indicated by the fossil and archeological evidence.
6. Critically evaluate popular accounts of human variation and human evolution.
7. Interpret modern human dilemmas (e.g., overpopulation, co-evolution of disease, and genetic engineering) from an evolutionary perspective.
8. 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 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. **Corequisite(s):** ANTH 1135G

#### Learning Outcomes

1. Demonstrate an understanding of the scientific method.
2. Employ principles of Mendelian genetics to determine genotype and phenotype probabilities, and calculate gene, genotype, and phenotype frequencies using the Hardy-Weinberg Equilibrium formula.
3. Demonstrate an understanding of cell structure and functions.
4. Use common lab and anthropometric equipment such as a compound microscope and calipers.
5. Discuss primate evolution, and compare and contrast members of the Primate order in terms of structure, behavior, and phylogeny.
6. 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.
7. Locate and describe the major bones of the human skeleton, and identify characteristics of human skeletons or skulls such as gender, age, and ancestry.
8. Discuss current research in genome analysis of various hominid 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 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, 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. May be repeated up to 3 credits.

**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).
2. Comprehend the importance of studying cultural anthropology.
3. 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).
4. 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.
5. Understand how beliefs, values and assumptions are influenced by culture, biology, history, economic, and social structures.
6. Gain a sense of relationship with people possessing different experiences from their own.
7. 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 people
8. Become more sensitive and engaged global citizens from culturally relative perspectives.

**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 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-ARCHITECTURE

**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 1
10. Develop analytical and critical thinking skills

#### **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 sin 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 increase knowledge of important elements of architecture and design 1
10. 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 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. 1
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. 1
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 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 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 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. 1
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. 1
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.

**Prerequisites:** 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 2124. Professional Development and Leadership**

##### **1-3 Credits (1-3)**

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. May be repeated up to 6 credits.

##### **Learning Outcomes**

1. Leadership skills.
2. Presentation techniques and public speaking.
3. Organizational and teambuilding 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 pre-historic 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
2. Apply art specific vocabulary to critically-based writings and discussions of art
3. Develop writing skills to articulate the relationship of art to the human experience

**ARTH 2996. Special Topics in Art History**

**3 Credits (3)**

Presents various topics. May be repeated up to 9 credits.

## ARTS-ART STUDIO

**ARTS 1121. Studio Core I: Concept Development-Process and Play**

**3 Credits (2+4P)**

This course is designed to introduce students to the process of making art from conception through research and execution without the expectation of technical proficiency in any one media area. This course focuses 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.

**ARTS 1122. Studio Core II: Formal Structure Tools & Techniques**

**3 Credits (3)**

Introduce students to formal design concepts as well as to various technical skills and tools in order to explore and develop innovative forms of artistic expression.

**Learning Outcomes**

1. Analyze and interpret visual elements within artworks, recognizing the application of formal design concepts.
2. Demonstrate an understanding of how formal design concepts contribute to effective visual communication and apply an understanding of how aesthetics enhance the overall impact and quality of artistic creation.
3. Explore and apply technical skills across a range of artistic mediums, including traditional and digital formats.

**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 or 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.

##### **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 1543. Digital and Analog Drawing: Bridging Tradition and Technology**

##### **3 Credits (3)**

An introduction to the historical foundations and contemporary potential of drawing that combines digital and traditional approaches. Students will develop their ability to create and manipulate images by hand and with the aid of a computer, and learn to compare, translate, and integrate visuals made by old and new technologies. Students will gain a better understanding of digital tools, their expressive capacities, and their application within the context of drawing.

#### **Learning Outcomes**

1. Demonstrate proficiency in traditional drawing fundamentals (including line, value, perspective, and proportion) as well as the formal principles of composition.
2. Develop a working knowledge of traditional drawing materials and supports; digital drawing and 3d-modeling software, such as Adobe Photoshop, Adobe Illustrator, and SketchUp and competency in hardware (including scanners, printers, vinyl/laser cutters, monitors, and projectors).
3. Apply observational drawing skills to digital drawing while demonstrating an understanding of digital drawing's unique materiality.
4. Demonstrate critical thinking and problem-solving skills through the analysis and critique of traditional and digital drawings.
5. Understand historical foundations of drawing and articulate how this intersects with contemporary technologies and approaches.

#### **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.

#### **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.

**Prerequisite:** 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.
2. Create design sketches of the objects prior to fabrication.
3. Demonstrate knowledge of materials and safe practices for making jewelry, as well as small functional and non-traditional objects.
4. 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 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 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 in drawings.
3. Compose fully developed drawings that include a conceptual or historical basis.
4. 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.
4. Knowledge of the proper use and maintenance of painting tools
5. Explore and learn the technique of a master painter of the past.
6. Awareness of nature, "eye hand response," and an imaginative or personal use of the medium.
7. Awareness of the creative process, exploring unforeseen possibilities
8. An ability to work independently.
9. 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 to Astronomy Lecture & Laboratory 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. May be repeated up to 4 credits.

#### 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 the scale of the Solar System, Galaxy, and the Universe.
4. Students will explain telescope design and how telescopes and spectra are used to extract information about Astronomical objects.
5. Students will describe the formation scenarios and properties of solar system objects.
6. Students will describe gravity, electromagnetism, and other physical processes that determine the appearance of the universe and its constituents.
7. Students will describe methods by which planets are discovered around other stars and current results.
8. Students will describe the structure, energy generation, and activity of the sun.
9. Students will compare our sun to other stars and outline the evolution of stars of different masses and its end products, including black holes. 1
10. Students will describe the structure of the Milky Way and other galaxies and galaxy clusters. 1
11. Students will describe the origin, evolution, and expansion of the universe based on the Big Bang Theory and recent Astronomical observations. 1
12. 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. , at some other institution). 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 Lecture & Laboratory 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. May be repeated up to 4 credits.

#### 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 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.
2. Diagnosis and demonstrate knowledge of series, parallel, and combination circuits, and their applications as applied to automotive repair.
3. Demonstrate use of wiring diagrams as a diagnostic aide.
4. Demonstrate use of meters, handheld labsopes, scan tools, and other diagnostic equipment.
5. Demonstrate use of repair manuals, both hard copy and electronic.
6. Demonstrate knowledge, diagnose and repair Air Bag Supplemental Inflatable Restraint systems
7. Demonstrate knowledge, diagnose and repair various convenience electronic systems.
8. Interpret customer concerns, create and complete a diagnostic routine and successfully repair an electrical problem.
9. Diagnose and repair starting and charging systems.

**AUTO 115. Automotive Engine Repair****4 Credits (2+4P)**

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.

**Learning Outcomes**

1. Understand internal combustion engine theory.
2. Identify all components of an engine and their function.
3. Identify worn engine components and determine necessary repairs.
4. Effectively present engine issues and corrections using verbal and written communication.
5. Diagnose cooling system issues and the effect on various components.
6. Rebuild/ reassemble an engine to specifications.
7. Understand the operation and rationale of forced induction.
8. Identify methods of increasing engine efficiency.

**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 123. Job Shadowing****1 Credit (1)**

Observing a professional in a real-world work setting, while gaining on-the-job training. Student will meet in a weekly class or online.

**Learning Outcomes**

1. Work with colleagues in the diagnosing and repair of automobiles.
2. Understand basic tool needs to meet industry requirements.
3. Prepare for various pay scales (straight time, flat-rate, hourly).
4. Understand daily operations in a live shop setting.
5. Understand the roles in the automotive field to include Technician, Service Writer, Shop Foreman, and Service Manager.

**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 160. Hybrid\Electric Vehicles**

**4 Credits (2+4P)**

Theory and operation of Hybrid and Electric vehicles with emphasis on electrical motor subsystems and battery management systems.

**Prerequisite:** AUTO 113, AUTO 115.

**Prerequisite/Corequisite:** AUTO 205.

#### **Learning Outcomes**

1. Use automotive scanners and test equipment effectively.
2. Explain the difference between hybrid and electrical vehicles.
3. Identify faulty electrical components and determine necessary repairs.
4. Effectively present issues and corrections using verbal and written communication.
5. Demonstrate proper safety when working with hybrid/EV batteries.
6. Demonstrate knowledge of differences between hybrid and fully electric vehicles and their benefits.
7. Perform routine service on hybrid and electric vehicles.

#### **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 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 200. Engine Performance**

**4 Credits (2+4P)**

Theory and operation of ignition, emission control systems, fuel systems, and exhaust systems. Use of troubleshooting and diagnostic equipment. May be repeated up to 4 credits.

**Prerequisite/Corequisite:** AUTO 113, AUTO 115.

#### **Learning Outcomes**

1. Use automotive scanners and test equipment effectively
2. Identify all emission control components of an engine and their function
3. Identify faulty ignition components and determine necessary repairs
4. Effectively present engine issues and corrections using verbal and written communication
5. Diagnose fuel system issues and the effect on various components
6. Demonstrate knowledge of differences between different fuel delivery methods and their benefits
7. Understand the operation and rationale of forced induction
8. Identify methods of increasing engine efficiency

#### **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.
2. Be able to explain basic and advanced engine designs and engine operating theory.
3. Be able to explain engine cooling and lubricating systems.
4. Be able to explain intake and exhaust systems
5. Test battery, starting and charging systems
6. Test ignition systems including point type, electronic trigger type, and distributor-less systems.
7. Test automotive fuel system including fuel tanks, lines, filters and pumps.
8. Test basic electronic fuel injection systems.
9. Test automotive computer input devices and controlled devices
10. Demonstrate ability to work with PC based automotive software including Alldata,

**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 210. Light Diesel**

**4 Credits (2+4P)**

Theory and operation of light duty diesel engines with emphasis on highway diesel usage including major engine subsystems and fuel management systems.

**Prerequisite/Corequisite:** AUTO 113, AUTO 115.

**Learning Outcomes**

1. Use automotive scanners and test equipment effectively.
2. Identify all emission control components included on diesel engines and their function.

3. Identify faulty emission components and determine necessary repairs.
4. Effectively present engine issues and corrections using verbal and written communication
5. Diagnose fuel system issues and the effect on various components.
6. Demonstrate knowledge of differences between different fuel delivery methods and their benefits.
7. Understand the operation and rationale of forced induction.
8. Identify methods of increasing engine efficiency.

**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. demonstrate proficiency in the proper use of scanners, information and vehicle specifications to determine needed repairs
11. 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.

## **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 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 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 2996. Special Topics**

**1-4 Credits (1-4)**

Specific subjects and credits to be announced in the Schedule of Classes. Student can only take up to 6 credits per semester, and will not be able to have more than 12 credits count towards their degree. May be repeated up to 12 credits.

**Learning Outcomes**

1. Varies

### **AXED 3105. Introduction to Special Education in Career and Technical Education**

**3 Credits (3)**

Characteristics, identification, and educational needs of exceptional learners. Attention is given to the various types of programs serving exceptional learners. Designed for all professional personnel who work with exceptional learners. Specific strategies for working with students with special needs in a shop or laboratory setting within the Career and Technical Education environment will be included.

**Learning Outcomes**

1. Discuss historical and current legislation pertaining to exceptional learners and their families and its impact on professional practice in the field.
2. Discuss historical and current legislation pertaining to exceptional learners and their families and its impact on professional practice in the field.
3. Explain the major components of an IEP and its processes, as well as the roles of learners, families and professionals on the team.



4. Discuss the different service delivery models and discuss the principles, practices, and pragmatics of inclusion co-teaching.
5. Analyze the disability categories under IDEA, 2004; characteristics, etiology, and diagnostic criteria.
6. Examine educational considerations for exceptional learners (educational approaches [Universal design and differentiated instruction], assistive technology, accommodations, modifications, and related supports and services).
7. Employ culturally responsive evidence-based practices to create family/school/community partnerships to promote academic achievement and prepare students for their post-school transitions.
8. Evaluate and synthesize research literature on a selected topic from current special education research.
9. Develop hands-on laboratory activities and educational strategies that are appropriate for a wide variety of learners.

#### **AXED 3115. Small Engine Technology**

##### **3 Credits (2+2P)**

Development of competencies in small gasoline engines; theory, operation, design, maintenance and safety. Designed for any major wishing to improve mechanical skills needed in agriculturally related occupations in education and industry. May be repeated up to 3 credits.

#### **AXED 3120. Agricultural Structures**

##### **3 Credits (2+3P)**

Selection and use of agricultural building materials. Design, construction, and maintenance of agricultural structures. Development of competencies in carpentry, concrete, electricity, masonry, and safety. Designed for any major wishing to improve mechanical skills needed in agriculturally related occupations in education and industry. May be repeated up to 3 credits.

#### **AXED 3130. Advanced Technology in the Agricultural Mechanization**

##### **3 Credits (2+3P)**

Students will construct a project in the area of agricultural mechanization under the direction of instructor. Project must be completed within a semester and of sufficient complexity for 3 credits.

**Prerequisite:** AXED 1130 and AXED 2110 or consent of instructor.

#### **AXED 3150. Philosophy and Methods of Contests**

##### **3 Credits (3)**

Covers the roles that career development events (contests) play in agricultural and technology education and in extension programs. Topics include competition and cooperation, winning and losing, ethics, use of community resources, and academic and employability skills taught through contests. Coaching as a teaching method is introduced and expanded. Students will assist with the coordination of various career development events. May be repeated up to 3 credits.

#### **AXED 3210V. John Muir: Lessons in Sustainability**

##### **3 Credits (3)**

This course examines the life of John Muir in the context of sustainability. Muir was a farmer, inventor, explorer, botanist, glaciologist, conservationist, and noted nature author. He was influential in the National Parks movement and in starting the Sierra Club. Living in the natural world influenced his faith and philosophy. By examining his life and the themes that shaped it, students will develop an understanding of what it means to live sustainably and to contribute beyond their personal lives to a sustainable future. May be repeated up to 3 credits.

#### **AXED 3996. Special Topics**

##### **1-4 Credits (1-4)**

Course addresses specific subjects and issues as identified by department. Topics and credits to be announced in the Schedule of

Classes. Students can only take up to 4 credits per semester and no more than 6 credits of the course may be applied to a degree. May be repeated up to 12 credits.

#### **Learning Outcomes**

1. Various

#### **AXED 4110. Management of Change, Diffusion, and Adoption of Innovations**

##### **3 Credits (3)**

Factors that influence the rates of diffusion and adoption of innovations. Consequences of adopting or rejecting innovations. Processes by which change agents influence introduction and adoption of innovations.

Taught with AXED 5110. May be repeated up to 3 credits.

#### **Learning Outcomes**

1. Critically examine the adoption-diffusion model. Included are issues such as social class differentials in the dissemination of ideas and technology, non-adoption as a form of behavior, social and economic constraints on adoption behavior, and the consequences of adoption at both the individual and social levels.
2. Demonstrate understanding of how the rapid pace of change in technology and applied science may have good and bad outcomes.
3. Discuss the dissemination of new ideas and technology within various social units.
4. Discuss the applications of the adoption-diffusion model from the perspective of the change agent.
5. Enhance the development of leadership skills required to work with people in times of change.

#### **AXED 4210. Curriculum Development and Assessment in Agricultural Education**

##### **3 Credits (3)**

This course prepares students to develop curriculum, design lessons, and prepare appropriate assessments in an agricultural education setting. An emphasis will be placed on the developing curriculum using the currently established resources that are available to agriculture teachers.

**Prerequisite:** 2.5 GPA.

#### **AXED 4215. Developing Excellent Programs in Career and Technical Education**

##### **3 Credits (3)**

Students learn to develop excellence in the three components of a successful secondary school program in career and technical education: classroom and laboratory instruction, career and technical student organizations, and career development activities. Community-based program planning, utilizing partners, program marketing, and professional development are addressed as strategies for achieving excellence. Methods of obtaining financing and maintaining accountability for the program are discussed. May be repeated up to 3 credits.

#### **AXED 4220. Methods for Teaching Agricultural and Technology Education**

##### **3 Credits (3)**

Methods of instruction and presentation, selection of teaching aids and support materials, classroom management, development of a complete educational program, and microteaching experiences. May be repeated up to 3 credits.

**Prerequisite:** GPA of 2.5 or above.

#### **AXED 4230. Directed Teaching in Agricultural or Technology Education**

15 Credits (15)  
Semester-long off-campus professional experience in directed teaching and observation provided in selected centers under secondary agricultural or technology education supervising teachers. Consent of Instructor required.

**Prerequisite:** AXED 4215, AXED 4220 and consent of instructor.

**AXED 4235. Directed Teaching in Extension Education**  
**3-12 Credits (3-12)**

Four-to-fourteen-week, professional experiences in directed teaching and observation provided in cooperative extension at the county, regional, or state level. Consent of instructor required. May be repeated up to 12 credits.

**AXED 4330. Content Area Literacies**  
**3 Credits (3)**

Surveys integrated reading/writing/discursive practices in middle/secondary content areas.

**Learning Outcomes**

1. Analyze literacy processes, as they pertain to adolescent learners.
2. Discuss current trends and issues in content area literacy instruction with a specific focus on practices that promote achievement and equity.
3. Evaluate instructional practices that help students use reading, writing, speaking, listening, viewing and visually representing to learn the content areas.
4. Illustrate ethical reasoning and decision making in your approach to content area literacy education.
5. Integrate research, reflection, and best practices that positively impact students in a diverse society.

**AXED 4510. Introduction to Research Methods**  
**3 Credits (3)**

Introduction to research design and methodology in education and behavioral sciences. Overview of common research designs and data collection strategies. Prepares students to critique published research and understand basic skills including hypothesis development and conducting a literature search. Students must be in junior standing to enroll. May be repeated up to 3 credits.

**AXED 4520. Methods in Career and Technical Laboratory Instruction**  
**2 Credits (2)**

For students planning to teach agricultural or technology education at a secondary or postsecondary level. Focus on planning, delivering, and evaluating instruction in laboratories; and on CPR, first aid, and NCCER certifications. Laboratory safety and tool, equipment, and laboratory management systems are also emphasized. Restricted to AXED Majors. May be repeated up to 2 credits.

**AXED 4610. Leadership On Agricultural and Natural Resource Issues**  
**3 Credits (3)**

Investigates leadership concepts and group dynamics as they relate to a changing world and complex agricultural and natural resource issues. Topics include emotional intelligence, leading change, political leadership, facilitating agreement, team building, and managing conflict in agricultural and natural resource settings. May be repeated up to 3 credits.

**AXED 4620. Methods of Teaching Biological, Earth and Physical Sciences in Agriculture**  
**3 Credits (3)**

Students learn to set up and teach in a modular agriscience laboratory, utilizing a variety of technologies. Modules covered focus on incorporating biological, earth and physical sciences into agricultural instruction and may include: Tissue culture, animal anatomy, hydroponics microscopy, electrophoresis, microbiology, soils and plant nutrients, water quality, water systems, entomology, integrated pest management, and renewable energy applications. Students develop their own modules and/or experiments.

**AXED 4710. 4-H Youth Development**  
**1 Credit (1)**

On-line course explores 4-H Youth Development as an integral part of the Cooperative Extension Service. Topics to be addressed include mission, philosophy, delivery modes, audiences and partnerships. Course is relevant for anyone interested in pursuing a career in Cooperative Extension. May be repeated up to 1 credit.

**AXED 4715. The FFA Organization: An Overview**  
**1 Credit (1)**

Online course addressing the history, mission, philosophy and structure of the New Mexico and National FFA Organizations and their relationship to supervised agriculture experiences and the agricultural education curriculum. Course is relevant for anyone interested in pursuing a career in agricultural education. May be repeated up to 1 credit.

**AXED 4991. Undergraduate Research**  
**1-4 Credits (1-4)**

Research experience in agricultural, extension, and technology education with applications to selected issues and problems. May be repeated up to 4 credits.

**AXED 4997. Independent Study in Agricultural, Extension, or Technology Education**  
**1-3 Credits (1-3)**

Specific subjects are agreed upon by the student and instructor. Students must be juniors or seniors to enroll. May be repeated up to 6 credits.

**AXED 5105. Introduction to Special Education in Career and Technical Education**  
**3 Credits (3)**

Characteristics, identification, and educational needs of exceptional learners. Attention is given to the various types of programs serving exceptional learners. Designed for all professional personnel who work with exceptional learners. Specific strategies for working with students with special needs in a shop or laboratory setting within the Career and Technical Education environment will be included.

**Learning Outcomes**

1. Discuss historical and current legislation pertaining to exceptional learners and their families and its impact on professional practice in the field.
2. Discuss historical and current legislation pertaining to exceptional learners and their families and its impact on professional practice in the field.
3. Explain the major components of an IEP and its processes, as well as the roles of learners, families and professionals on the team.
4. Discuss the different service delivery models and discuss the principles, practices, and pragmatics of inclusion co-teaching.
5. Analyze the disability categories under IDEA, 2004: characteristics, etiology, and diagnostic criteria.
6. Examine educational considerations for exceptional learners (educational approaches [Universal design and differentiated instruction], assistive technology, accommodations/modifications, and related supports and services).
7. Employ culturally responsive evidence-based practices to create family/school/community partnerships to promote academic achievement and prepare students for their post-school transitions.
8. Evaluate and synthesize research literature on a selected topic from current special education research.
9. Develop hands-on laboratory activities and educational strategies that are appropriate for a wide variety of learners.

**AXED 5110. Management of Change, Diffusion, and Adoption of Innovations****3 Credits (3)**

Factors that influence rates of diffusion and adoption of innovations. Consequences of adopting or rejecting innovations. Processes by which change agents influence introduction and adoption of innovations. Taught with AXED 4110 with differential assignments for graduate students. May be repeated up to 3 credits.

**Learning Outcomes**

1. Critically examine the adoption-diffusion model. Included are issues such as social class differentials in the dissemination of ideas and technology, non-adoption as a form of behavior, social and economic constraints on adoption behavior, and the consequences of adoption at both the individual and social levels.
2. Demonstrate understanding of how the rapid pace of change in technology and applied science may have good and bad outcomes.
3. Discuss the dissemination of new ideas and technology within various social units.
4. Discuss the applications of the adoption-diffusion model from the perspective of the change agent.
5. Enhance the development of leadership skills required to work with people in times of change.

**AXED 5130. Advanced Agricultural Mechanization****3 Credits (3)**

This course provides an overview of advanced agriculture mechanization techniques and concepts. Precision farming tools and applications will be introduced, and hands-on activities will be utilized. A discussion about applications and benefits will frame the course lectures.

**Learning Outcomes**

1. Describe and classify various precision agriculture software/hardware technologies
2. Demonstrate usage of various precision agriculture technologies
3. Understand decision making processes associated with implementation of precision agriculture technologies
4. Analyze the costs, time, and application of precision agriculture technologies

**AXED 5150. Strategic Communications Campaigns and Evaluation****3 Credits (3)**

Client-based marketing and communication needs for stakeholders in agricultural and life sciences. Students will learn brand awareness for agricultural stakeholders by developing a campaign of communications and marketing materials using multiple channels (e.g., written, visual, social). Students will also evaluate the materials for their audience reach, visibility, and effectiveness. Strategic communications involve planning, prioritizing, and evaluating. Students will gain experience implementing these needs with a real-world client to keep materials relevant to industry demands. May be repeated up to 3 credits.

**Learning Outcomes**

1. Identify communications-related needs with a client or stakeholder in the food, agricultural, natural resources, and human (FANH) sciences.
2. Define priority communications areas to address client or stakeholder needs.
3. Direct a communications plan with channels, tactics, steps, and timelines.
4. Develop a campaign of communications materials (e.g., written, visual, social) around a client's needs.
5. Evaluate the reach, visibility, and effectiveness of the communications materials.

6. Manage a client's brand with desired audiences through establishing, promoting, and reinforcing messages.

7. Publish portfolio materials showcasing the client's brand.

**AXED 5155. Youth Program Development and Management****3 Credits (3)**

Designed for professionals involved in youth group activities. Basic concepts in planning, conducting, and managing educational youth programs in a variety of organizations. Taught with AXED 415 with differentiated assignments for graduate students. May be repeated up to 3 credits.

**AXED 5160. Teaching Adults in Nonformal Settings****3 Credits (3)**

The adult and postsecondary learner; adult learning styles and principles; use of community resources and problem-solving techniques; and learning strategies for adults in formal and nonformal education. Taught with AXED 430 with differentiated assignments for graduate students. May be repeated up to 3 credits.

**AXED 5165. History and Philosophy of Agricultural and Extension Education****3 Credits (3)**

History and Philosophy of Agricultural and Extension Education serves as a foundational core of graduate studies in Agricultural and Extension Education. The design of the course is to acquaint the student with a broad perspective of cultural and historical conditions that have shaped both education and agricultural education as we know it today. The primary purpose of this course is to explore the nature of selected philosophical concepts and philosophers and to evaluate their influence upon education and agricultural/extension education in the United States. In addition to philosophical influences, students will examine the historical events and governmental laws and policies that have evolved and developed our educational system of today.

**Learning Outcomes**

1. Understand the principles of philosophy in education and agricultural and extension education.
2. Recognize the influence of philosophers and philosophical documents upon education and agricultural and extension education.
3. Analyze the historical foundations that have established our modern educational system.
4. Develop a personal philosophy regarding education and agricultural education.

**AXED 5170. Keys for Agricultural and Rural Development****3 Credits (3)**

Introduction to concepts of development, the process of change, key factors that contribute to agricultural and rural development in a community, and strategies employed to effect change with implications for international students or domestic students planning to work internationally. May be repeated up to 3 credits.

**AXED 5210. Curriculum Development and Assessment in Agricultural Education****3 Credits (3)**

This course prepares students to develop curriculum, design lessons, and prepare appropriate assessments in an agricultural education setting. An emphasis will be placed on the developing curriculum using the currently established resources that are available to agriculture teachers.

**Prerequisite:** 2.5 GPA.

**AXED 5215. Developing Excellent Programs in Career and Technical Education****3 Credits (3)**

Students learn to develop excellence in the three components of a successful secondary school program in career and technical education: classroom and laboratory instruction, career and technical student organizations, and career development activities. Community-based program planning, utilizing partners, program marketing, and professional development are addressed as strategies for achieving excellence. Methods of obtaining financing and maintaining accountability of the program are discussed. Taught with AXED 445 with differentiated assignments for graduate students. May be repeated up to 3 credits.

**AXED 5220. Methods for Teaching Agricultural and Technology Education**  
**3 Credits (3)**

Methods of instruction and presentation, selection of teaching aids and support materials, classroom management, development of a complete educational program, and microteaching experiences. Taught with AXED 446. May be repeated up to 3 credits.

**Prerequisite:** GPA of 3.0 or above.

**AXED 5230. Directed Teaching in Agricultural or Technology Education**  
**4-9 Credits (4-9)**

Semester-long off-campus professional experience in directed teaching and observation provided in selected centers under secondary agricultural and technology supervising teachers. Students need to have completed a teaching methods class prior to enrolling in this course. Consent of Instructor required.

**AXED 5235. Directed Teaching in Extension Education**  
**4-9 Credits (4-9)**

Four- to fourteen-week professional experiences in directed teaching and observation provided in cooperative extension at the county, regional, or state level. Taught with AXED 448 with reduced credit hours for graduate students. Restricted to AXED majors. May be repeated up to 9 credits.

**AXED 5310. New Mexico Water Issues**  
**3 Credits (3)**

Designed for agricultural and natural resource professionals who must educate others or provide leadership on complex water issues in New Mexico. Students will travel to four distinct geographic and cultural regions of the state and study water policies, issues, and delivery technologies in each region. Specific areas covered will be determined by resource professionals who will present past, current and future issues involved in the distribution of water. Urban impacts on water use will also be investigated. May be repeated up to 3 credits.

**AXED 5320. Risk and Crisis Communications in Agricultural, Consumer, and Environmental Sciences**  
**3 Credits (3)**

The purpose of this course is to introduce risk and crisis as interdisciplinary concepts, reviewing theoretical frameworks from a variety of fields and perspectives, such as communication, social psychology and public relations. Students will develop a theoretical understanding of all aspects of strategic communication pertaining risks. Using readings and reflective writings, you will understand how individuals cognitively process risks and how to leverage trust and knowledge to facilitate public understanding. In addition, you will learn crisis communication and management from an organizational perspective. Using case studies and discussions, students will be able to recommend strategies for managing crises occurred to agricultural and natural resource industries.

**Learning Outcomes**

1. Develop a critical understanding of theoretical and conceptual frameworks related to risk and crisis communications
2. Use an integrated framework to analyze the communication strategies used by the agricultural and natural resource industries

3. Recommend effective and ethical strategies for managing actual and potential crises

**AXED 5330. Content Area Literacies**

**3 Credits (3)**

Surveys integrated reading/writing/discursive practices in middle/secondary content areas.

**Learning Outcomes**

1. Analyze literacy processes, as they pertain to adolescent learners.
2. Discuss current trends and issues in content area literacy instruction with a specific focus on practices that promote achievement and equity.
3. Evaluate instructional practices that help students use reading, writing, speaking, listening, viewing and visually representing to learn the content areas.
4. Illustrate ethical reasoning and decision making in your approach to content area literacy education.
5. Integrate research, reflection, and best practices that positively impact students in a diverse society.

**AXED 5510. Research Methods**

**3 Credits (3)**

Students learn the research process as it is applied to solving problems in the behavioral sciences. Prepares students to conduct and critique research and to diffuse research findings. Implications, applications, and ethics of research also stressed. Students develop a research proposal for a problem of their choice. May be repeated up to 3 credits.

**AXED 5515. Data Collection and Analysis**

**3 Credits (3)**

Introduction to basic concepts of data collection and analysis. Interpretations from observational studies and controlled experiments. Roles of descriptive and inferential statistics in a complete data analysis. Mean, median, standard deviation, and graphical summaries of data. Correlation and simple regression. One- and two-sample tests and confidence intervals. Chi-square tests and basic analysis of variance. Competency in arithmetic and algebra required. An undergraduate statistics course recommended. May be repeated up to 3 credits.

**AXED 5610. Leadership on Agricultural and Natural Resource Issues**

**3 Credits (3)**

Investigates leadership concepts and group dynamics as they relate to a changing world and complex agricultural and natural resource issues. Topics include emotional intelligence, leading change, political leadership, facilitating agreement, team building, and managing conflict in agricultural and natural resource settings. Taught with AXED 475 with differential assignments for graduate students. May be repeated up to 3 credits.

**AXED 5615. Effective Management of Volunteer Programs**

**3 Credits (3)**

For individuals currently involved in, or interested in being involved in, the management and supervision of volunteer programs. Emphasis on practical application, utilizing a research and academic base. Explores the roles, functions, and tasks of volunteers and managers of volunteers including recruitment, orientation and training, supervision, evaluation, recognition and retention. May be repeated up to 3 credits.

**AXED 5993. Workshops in Agricultural, Extension, and Technology Education**

**1-3 Credits (1-3)**

Workshop procedures applied to current trends in agricultural, extension, and technology education. A maximum of seven credits will count towards a degree. May be repeated up to 7 credits.

**AXED 5994. Creative Component**

**1-4 Credits (1-4)**

For nonthesis program. Individual investigations or projects, either qualitative or quantitative studies. A maximum of six credits will count towards a degree. May be repeated up to 88 credits.

**AXED 5996. Special Topics**

**1-4 Credits (1-4)**

Specific subjects and credits to be announced in the Schedule of Classes. Students can take only a maximum of four credits per semester and no more than six credits will count towards a degree. May be repeated up to 6 credits.

**AXED 5998. Internship/Cooperative Experience**

**1-6 Credits (1-6)**

Supervised professional on-the-job learning experience. May be repeated up to 6 credits.

**AXED 5999. Master's Thesis**

**1-6 Credits (1-6)**

Thesis. May be repeated up to 88 credits.

**AXED 7000. Doctoral Dissertation**

**1-9 Credits (1-9)**

Independent research planned, conducted and reported in consultation with and the direction of a major professor. Open only to students pursuing graduate study beyond the master's degree level. Offered for variable credit, 1-18 credit hours, maximum of 18 credit hours. May be repeated up to 18 credits.

**Prerequisite:** Graduate Advisor Approval.

**Learning Outcomes**

1. Identify/define problems pertinent to the discipline.
2. Generate questions and/or a hypothesis to provide a solution to the problem.
3. Review and summarize the literature relative to the problem.
4. Apply appropriate research methods and collect data systematically.
5. Conduct research responsibly and ethically.
6. Evaluate, interpret, and analyze a body of empirical data and evidence.
7. Discuss findings in the broader context of the field.
8. Develop and sustain an evidence-based argument.
9. Write and speak critically and coherently.
10. Produce publishable results.

## B A-BUSINESS ADMINISTRATION (B A)

**B A 105. Special Topics**

**1-3 Credits**

Current topics in business and economics.

**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

## 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 experimentations.
2. Explain the process of scientific inquiry and explain how scientific knowledge is discovered and validated.
3. Describe the chemical basis of living organisms and how biomolecules contribute to the structure and function of cells.
4. Develop a basic familiarity with cells and cell organelles.
5. Describe the structure and function of DNA as well as how DNA is used in the production of proteins
6. Describe the basic principles of genetics and heredity leading to human diversity.
7. Identify the major features of the systems in the human body, and understand the anatomy and physiology of them
8. Describe the roles of the organ systems in maintaining homeostasis
9. Explain the principles of evolution by means of natural selection explaining the diversity of life. 1
10. 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 1130G. Introductory Anatomy & Physiology (non-majors)

#### 4 Credits (3+3P)

This course introduces the anatomy (structure) and physiology (function) of the human body, which includes the study of basic chemistry, molecules, cells, tissues, organs, organ systems, and terminology related to these concepts. May be repeated up to 4 credits. Restricted to Community Colleges campuses

#### Learning Outcomes

1. (Lecture) Define and explain anatomy and physiology.
2. (Lecture) Use anatomic directional, regional, and sectional terminology related to the human body.

3. (Lecture) Explain and describe the basic chemical principles of the human body including the structure and function of carbohydrates, lipids, proteins and nucleic acids.
4. (Lecture) Develop a basic familiarity with cells and cell organelles that include cell division, DNA replication, and protein synthesis.
5. (Lecture) Describe the structure and function of the major tissues in the human body.
6. (Lecture) Identify and describe the basic anatomical features of the integumentary, skeletal, muscle, nervous, endocrine, cardiovascular, lymphatic, digestive, respiratory, urinary and reproductive systems.
7. (Lecture) Describe the basic physiological roles of the integumentary, skeletal, muscle, nervous, endocrine, cardiovascular, lymphatic, digestive, respiratory, urinary and reproductive systems.
8. (Lecture) Apply and describe the principles of homeostasis in the human body.
9. (Laboratory) Use and apply proper anatomic terms 1
10. (Laboratory) Develop skills using the microscope correctly. 1
11. (Laboratory) Identify basic tissue types. 1
12. (Laboratory) Discuss and describe the basic anatomical features of the integumentary, skeletal, muscle, nervous, endocrine, cardiovascular, lymphatic, digestive, respiratory, urinary and reproductive systems. 1
13. (Laboratory) Demonstrate and describe physiological roles of the integumentary, skeletal, muscle, nervous, endocrine, cardiovascular, lymphatic, digestive, respiratory, urinary and reproductive systems.

### 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 and 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 1996. Topics in Biology

#### 1-3 Credits (1-3)

Introductory level coverage of biological topics. May be repeated up to 9 credits.

#### Learning Outcomes

1. Varies

### BIOL 2110G. Principles of Biology: Cellular and Molecular Biology

#### 3 Credits (3)

This course introduces students to major topics in general biology. This course 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, DNA replication, transcription, and translation. Must be taken

with BIOL 2110L to meet general education requirements. May be repeated up to 3 credits.

**Prerequisite/Corequisite:** a C- or better in MATH 1215 or higher and a C- or better in (CHEM 1120G or CHEM 1215G or CHEM 1216).

#### **Learning Outcomes**

1. Apply the scientific method to develop and evaluate hypotheses and propose an experiment to test a scientific hypothesis related to cell biology and molecular biology.
2. Describe the distinguishing characteristics of various biological molecules (water, carbohydrates, lipids, proteins, and nucleic acids).
3. Compare and contrast the basic features of cells and how prokaryotic cells differ from eukaryotic cells.
4. Understand how organisms maintain homeostasis in a dynamic environment.
5. Describe how biological molecules are acquired and how they are subsequently used to meet the metabolic needs of organisms.
6. Describe membrane structure and function.
7. Describe and analyze the nature of bioenergetic transformations and metabolism within the cell.
8. Describe the processes of cellular respiration and photosynthesis.
9. Analyze with specific detail the processes of DNA replication, transcription, and translation. 1
10. Analyze with specific detail the types, mechanisms, and regulation of cellular division. 1
11. Assess important applications of cell and molecular biology to energy use, medicine, and other day-to-day processes.

#### **BIOL 2110L. Principles of Biology: Cellular and Molecular Biology Laboratory**

##### **1 Credit (3P)**

This course introduces students to major topics in general biology. This course 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 credit.

**Prerequisite:** MATH 1215 or higher, and a C- or better in (CHEM 1120G or CHEM 1215G or CHEM 1216).

**Prerequisite/Corequisite:** BIOL 2110G.

#### **Learning Outcomes**

1. Describe and apply the scientific method to solve problems in biological context
2. Demonstrate knowledge of laboratory safety skills and procedures.
3. Practice principles of scientific method while conducting laboratory activities and experiments.
4. Perform laboratory activities using relevant laboratory equipment, chemical reagents, and supplies to observe biological specimens, to measure variables, and to design and conduct experiments.
5. Operate light microscopes, prepare wet mount slides, and use stains.
6. Exhibit ability to use pipettes and other volumetric measuring devices, chemical glassware, balances, pH meters or test papers, spectrophotometers, and separation techniques, such as chromatography and/or electrophoresis to perform activities relevant to other course competencies.
7. Analyze and report data generated during laboratory activities and experiments.

#### **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. 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 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. May be repeated up to 4 credits.

**Prerequisite:** BIOL 2210.

#### **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.
9. Describe immune hypersensitivity reactions, autoimmune diseases, and immunodeficiency diseases. 1
10. Differentiate between host microberelationships, 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/ Prerequisite(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 haptens, 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. 1
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 II  
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. May be repeated up to 3 credits.

**Prerequisite:** 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 nutrition and their causes and clinical manifestations; and the various disorders of the accessory organs of digestion.
9. The various features associated with alterations of sexual maturity (delayed puberty and precocious puberty); features related to

the etiology, pathogenesis, and pathophysiology of the various disorders of the male reproductive system, including disorders of the urethra, disorders of the penis, disorders of the scrotum, disorders of the testes, disorders of the epididymis, disorders of the prostate gland, and disorders of the male breast; features related to the etiology, pathogenesis, and pathophysiology of male sexual dysfunction; features associated with abnormalities of reproductive tract development; the various hormonal and menstrual alterations and their causes and clinical manifestations; the various conditions related to infection, inflammation, and pelvic organ prolapse (uterine prolapse, cystocele, rectocele, and enterocele); conditions involving benign growths and cancer (endometriosis, cervical cancer, vaginal cancer, vulvar cancer, endometrial cancer, uterine sarcoma, and ovarian cancer); features related to the etiology, pathogenesis, and pathophysiology of female sexual dysfunction (disorders of desire, vaginismus, anorgasmia, and dyspareunia); features related to infertility; and features related to the etiology, pathogenesis, and pathophysiology of breast cancer.

**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.
2. Apply quantitative reasoning and scientific thinking to real world problems.
3. Identify and describe the basic principles of evolution.
4. Analyze the relationships between the genetics of populations and evolution.
5. Analyze the processes of speciation.
6. Describe how the hierarchical classification scheme is used to categorize organisms.
7. Describe how DNA research has modernized bio systematics.
8. Compare and contrast the general characteristics of each of the living domains and kingdoms.
9. Relate the structure of organisms to the way they function. 1
10. Explain how the life histories of organisms are adapted for different environments. 1
11. Relate the complexity of behavior to the overall complexity of an organism. 1
12. Describe the ecological roles played by organisms in each kingdom. 1
13. Compare basic ecological principles at the population and community levels of organization. 1
14. Describe and compare energy relationships and the cycling of materials in ecosystems. 1
15. 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.
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 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 in 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.

#### **BLED 2110. Bilingual Methods**

##### **3 Credits (3)**

This course provides a historical overview of bilingual and ESL education including an emphasis on present trends and practices. Discussions of the aspects of bilingualism at both an individual and a societal level are included. May be repeated up to 3 credits.

##### **Learning Outcomes**

1. (Culture) Develops awareness in the learner of the value of cultural diversity.
2. (Culture) Prepares and assists students to interact successfully in cross cultural settings.
3. (Culture) Recognizes and accepts different patterns of child development within and between cultures in order to formulate realistic instructional strategies.
4. (Culture) Recognizes the similarities and differences between mainstream American and other cultures and the potential conflicts and opportunities they may create for students.
5. (Culture) Demonstrates knowledge of the effects of culture and socio-economic variables in learning styles.
6. (English Language Development) Demonstrates knowledge of the basic nature of language, language acquisition, language variation, language change, and the relation of language to society and culture.
7. (English Language Development) Demonstrates knowledge of the nature of bilingualism and the process of becoming bilingual.
8. (Instructional Methodology) Demonstrates knowledge of the historical, legal, theoretical, and sociological foundations of programs of instruction for second language learners.
9. (Instructional Methodology) Demonstrates knowledge of theories of first and second language acquisition. 1
10. (Instructional Methodology) Utilizes teaching methods appropriate to various age and language groups.

## **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.

##### **Learning Outcomes**

1. Define and explain the importance of full-service commercial banking.
2. Explain the impacts of the banking industry on the economy, the community, and individuals.
3. Describe the major functions of commercial banks and their interrelationships.
4. List and describe the major products and services provided by commercial banks.
5. Contrast the differences and similarities between time and demand deposits.
6. Describe the process and rationale behind issuing credit and loans.
7. Discuss the importance, necessity and process of bank investments.
8. Explain the concept of liquidity and its importance to the banking industry.

9. Identify and describe the duties of the various bank regulating agencies and the major regulations they enforce. 1
10. Describe the history and growth of the banking industry in the United States. 1
11. Explain the functions and importance of the Federal Reserve System.

#### **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.

##### **Learning Outcomes**

1. Define retailing in its various perspectives and note its special characteristics.
2. Explain the steps in strategic planning for retailers.
3. Describe consumer demographics, lifestyle factors, needs and desires.
4. Examine consumer attitudes toward shopping and consumer shopping behavior, including the consumer decision process and its stages.
5. Explore the methods used by manufacturers, wholesalers, and retailers to exert influence in the distribution channel.
6. Describe the wheel of retailing, scrambled merchandising and the retail life cycle and retail strategy mixes.
7. Examine consumer attitudes toward shopping and consumer shopping behavior, including the consumer decision process and its stages.
8. Create a merchandise plan, which uses forecasting, assortments, brands, timing and allocation.

#### **BMGT 132. Principles of Selling**

##### **3 Credits (3)**

Analysis of customer behavior, persuasive communication, process of the sales interview. Restricted to: Community Colleges only. May be repeated up to 3 credits.

##### **Learning Outcomes**

1. Define selling, consider it from various perspectives; demonstrate its impact, and its special characteristics.
2. Explain the steps within the selling process.
3. Demonstrate how the steps in the selling process interact within one another in a logical, seamless flow.
4. Examine ethics in personal selling.
5. Demonstrate the creativity and innovation that any successful salesperson uses to overcome challenges by employing new ideas to sell their products.
6. Students will identify and understand their core personality style to enhance their communication skills.
7. Incorporate sales communication and techniques into a job interview.

#### **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. Restricted to Community Colleges campuses only.

**Prerequisite:** BUSA 1110.

##### **Learning Outcomes**

1. Define integrity and understand its importance to small business and explain how it applies to various stakeholders.

2. Distinguish among the different types and sources of startup ideas.
3. Understand the pros and cons of franchising.
4. Describe the purpose and content of an income statement and balance sheet.
5. Designate the purpose of financial forecasting.
6. Diagnose a pro forma income statement to forecast a new ventures profitability.
7. Realize the concepts of forecasting a firm's cash flows.
8. Identify various scenarios for effective financial forecasting.
9. Evaluate the choice between debt and equity financing. 1
10. Comprehend how technology can be used to improve customer relationships. 1
11. Explain how the internet and social media are changing promotional and communication practices. 1
12. Discuss the key financial issues in managing a firm's inventory.

**BMGT 138. Advertising**  
**3 Credits (3)**

Psychological approach to non-personal consumer persuasion; applied techniques in media selection, layout mechanics, production methods, and campaign structures. Restricted to: Community Colleges only. May be repeated up to 3 credits.

**Learning Outcomes**

1. Define advertising and the relevant application of psychology in delivering the message.
2. Explain the importance of various advertising media in the marketing mix.
3. Identify and explain the social, ethical and legal issues advertisers must consider.
4. Describe the significance of the marketing function in business.
5. Explain the importance of advertising and other marketing communication tools.
6. Demonstrate application of the planning process as it applies to marketing and advertising.
7. Describe the factors that are weighed when considering the use of radio and television in the creative advertising mix.
8. Describe the relationship between market segment, consumer behavior and selection of advertising campaign types.
9. List the alternative means of reaching a target market and the technical challenges of each.

**BMGT 140. Principles of Supervision I**  
**3 Credits (3)**

Principles of supervision emphasizing planning, organization, rating of employees and procedures to develop good morale. Introduction to interpretation of case studies. Restricted to: Community Colleges only.

**Learning Outcomes**

1. Identify the elements that are necessary to be a successful supervisor in today's workforce.
2. Discuss how globalization affects supervisors in today's diverse labor force.
3. Explain the concepts of the learning organization and Continuous Quality Improvement and how their concepts influence organizational design and the management of employees.
4. Examine employee benefits and the applicable federal laws which affect the individual and the organization, and discuss their impact on both.

5. Identify and explain the decision-making process for a supervisory position.
6. Describe the value and impact of employee motivation for both the organization and the supervisor.
7. Recognize and define effective leadership styles and skills.
8. Review the importance of communication in the workplace, give examples of communication techniques and describe techniques for overcoming communication barriers.
9. Define and analyze essential supervisory skills including: team cohesiveness, human relations, decision making skills, planning and goal setting. 1
10. Summarize the importance of high ethical standards within the organization and for the employee.

**BMGT 150. Income Taxation**  
**3 Credits (3)**

Federal income taxation of individuals, sole proprietorships, partnerships, corporations, trusts, and estates with particular reference to CLU, life insurance and annuities. Restricted to: Community Colleges only.

**BMGT 155. Special Topics I**  
**1-3 Credits (1-3)**

Introductory special topics of lower division level work that provides a variety of timely subjects and content material. May be repeated up to 9 credits. Restricted to Community Colleges campuses only.

**BMGT 160. Self-Presentation and Etiquette**  
**3 Credits (3)**

Introduction to business etiquette based on tradition, social expectations, and professional behavior standards. Restricted to: Community Colleges only.

**BMGT 201. Work Readiness and Preparation**  
**3 Credits (3)**

Instruction in methods of selection, seeking, acquiring and retaining employment. Addresses work success skills, business etiquette, employer expectation and workplace norms. Restricted to Community Colleges campuses only.

**Learning Outcomes**

1. Catalog personal and professional information that will aid in career planning and job search processes.
2. Develop methods of establishing short- and long-term career goals.
3. Recognize the strengths of various kinds of resumes and how they are used based on one's career status and type of job being sought.
4. Explain the importance of good communication and work etiquette in job success.
5. Demonstrate how to create a professional image to increase job search success.
6. Explore career management opportunities and practices.
7. Demonstrate successful interview techniques.
8. Compare and contrast employee and employer expectations.
9. Discuss ethical and appropriate work practices. 1
10. Prepare a job specific resume, cover letter, and follow up/thank you letter which are professional and appropriate.

**BMGT 205. Customer Service in Business**  
**3 Credits (3)**

Establishes concepts of service quality in relationship to business success and maximization of returns to the organization. Explores techniques for delivering quality and service in a variety of business settings. Restricted to: Community Colleges only.

**Learning Outcomes**

1. Identify customer service and aspects of exceptional customer service.
2. Describe the elements of communication in customer service.
3. Explain professionalism in customer service.
4. Evaluate methods of resolving complaints from customers.
5. Describe the differences and influences of customers with disabilities, generational groups, and culturally diverse backgrounds.
6. Describe the purpose and use of voice and virtual technologies.
7. Explain the role of customer service management in providing quality service.

**BMGT 208. Business Ethics****3 Credits (3)**

The course examines the underlying dimensions of ethics in business, investigating ethics in relationship to the organization, the stakeholders, and society. Exploration of ethical issues from a historical context, analyzing actual events through the lens of business decision making, including legal/political, sociocultural, economic, and environmental considerations will be undertaken. Restricted to Community Colleges campuses only.

**Learning Outcomes**

1. Discover and discuss the basics of morals on the personal level.
2. Discuss and relate to historical development of ethics.
3. Describe the concepts of justice and economic distribution and apply to a real world scenario.
4. Recognize and explain capitalism and how ethics relate to the economic system.
5. Discuss ethical responsibilities through the lens of the corporation and apply to a real-world scenario.
6. Recognize and explain ethical issues as they apply to the consumer.
7. Explain environmental ethics through a business perspective and apply to a real world scenario.
8. Discuss and explain ethical and moral issues facing employers and employees and apply to a real world scenario.

**BMGT 216. Business Math****3 Credits (3)**

Application of basic mathematical procedures to business situations, including percentage formula applications, markup, statement analysis, simple and compound interest, and annuities. Restricted to: Community Colleges only.

**Prerequisite(s):** CCDM 103 N or satisfactory math score on ACT.

**BMGT 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 instructor. May be repeated up to 3 credits.

**Learning Outcomes**

1. Define and explain the purpose, expectations, and professional standards associated with the internship experience.
2. Demonstrate the ability to apply theoretical knowledge and practical skills acquired in the classroom to real-world situations within the internship setting.
3. Assess personal strengths, weaknesses, and areas for improvement based on feedback received from internship supervisors, self-reflection, and peer evaluations.

4. Collaborate effectively with colleagues, supervisors, and clients in the internship setting, demonstrating strong communication, teamwork, and problem-solving skills.
5. Evaluate the overall internship experience and its impact on personal and professional development, and identify areas for future growth and learning in the chosen field of study.

**BMGT 232. Personal Finance****3 Credits (3)**

Budgeting, saving, credit, installment buying, insurance, buying vs. renting a home, income tax statement preparation, investment, and estate disposal through will and trust. Restricted to: Community Colleges only.

**Learning Outcomes**

1. Explain the time value of money.
2. Explain the importance and relevance of financial planning.
3. Demonstrate development of a financial plan.
4. Explain the concepts of cash flow and use of capital.
5. Describe credit and the use of credit to attain wealth.
6. Demonstrate a variety of investment techniques and vehicles.
7. Explain the importance of estate planning.
8. List the functions and uses of insurance.

**BMGT 236. Small Business Start-Up****3 Credits (3)**

Starting a small business is a complex endeavor that requires specialized knowledge. This course prepares students to take the first step in business ownership and operations. Restricted to Community Colleges campuses

**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.

**BMGT 237. Managing Small Businesses****3 Credits (3)**

Managing a small business requires the owner/operator to be proficient in a number of skills and technical areas. This course provides small business owners/operators with the training and essential knowledge to manage a small business. Restricted to Community Colleges campuses.

**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 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:** BUSA 1110.

**Learning Outcomes**

1. Students will identify and evaluate tools useful for exploring their own identity.
2. Students will analyze and evaluate the connections they have with individuals from different backgrounds.
3. Students will analyze and evaluate concepts of culture, prejudice, and discrimination.
4. Students will demonstrate the ability to analyze, evaluate, and apply inclusive strategies to work effectively within a diverse workforce.

**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 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 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.
2. Participate in job shadowing in positions related to their field of study.
3. Create a portfolio in preparation for career applications.
4. Collaborate as a member of a team in their field of study.

5. 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(s):** Sophomore standing with 3.0 GPA.

## BUSA-BUSINESS ADMINISTRATION (BUSA)

**BUSA 1110. 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. Demonstrate basic skills such as use of common business terminology, information search skills, presentation and writing skills, and team skills.
7. Describe the purpose and content of a business plan.

**BUSA 2230G. Human Relations in Business**

**3 Credits (3)**

This course is an examination and application of personal and interpersonal competencies and skills needed in a business setting to understand oneself, one's co-workers, employers, and customers. Students will investigate and examine attitudes, behavior, ethical behavior and cultural influences that affect the business environment. It offers structured situations in which interpersonal relationships and communication skills are explored May be repeated up to 3 credits.

**Learning Outcomes**

1. Identify and describe the relevance and development of human relations theories as they apply to management, interpersonal interactions, leadership, conflict resolution, and other behaviors in the workplace.
2. Critically examine how individual beliefs, values, attitudes, and perceptions of the world are formed and discuss how they affect self-esteem and human interactions in the workplace individually and in formal and informal groups.
3. Recognize differing communication styles and apply effective communication skills to various workplace situations.
4. Examine the interrelationships between self, culture, ethnicity, gender, and personal environment and analyze their effects on the development of individual work behaviors.

- Articulate the factors that influence the development of communication, self-esteem, motivation, trust, leadership, and conflict resolution skills.
- Apply knowledge of human behavior and its origins to the analysis of workplace case studies and the development of solutions to workplace dilemmas.
- Apply ethical decision-making in business situations.

## C E-CIVIL ENGINEERING (C E)

### C E 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. Crosslisted with: DRFT 109 and E T 109. May be repeated up to 3 credits.

#### Learning Outcomes

- Describe related career options/pathways.
- Explain and apply common drafting terms, concepts, and conventions.
- Utilize various AutoCAD commands and Coordinate Entry methods to produce accurate and precise Two-Dimensional drawings.
- Setup AutoCAD working environment, drawings, styles, and applicable settings.
- Navigate the AutoCAD user interface efficiently.
- Apply different drafting methods, strategies, and processes.
- Utilize AutoCAD to produce basic 2D CAD working drawings.
- Measure utilizing scales accurately.
- Create drawings with different scales and units. 1
- Plot drawings produced in AutoCAD at various scales and on various sheet sizes. 1
- Utilize the two Drawing Environments: Paper Space and Model Space. 1
- Manage AutoCAD drawing files.

### 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/Corequisite:** MATH 1220G.

#### Learning Outcomes

- Understand the Civil Engineering profession and curriculum.
- Develop software skills for use in Civil Engineering education and professional practice.
- Understand and apply the basics of professional and academic ethics.

### C E 198. Special Topics

#### 1-3 Credits

Special topics in civil engineering. May be repeated up to 6 credits.

**Prerequisite:** consent of department head.

#### Learning Outcomes

- Students will develop knowledge related to the specific civil engineering special topic selected for study.

### C E 233. Mechanics-Statics

#### 3 Credits (3)

Engineering mechanics using vector methods. May be repeated up to 3 credits.

**Prerequisite:** C- or better grade in MATH 1521G or MATH 1521H, C- or better grade in PHYS 1310G and cumulative GPA of 2.0.

#### Learning Outcomes

- Student will be able to apply concepts of equilibrium.

### 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.

**Prerequisite:** A grade of C- or better grade in the following: C E 233 and PHYS 1310G and MATH 1521G or MATH 1521H.

#### Learning Outcomes

- Student will be able to apply concepts of kinematics and accelerated motion.

### 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

- 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. May be repeated up to 1 credit. Same as ENVS 2111L.

**Corequisite:** C E 256.

#### Learning Outcomes

- An understanding of experimental analyses related to environmental science

### C E 298. Special Topics

#### 1-3 Credits

Special topics in civil engineering. May be repeated up to 6 credits.

**Prerequisite:** consent of department head.

#### Learning Outcomes

- Students will develop knowledge related to the specific civil engineering special topic selected for study.

## 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.

**Learning Outcomes**

1. Recognize and employ reading and writing processes.
2. Employ rhetorical awareness in reading and writing.
3. Compose a variety of texts that demonstrate reading comprehension, clear focus, and logical development of ideas that advance the writer's purpose.
4. Recognize and apply organizational strategies.
5. Locate, evaluate, and integrate appropriate sources including appropriate style guide.
6. Recognize and use conventions of standard American English including usage and mechanics of sentence structure.

## 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 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 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.

## CCST-CHICANA/O STUDIES

### CCST 2110G. Introduction to Chicana and Chicano Studies

#### 3 Credits (3)

An introductory survey of the Mexican American experience in the United States, with special reference to New Mexico. The course includes exploration of historical, political, social and cultural dimensions. NMSU Specific It seeks to review the historical causes and consequences of the formation of the Chicano identity and to understand its relation to the development of the Chicano experience as a distinct culture. The course explores the social and political impact that Chicana/o thought and theory has had on the United States over time, specifically developing concepts related to identity, community, social movements, and social justice. Ultimately, the course will facilitate understanding the historical ways in which Chicana/os have negotiated the pressures of their surroundings and in the process shaped or redefined American conceptions of identity, race, gender, sexuality, ethnicity, education, protest, and resistance.

#### Learning Outcomes

1. Apply various transdisciplinary perspectives and processes to understand humanist expressions through a variety of creative productions.



2. Assess and apply social, historical, economic and cultural perspectives as they impact diverse populations over a period of time.
3. Explain the ways in which narratives help people understand one another more clearly and profoundly across ethnic and cultural groups.
4. Design projects that foster and increase a full understanding of a subject in order to promote change in their own and listeners' attitudes, values, beliefs, or behaviors.
5. Apply qualitative and numerical data to explain diverse human actions in an everyday context of life.

## 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. May be repeated up to 3 credits.

#### 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 HEST Majors only.

#### Learning Outcomes

1. Demonstrate an understanding of the relationship between academic and professional career success.
2. Express a familiarity with professionalism and career culture and communicate a comprehension of various professional career skills.
3. Apply material learned to other aspects to professional excellence.
4. Develop a career life plan that will highlight goals, taking into account life circumstances.
5. 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 HEST majors.

#### Learning Outcomes

1. Students will be able to demonstrate an understanding of the relationship between time management and academic success.
2. Students will be able to express a familiarity with college culture.
3. Students will be able to communicate a comprehension of study skills and test taking strategies.
4. Students will be able to apply material learned to other aspects to enhance academic excellence.
5. Students will be able to develop an academic life plan that will highlight goals, taking into account life circumstances.
6. 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. May be repeated up to 3 credits.

#### 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. 1
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. May be repeated up to 3 credits.

**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. May be repeated up to 3 credits.

**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.
3. Acquire survey-level knowledge of psychological assessment, measurement, and treatment.
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.

**Learning Outcomes**

1. Be able to discuss the appropriate wearing of the chef uniform and the safety reasons for it.
2. Demonstrate appropriate sanitation in the professional kitchen.
3. Demonstrate proper hand-washing techniques.
4. Demonstrate proper kitchen equipment use and layout.
5. Explain professional kitchen safety practices.
6. Demonstrate basic kitchen math skills.
7. Explain the purchasing cycle in a professional kitchen.
8. Discuss appropriate behavior in the kitchen.
9. Demonstrate basic knife skills. 1
10. Discuss basic sauce preparation and uses. 1
11. Understand real life issues in professional kitchens and variety of opportunities. 1
12. Explain the importance of culinary history.

**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.

**Learning Outcomes**

1. Demonstrate understanding of basic cake decorating principles and techniques.
2. Identify and describe basic methods for cake decoration.
3. Understand methods of production for borders, flowers, colorflow methods, and basic figure piping.

4. Demonstrate understanding of frosting types and the advantages of each.
5. List the need for and uses of various types of specialty decorating equipment.
6. Identify types of labor-saving products that specifically relate to cake decorating.

#### **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:** CHEF 125.

##### **Learning Outcomes**

1. Demonstrate understanding of advanced cake decorating principles and techniques.
2. Identify and describe advanced methods for cake decoration.
3. Understand methods of production for borders, flowers, ribbons, bows, and various 3-dimensional techniques with fondant.
4. Demonstrate understanding of creating and working with fondant.
5. List the need for and uses of various types of specialty decorating equipment.
6. Identify types of labor-saving products that specifically relate to cake decorating.

#### **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.

##### **Learning Outcomes**

1. Name the physical properties of chocolate and the ingredients used in its preparation.
2. List the common equipment used in chocolate and confectionary preparation.
3. Explain the production of chocolate from the cacao pod to the finished product.
4. Identify a variety of chocolate products.
5. Explain the various procedures for tempering chocolate.
6. Prepare simple chocolate decorations and candies.

#### **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:** CHEF 127.

##### **Learning Outcomes**

1. Apply the various procedures for tempering chocolate.
2. Demonstrate understanding of physical properties of chocolate and the ingredients used in its preparation.
3. Construct elaborate chocolate sculptures and candies.
4. Inventory the common equipment used in chocolate and confectionary preparation.
5. Design and outline a sculpture incorporating a variety of chocolate and confectionary techniques.

#### **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 set up. Restricted to Community Colleges campuses only.

**Prerequisite:** CHEF 125 and CHEF 126.

##### **Learning Outcomes**

1. Apply the techniques of wedding cake decorating philosophies.
2. Combine the methods from Basic and Advanced Cake and incorporate it into creating a wedding cake.
3. Use previously learned methods of production of flowers, ribbons, bows and various other techniques to complete a wedding cake.
4. Identify types of labor-saving products that specifically relate to wedding cakes.
5. Formulate the proper techniques in delivering cakes to clients.

#### **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 156. Sugar Work**

##### **1 Credit (1)**

This course provides students with a comprehensive exploration of the principles, techniques, and artistic applications of sugar-based confectionery. The course begins with thread, then moves on to soft ball, firm ball, hard ball, then soft crack, hard crack and finally caramel. While students are learning these different stages, they are creating recipes that require using the different stages. This is a pre-requisite for Advanced Sugar Work. May be repeated up to 3 credits.

##### **Learning Outcomes**

1. Name the physical properties of sugar and the ingredients used in its preparation.
2. List the common equipment used in sugar and confectionary preparation.
3. Explain the production of sugar from the farm to the finished product.
4. Identify a variety of sugar stages and products.
5. Explain the various procedures for sugar preparations and their applications.
6. Prepare simple sugar decorations and candies.

#### **CHEF 157. Advanced Sugar Work**

##### **1 Credit (1)**

This advanced-level course delves into the intricacies of advanced sugar manipulation, focusing on techniques such as blown sugar, pulled sugar, and intricate sugar sculptures. Through a rigorous exploration of the chemical and physical properties of sugar, students will gain a profound comprehension of temperature control, crystallization, and the nuanced interplay of ingredients. The course places a strong emphasis on honing precision and innovation in sugar craftsmanship, ensuring that students not only develop technical expertise but also cultivate a discerning eye for design and presentation. May be repeated up to 3 credits.

**Prerequisite:** CHEF 156.

##### **Learning Outcomes**

1. Apply the various procedures for sugar confectionery.
2. Demonstrate understanding of the physical properties of sugar and the ingredients used in its preparation.
3. Construct elaborate sugar sculptures and candies.
4. Inventory the common equipment used in sugar and confectionary preparation.

- Design and outline a sculpture incorporating a variety of sugar and confectionery techniques.

#### **CHEF 158. Gum Paste**

##### **1 Credit (1)**

This course offers a comprehensive exploration of the specialized artistry and techniques associated with the use of gum paste in pastry and confectionery. Tailored for students seeking an in-depth understanding of advanced sugar crafting, the curriculum focuses on the fabrication and manipulation of gum paste to create intricate and lifelike decorative elements. Students will delve into the scientific properties of gum paste, examining its pliability, drying characteristics, and color absorption, while gaining proficiency in crafting flowers, figurines, and ornate embellishments. The course places a strong emphasis on precision, attention to detail, and artistic expression in gum paste work. Through practical exercises, students will learn to design and construct elaborate cake decorations, showpieces, and other edible works of art. May be repeated up to 3 credits.

##### **Learning Outcomes**

- Demonstrate understanding of gum paste flower-making principles and techniques.
- Identify and describe advanced methods for gum paste flower making.
- Understand methods of production for peonies, roses, and sunflower techniques with gum paste.
- Demonstrate understanding of creating and working with gum paste.
- List the need for and uses of various types of specialty decorating equipment.
- Identify types of labor-saving products that specifically relate to gum paste flowers.

#### **CHEF 159. Sculpted Cakes**

##### **1 Credit (1)**

This course is designed to provide students with a comprehensive understanding and mastery of the intricate artistry involved in crafting three-dimensional and visually stunning cake sculptures. Participants will delve into the principles of structural engineering, cake carving, and fondant application to create edible masterpieces that push the boundaries of traditional cake design. The curriculum focuses on both the theoretical and practical aspects of sculpted cake creation, covering topics such as conceptualization, planning, and execution of complex designs. Students will develop proficiency in utilizing a variety of tools and techniques, including internal support structures, modeling chocolate, and edible paints. Through hands-on projects and collaborative exercises, students will refine their sculpting skills and gain the expertise required to transform cakes into visually captivating works of art. May be repeated up to 3 credits.

##### **Learning Outcomes**

- Discuss the physical properties of cakes and the ingredients used in their preparation.
- Describe the common equipment used in cake sculpting and confectionary preparation.
- Identify a variety of ways to sculpt cakes into realistic shapes.
- Explain the various procedures for working with cake and decorating tools.
- Identify types of labor-saving products that specifically relate to sculpting cake.

#### **CHEF 160. Asian Cookery**

##### **1 Credit (1)**

This course offers an immersive exploration of the diverse and rich culinary traditions of Asia. The curriculum covers essential techniques, ingredients, and flavor profiles unique to each region, fostering an appreciation for the artistry and balance inherent in Asian cooking. Through hands-on experiences in the kitchen, students will develop the ability to execute traditional dishes while also exploring innovative and contemporary interpretations. Special attention is given to ingredient sourcing, flavor layering, and mastering the diverse cooking methods characteristic of Asian cuisine. May be repeated up to 6 credits.

##### **Learning Outcomes**

- Identify the basic ingredients and palette of flavors of China, Korea, Japan, Vietnam, Thailand, Indonesia, and India.
- Identify the cooking techniques of the major regions of Asia.
- Describe unique cooking equipment or vessels used in these regions.
- Apply basic cooking fundamentals to a variety of dishes from these regions.
- Demonstrate previously learned principles of food safety and sanitation through professional work habits.
- Accurately apply previously learned principles of culinary mathematics to a written project.

#### **CHEF 161. Experimental Cookery**

##### **1 Credit (1)**

This course in Experimental Cookery offers an innovative and intellectually stimulating exploration into the avant-garde realms of culinary creation. The curriculum transcends conventional boundaries to foster a deep understanding of experimental techniques, molecular gastronomy, and cutting-edge culinary trends. Students will engage in theoretical discussions on the principles of flavor pairing, texture manipulation, and creative plating, while also gaining hands-on experience in the kitchen to apply these concepts. The course encourages students to push the boundaries of traditional culinary practices, experiment with novel ingredients, and leverage modern technology to transform familiar dishes into gastronomic marvels. Emphasis is placed on developing a discerning palate, critical thinking skills, and the ability to adapt and innovate in response to evolving culinary landscapes. May be repeated up to 3 credits.

##### **Learning Outcomes**

- Implement various cooking techniques such as sous-vide, molecular gastronomy, and infusion, to create innovative and experimental dishes.
- Show food science principles and how they impact the cooking process to experiment with texture, taste, and presentation.
- Analyze and adapt recipes to critically evaluate traditional experimenting with ingredient substitutions, flavor.
- Collaborate on experimental menus in teams to showcase their collective skills and creativity.
- Create fusion cuisine to explore the art of fusion cooking.

#### **CHEF 162. Not So Traditional Holiday Cookery**

##### **1 Credit (1)**

This course is tailored for students seeking a unique exploration of festive cuisines that break away from conventional holiday traditions. Delving into the global spectrum of celebratory dishes, this course aims to broaden students' culinary perspectives by introducing innovative and culturally diverse approaches to holiday cooking. The curriculum encompasses theoretical discussions on the historical, social, and cultural influences shaping non-traditional holiday cuisines, providing a context for the exploration of ingredients and techniques. Through hands-on experiences in the kitchen, students will learn to craft unconventional

yet delectable holiday menus that reflect a fusion of flavors and culinary traditions. Emphasis will be placed on creativity, adaptability, and the development of well-balanced and aesthetically pleasing dishes. May be repeated up to 3 credits.

#### **Learning Outcomes**

1. Explore global culinary traditions by discussing diverse cultures and cuisines from around the world to discover non-traditional holiday dishes.
2. Create holiday-inspired dishes by adapting traditional holiday ingredients and concepts into modern and innovative dishes.
3. Incorporate seasonal and locally available ingredients to create non-traditional holiday dishes.
4. Develop a deeper knowledge and appreciation for cultural diversity by exploring the historical and social significance of non-traditional holiday dishes.
5. Design a non-traditional holiday menu collaborating to design a cohesive non-traditional holiday menu that showcases their culinary skills and creativity.

#### **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.

#### **Learning Outcomes**

1. Demonstrate mastery of basic math functions.
2. Calculate percentages when given data by which they may be derived.
3. Demonstrate accurate measurement calculations both in English and Metric systems.
4. Convert English to Metric measurements and vice versa with accuracy.
5. Demonstrate the ability to scale a recipe – expanding and reducing portions prepared.
6. Calculate recipe cost accurately.
7. Using standard yield factors for ingredients determine the required purchase amounts of the ingredients for a given recipe.
8. Using published baking recipe ratios, determine the quantities of ingredients required for baked goods.
9. Calculate inventory value and order quantities based on par stock and other systems.

#### **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. Taught with: HOST 211. Restricted to Community Colleges only.

#### **Learning Outcomes**

1. Demonstrate understanding of workflow concept.
2. Understand basic principles of kitchen design/layout.
3. Identify and discuss use of commercial kitchen equipment.
4. Demonstrate safe working techniques in kitchen settings.
5. Observe and demonstrate comprehension of basic preparation techniques.
6. Apply knowledge of varied and appropriate methods of cooking.

7. Identify and describe physical and chemical change occurring during the cooking process.
8. Describe the flow of products through the operation from order to use.
9. Prepares a production order for meal service. 1
10. Explains the basic organization of typical restaurant kitchens. 1
11. Prepares a staffing chart for a hypothetical kitchen. 1
12. Discuss and identify trends in cooking and food preparation. 1
13. Show understanding concerning infusion of ideas and ingredients into cooking styles and technologies. 1
14. Demonstrate understanding of the link between customers and creativity by developing regional recipes.

#### **CHEF 212. Food Production Management II**

##### **3 Credits (2+2P)**

Selection and use of ingredients. Demonstration and application of classical and modern cooking and preparation techniques. Management techniques for kitchen personnel. Recipe design and analysis. Taught with: HOST 212. Restricted to Community Colleges only.

**Prerequisite(s):** Grade of C- or above in CHEF 211 or consent of instructor.

#### **Learning Outcomes**

1. Demonstrate understanding of ingredient variety and availability.
2. Describe base sauces, mother sauces and derivations – both classical and modern.
3. Understand methods of preparation for protein products and application of varied cooking techniques.
4. Identify methods of preparation for side dishes, starches and vegetables.
5. Understand garde-manger functions and demonstrate knowledge of cold food preparation techniques.
6. Demonstrate understanding of buffet layout and design.
7. Understand the importance of appearance and demonstrate the ability to prepare appropriate garnish.
8. Apply elements of design, color, texture and structure as they relate to the presentation of food items.
9. Demonstrates understanding of recipe layout, structure and design. 1
10. Analyze recipes for functionality. 1
11. Understand rationale for standardized recipes and demonstrate ability to develop the same.

#### **CHEF 213. Bakery Management I**

##### **3 Credits (2+2P)**

Fundamentals of baking from a supervisory/management perspective. Exposure to commercial equipment and processes. Introduction to commercial alternatives to scratch-preparation methods. Crosslisted with: HOST 213. Restricted to Community Colleges only.

#### **Learning Outcomes**

1. Identify and explain at least five common baking ingredients and demonstrate their use.
2. Describe and analyze the biological and chemical reactions that occur during baking.
3. Identify and describe Danish pastry production methods and individual sweet roll construction.
4. Recognize methods of bread production for both yeast and quick bread varieties.
5. Demonstrate various production techniques for pies, pastries, and cookies.
6. Identify different types of ovens and evaluate the advantages of each.

7. Identify and evaluate the necessity and functionality of various specialty baking equipment.
8. Identify types of labor-saving products that specifically relate to baking operations.
9. Demonstrate knowledge of value in using proof and bake products. 1
10. Demonstrate the application and proper utilization of convenience production items. 1
11. Explain need and rationale for use of mixes and pre-made products. 1
12. Demonstrate development of a baking formula. 1
13. Explain the importance of planning production times and products. 1
14. Discuss the challenges of staffing in baking operations.

#### **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. Taught with: HOST218. Restricted to Community Colleges only.

**Prerequisite(s):** Grade of C- or above in CHEF 213 or consent of instructor.

##### **Learning Outcomes**

1. Accurately calculates labor cost for hypothetical bakery operation.
2. Explains the importance and challenges of equipment scheduling in a bakery.
3. Uses appropriate baking ingredients for advanced baking processes.
4. Connects the biological and chemical reactions occurring during the baking process with the anticipated outcomes and products.
5. Demonstrates the production methods used in advanced baking processes.
6. Demonstrates artisan bread production for yeast bread varieties.
7. Produces torts, pastries and cakes.
8. Familiar with the specialty equipment used in advanced baking techniques.
9. Rationalizes the value of producing high-end bakery items. 1
10. Identify types of labor-saving products that specifically relate to production of high-end products. 1
11. Utilize the specialty convenience production items that support up-scale bakery products.

#### **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. Restricted to: CHEF, HOST majors. Restricted to Community Colleges Campuses only. May be repeated up to 4 credits.

##### **Learning Outcomes**

1. Describe the meaning and function of the mise en place concept.
2. Demonstrate knowledge of how kitchen equipment operates and ability to utilize equipment in safe and sanitary manner.
3. Identify ingredients for use in differing recipes and processes.
4. Discuss basic stocks and sauce preparation and their uses.
5. Apply principles of starch, vegetable and various egg cookery methods.

6. Utilize techniques for proper preparation of fruits, salads and dressings.
7. Demonstrate basic meat cookery methods and techniques.

#### **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. Restricted to: HOST,HSMG,CHEF majors. Restricted to Community Colleges campuses only.

**Prerequisite:** CHEF 233 with a grade of "C-" or better.

##### **Learning Outcomes**

1. Demonstrate the ability to properly, and safely, operate all kitchen equipment.
2. Identify and explain the five major cooking techniques and their application to different foods.
3. Prepare basic dishes using one or more of the major cooking techniques.
4. Demonstrate the ability to accurately and safely perform basic knife cuts.
5. Evaluate the flavor and quality of cooked meat, poultry, fish, vegetables, starches, and legumes, as well as specialty soups.

#### **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.

##### **Learning Outcomes**

1. Create and compose menus for small meals and menu service.
2. Practice and prepare advanced dishes using the five major cooking techniques.
3. Demonstrate the ability to Perform basic and advanced knife cuts with accuracy, safety, and speed.
4. Manage and organize peers to produce a full menu for service.
5. Prepare and asses the flavor and quality of produce, meat, poultry and seafoods, and legumes.

#### **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.

##### **Learning Outcomes**

1. Create a diverse à la carte menu that features a wide variety of dishes, including appetizers, main courses, side dishes, and desserts.
2. Produce staffing plans for back of house and front of house.

3. Implement advanced culinary techniques to refine their culinary skills by mastering advanced cooking techniques of dishes to meet the standards of à la carte dining.
4. Develop expertise in food plating and presentation focused on the art of food plating and presentation to create visually stunning dishes.
5. Practice effective table service and hospitality.
6. Manage a simulated restaurant service experiencing the challenges and responsibilities of running a restaurant kitchen and dining area.
7. Evaluates meal service and critiques positive and negative aspects.

**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. Restricted to: CHEF, HOST majors. Restricted to Community Colleges campuses only.

**Prerequisite(s):** Grade of "C" or above in CHEF 233.

**Learning Outcomes**

1. Evaluates event contract for requirements and restrictions.
2. Coordinates efforts of sales and production staffs to meet customer needs.
3. Develops menus for events within price / quality constraints of contract.
4. Plans event staffing, food production, and service organization.
5. Prepares food, stages and serves food products.
6. Evaluates production, service, and cost efficacy.

**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. May be repeated up to 4 credits.

**Corequisite:** Grade of C- or above in CHEF 233 or instructor approval if concurrent.

**Learning Outcomes**

1. Identify quality characteristics of a wide range of ingredients and baked products.
2. Describe the five major ingredients and their functions in baked products.
3. Demonstrate proficiency in scaling and measuring of ingredients.
4. Explain and demonstrate the basic fundamental techniques of baking and pastry.
5. Demonstrate the ability to properly, and safely, operate all bakeshop equipment.
6. Identify and describe basic formula of, custards, creams and batters.
7. Demonstrate principles of food safety and sanitation through professional work habits.

**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 Community Colleges campuses only. May be repeated up to 4 credits. Restricted to: HOST, CHEF majors.

**Prerequisite:** Grade of "C" or above in CHEF 240.

**Learning Outcomes**

1. Construct complex desserts, pastries and cakes.
2. Apply the basic formulas of custards creams and batters.
3. Identify the function of yeast and other leaveners in breads.
4. Demonstrate the ability to produce enriched and specialty bread products.
5. Experiment with the differences in fundamental techniques of baking and pastry.

**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. May be repeated up to 4 credits. Restricted to: HOST, CHEF majors. Restricted to Community Colleges campuses only.

**Prerequisite:** Grade of "C" or above in CHEF 241.

**Learning Outcomes**

1. Produces acceptable quality cake items using standardized recipes.
2. Prepares tarts and pies as assigned, meeting quality standards.
3. Demonstrates use of puff pastry in a variety of advanced dessert items.
4. Prepares and utilizes frostings and icings appropriate to the item being produced.
5. Designs and decorates dessert items creatively.
6. Prepares baked custards and chilled mousse items that meet quality standards.
7. Produces high quality yeast bread products.

**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: CHEF, HOST majors. Restricted to Community Colleges campuses only.

**Prerequisite:** Grade of "C" or above in CHEF 242.

**Learning Outcomes**

1. Demonstrates ability to weigh/measure ingredients based on formula.
2. Explains the differences between recipes and formulas.
3. Discusses the different ingredients used in commercial baking and their uses.
4. Demonstrates the processes for making yeast doughs.
5. Demonstrates the making of sweet doughs.
6. Explains the use of the commercial equipment found in bakeries.
7. Explains how the chemical reactions in baked products effects the product.
8. Calculates the effect of heat of friction on the product.
9. Demonstrates scaling of large batch production into useable units.

**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:** Grade of "C" or above in CHEF 233.

#### **Learning Outcomes**

1. Demonstrates preparation and presentation of plated salads.
2. Prepares sandwiches and other cold items as assigned that meet standards.
3. Develops, designs and prepares entremets and palate refreshers.
4. Prepares classical and modern patés and forcemeats as assigned.
5. Designs and prepares terrines and galatines following recipes and directions.
6. Prepares charcuterie products as assigned following recipes and directions.
7. Designs, prepares, and decorates products with chaud froid as appropriate.

### **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. May be repeated up to 3 credits.

#### **Learning Outcomes**

1. Describes the functions of the various nutrients and their importance in human nutrition.
2. Explains how hydration impacts health.
3. Discusses the concept of balance and moderation in eating choices.
4. Explains how lifestyle choices impacts nutrition.
5. Discusses food fads and their challenge to the culinarian.
6. Catalogs the nutritional guidelines promoted by the USDA.
7. From the restaurant's perspective discusses the importance of being aware of customers' allergies and dietary restrictions.

## **CHEM-CHEMISTRY (CHEM)**

### **CHEM 1111. Basic Chemistry**

#### **3 Credits (3)**

For students whose preparatory science or math training has been deficient. Does not meet the chemistry requirement in any curriculum.

**Prerequisite:** Enhanced ACT composite score of at least 18 or a grade of C- or better in CCDM 114 N.

#### **Learning Outcomes**

1. The goals and objectives for CHEM 1111 are to equip students with the necessary problem solving skills to be successful in CHEM 1215G/1225G

### **CHEM 1120G. Introduction to Chemistry Lecture and Laboratory (non majors)**

#### **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. 1
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 1
11. (Laboratory) Practice concepts associated with laboratory safety, including the possible consequences of not adhering to appropriate safety guidelines. 1
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. 1
13. (Laboratory) Perform laboratory observations (both qualitative and quantitative) using sensory experience and appropriate measurement instrumentation (both analog and digital). 1
14. (Laboratory) Record quantitatively measured values to the correct number of significant figures and assign the correct units. 1
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. 1
16. (Laboratory) Draw appropriate conclusions based on data and analyses. 1



17. Present experimental results in laboratory reports of appropriate length, style and depth, or through other modes as required. 1
18. Determine chemical formulas and classify different types of reactions. 1
19. Relate laboratory experimental observations, operations, calculations, and findings to theoretical concepts presented in the complementary lecture course.

**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.
2. Understand the scientific method in the context of scientific discoveries.
3. Explain the structure of atoms, isotopes and ions in terms of subatomic particles.
4. 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.
5. 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.
6. 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
7. Understand mixtures, solubility by considering intermolecular forces and expressing concentration in molarity.
8. Identify different reaction types. Apply the law of conservation of mass to reactions. Perform stoichiometry on balanced reactions. Laboratory Student Learning Outcomes

9. Demonstrate and apply concepts associated with laboratory safety, including the possible consequences of not adhering to appropriate safety guidelines.
10. 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.
11. Perform laboratory observations (both qualitative and quantitative) using sensory experience and appropriate measurement instrumentation (both analog and digital).
12. Prepare solutions with an acceptable accuracy to a known concentration using appropriate glassware.
13. 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.
14. Draw conclusions based on data and analyses from laboratory experiments.
15. 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.
2. Calculate solution concentrations in various units.
3. Apply the gas laws and kinetic molecular theory to relate atomic level behavior to macroscopic properties.
4. Explain the electronic structure of atoms, isotopes and ions in terms of its subatomic particles.
5. 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.
6. Understand the nature of chemical bonds (ionic and covalent). Apply knowledge of electronic structure to determine molecular structure and polarity.
7. 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**

- 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**

- 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 2111. Explorations in Chemistry and Biochemistry**

##### **1 Credit (1)**

In introduction to the experience of chemistry and biochemistry degrees. In this course, students will prepare a degree plan and personal statement. Career opportunities in chemistry and biochemistry will be presented and discussed. Graded S/U.

##### **Learning Outcomes**

- Demonstrate knowledge and understanding of the subdisciplines of Chemistry and Biochemistry.

2. Demonstrate knowledge and understanding of the requirements for the Chemistry and Biochemistry majors and career opportunities available to these majors.
3. Adopt strategies to prepare for future success in a job search or graduate school applicatio
4. Learn about undergraduate research opportunities in chemistry and biochemistry.

**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.

**Prerequisite:** C- or better in CHEM 1225G or CHEM 1226.

**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. 1
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. May be repeated up to 3 credits.

**Prerequisite:** CHEM 1120G or CHEM 1215G.

**Corequisite:** CHEM 2120L.

**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 2120L. Integrated Organic Chemistry and Biochemistry Lab****1 Credit (1,3P)**

This course provides experiences with the physical properties and laboratory synthesis of organic compounds.

**Corequisite:** CHEM 2120.

**Learning Outcomes**

1. Discuss the chemical, structural, and physical differences among the different functional groups.
2. Prepare, label, and use solutions of appropriate and known concentrations.
3. Recognize chiral organic molecules, and explain their biological significance.
4. Understand and be able to identify the process of organic reactions: nucleophilic and electrophilic, redox reactions, and enzyme catalyzed reactions.
5. Predict the products of substitution, elimination, condensation, and redox reactions.
6. Explain why certain lipids and amino acids are essential while others are not.

**CHEM 2130. Organic Chemistry I****3 Credits (3)**

This course is the first of a two semester sequence of Organic Chemistry, the chemistry of carbon containing compounds, as required for chemistry, medical science, and engineering majors. The course includes theoretical, qualitative, and quantitative discussion of Organic Chemistry concepts, including but not limited to a review of electronic structure and bonding, acids and bases, stereochemistry, an introduction to organic compounds, isomers, substitution and elimination reactions of alkyl halides, reactions of alkenes, alkynes, alcohols, ethers, epoxides, amines, and thiols, mass and infrared spectrometry, ultraviolet/visible spectroscopy, and nuclear magnetic resonance.

**Prerequisite:** CHEM 1225G or CHEM 1226.

**Learning Outcomes**

1. Review properties of elements and molecules discussed in general chemistry (electronegativity, bonding, formal charge, octet rule).
2. Review chemical reactions discussed in general chemistry (products, reactants, balanced equations, byproducts).
3. Classify organic compounds and their properties by functional group, including substitution and elimination reactions of alkyl halides, reactions of alkenes, alkynes, alcohols, ethers, epoxides, amines, and thiols.
4. Use common and IUPAC rules of nomenclature to name organic compounds.
5. Review the structure and stability of compounds.
6. Comprehend the relationship between structure and reactivity.
7. Comprehend configurations of organic compounds (resonance structures, stereochemistry, isomers).
8. Interpret spectral properties and use in structure determination.

9. Correctly describe the four-five step synthesis of a simple organic molecule using reactions learned in the class.

### CHEM 2135. Organic Chemistry II

#### 3 Credits (3)

This course is the second of a two semester sequence of Organic Chemistry, the chemistry of carbon containing compounds, as required for chemistry, medical science, and engineering majors. The course will emphasize structure, main physical properties, chemical reactivity, and reaction mechanisms relating to alcohols, arenes and carbonyl compounds, as well as continued integration of mass and infrared spectrometry, ultraviolet/visible spectroscopy, and nuclear magnetic resonance technique and analysis.

**Prerequisite:** CHEM 2130 or CHEM 313.

#### Learning Outcomes

1. Identify functional groups and other key features of different organic compounds.
2. Correctly name organic compounds using the proper nomenclature (IUPAC and common names).
3. Analyze relationships among molecular structure, chemical reactivity, physical and spectral properties.
4. Understand chemical reactivity and reaction mechanisms relating, but not limited to dienes, arenes, alcohols, ethers, amines, phenols, and carbonyl compounds, i.e. aldehydes, ketones, carboxylic acids and derivatives.
5. Write out correctly the mechanisms of electrophilic aromatic substitution, formation and hydrolysis of acetals and ketals, formation and hydrolysis of imines and enamines, conjugate addition of nucleophiles to  $\alpha,\beta$ -unsaturated carbonyl compounds, Fischer esterification and hydrolysis of esters under both acidic and basic conditions, transesterification under acidic and basic conditions, amide hydrolysis under acidic and basic conditions, the aldol reaction and condensation, and the Claisen condensation/Dieckmann cyclization for examples that are different than those studied in class.
6. Relate structures to spectral properties, interpreting IR, thirteenC and oneH NMR.
7. Describe the six-seven step synthesis of a simple organic molecule using reactions learned in this class.
8. Convert the Fischer projection of a carbohydrate to its corresponding Haworth projection, or convert the Haworth projection of a carbohydrate to its Fischer projection.
9. Recognize derivatives of carbonic and phosphoric acids, alkaloids, carbohydrates, peptides, steroids, prostaglandins, aglycones, carbohydrate anomers, reducing sugars, waxes, fats, and oils.

### 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

## CHME-CHEMICAL & MATERIALS ENGR (CHME)

### CHME 101. Introduction to Chemical Engineering Calculations

#### 2 Credits (2)

Introduction to the discipline of chemical engineering, including: an overview of the curriculum; career opportunities; units and conversions; process variables; basic data treatments; and computing techniques including use of spreadsheets.

**Prerequisite/Corequisite:** MATH 1220G, or MATH 1250G, or MATH 1511G.

#### Learning Outcomes

1. Describe career opportunities available to holders of a BSChE degree.
2. Find and use learning and advising resources within CHME and Engineering.
3. Create a course registration plan for future semesters that meets the degree and prerequisite requirements for the BSChE in the timeliest manner.
4. Diagram a process with unit operations and material and energy flows.
5. Perform unit analysis and unit conversions accurately and efficiently.
6. Validate calculated results using estimation techniques.
7. Apply the concept of significant figures to numerical answers.
8. Identify and describe process variable measurements using engineering vocabulary.
9. Express and convert concentrations using mass, mole, and volume bases. 1
10. Convert between absolute and relative pressure and temperature scales. 1
11. Perform calculations in Excel using built-in and custom functions. 1
12. Generate 2-D plots of data and functions in Excel. 1
13. Perform a regression of data to a mathematical model.

### CHME 102. Material Balances

#### 2 Credits (2)

Perform material balances in single- and multi-phase, reacting and non-reacting systems under isothermal conditions.

**Prerequisite:** MATH 1220G, or MATH 1250G, or MATH 1511G.

#### Learning Outcomes

1. Analyze data using trendlines. Linearize when necessary.
2. Use unit conversions when solving problems.
3. Turn a verbal or written problem statement into a diagram and a mathematical form.
4. Write and solve material balances on single and multi-unit processes, for both nonreactive and reactive processes.
5. Identify what phase a substance is in and then be able to use the correct equations to relate volume to mass and moles.
6. Use Raoult's and Henry's law when solving mass balances.

### 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:** CHME 102 and MATH 1250G or MATH 1511G.

**Prerequisite/Corequisite:** CHEM 1216 or CHEM 1215G.

**Learning Outcomes**

1. Correctly implement unit conversions (outcome (a) an ability to apply knowledge of mathematics, science, and engineering).
2. Analyze and solve elementary material balances on single and multi-unit process, for both nonreactive and reactive processes.
3. Apply the first law of thermodynamics to batch and flow processes.
4. Locate thermophysical property data in the literature and estimate properties when data are not available.
5. Conduct combined material and energy balances around continuous multi-unit processes with and without chemical reaction.
6. Perform process calculations using psychrometric charts, enthalpy concentration diagrams and steam tables.
7. Derive and solve differential equations for transient heat and material balances on dynamic systems.
8. Determine individual learning style and describe how learners of that style can help themselves.
9. Use modern engineering tools (example, Excel) to solve material and energy balance problems.

## 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. May be repeated up to 3 credits.

**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 4 Credits (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. Restricted to Community Colleges campuses only.

**Prerequisite:** PHLS 2110.

**Prerequisite/Corequisite:** PHLS 1110G, CHSS 1110, and PHLS 2120.

**Learning Outcomes**

1. Understand the importance of service learning in community building and civic participation.
2. Students will complete 120 hours of service learning experience with a collaborating community agency.
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. Service Learning - Community Health Worker 1 Credit (1)

Service Learning Experience in Community Health Work: Exploration of contemporary social, civil, economic and ethical problems that require student participation in collaborative efforts within the community. May be repeated up to 1 credit.

**Prerequisite:** PHLS 2110, consent of instructor.

**Prerequisite/Corequisite:** PHLS 1110G, CHSS 1110, and PHLS 2120.

**Learning Outcomes**

1. Understand the importance of service learning in community building and civic participation.
2. Students will complete 30 hours of service learning experience with a collaborating community agency focusing on Community Health Work.
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. Attend CHW trainings focused on community health including (but not limited to) chronic disease, environmental and mental health.
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

## 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 reus, 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 within 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 handling 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

## CNST-CONSTRUCTION

### CNST 1110. General Carpentry or Building Trades I 8 Credits (2+12P)

This course will have two components: a classroom segment, where carpentry concepts will be explored, and a hands-on segment where students will be able to participate in the actual construction of a structure. Habitat for Humanity has generously offered one of their projects as a "hands-on" site. May be repeated up to 8 credits.

#### Learning Outcomes

1. Identify and define various elements of a Structural Wood Wall.
2. Build Structural and non-load bearing Walls and Partitions using OSHA compliant safety practices.
3. Size floor joists and roof rafters according to local building codes.
4. Hang and "Trim Out" Doors and Windows for Residential Construction Projects.
5. Choose construction project foundations.

### CNST 1114. Basic Carpentry Lab 3 Credits (1+4P)

Provides students the opportunity to practice skills they have acquired in CNST 1114 and CNST 1115. It includes task-oriented projects in which students can apply many of the skills and knowledge that have been presented throughout the National Center for Construction and Education Research (NCCER) Carpentry Program.

**Corequisite:** CNST 1115, CNST 1116.

#### Learning Outcomes

1. Students will be able to operate hand and power tools safely.
2. Demonstrate the ability to read construction drawings.
3. Work effectively as a team.
4. Identify various types of building materials and their uses.
5. Calculate the quantities of lumber and wood products using industry standard methods.
6. Describe the fasteners, anchors and adhesives used in construction.

7. Describe the responsibilities of safety related to the construction industry.
8. Select proper tools for the job.
9. Identify the different grades and markings of wood building materials. 1
10. List and recognize different types of flooring materials. 1
11. Knowledge of the materials and methods used to construct floor systems using the platform method of floor framing. 1
12. Describe the procedure for laying out a wood frame wall. 1
13. Describe the correct procedure for laying out floor joist. 1
14. Estimate the materials required to frame a floor system.

### CNST 1116. BASIC CARPENTRY LAB 2 Credits (2)

### CNST 1118. 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.

### CNST 1144. Woodworking Skills I 3 Credits (1+4P)

Use and care of hand tools and elementary power tools, safety procedures, and supervised project construction. May be repeated up to 3 credits.

#### Learning Outcomes

1. Students will gain the skills necessary to use hand tools, and power tools, perform basic calculations accurately, and complete projects.
2. Students will purchase materials, draft, and construct one project without a door or drawer.
3. Students will develop creative thinking skills and problem-solving skills in working with the various hand tools.

### CNST 1166. 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. May be repeated up to 3 credits.

#### Learning Outcomes

1. Students will learn about the history of woodworking, learn about the different types of wood and best use for projects; learn about wood stain, and construct one project without a drawer working with various hand tools.

### CNST 1311. 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. May be repeated up to 4 credits.

### CNST 2994. Special Problems in Building Technology 1-4 Credits

Individual studies in areas directly related to building technologies. May be repeated up to 4 credits.

#### Learning Outcomes

1. Varies.

## COMM-COMMUNICATION (COMM)

### COMM 1115G. Introduction to Communication

#### 3 Credits (1+2P)

This survey course introduces the principles of communication in the areas of interpersonal, intercultural, small group, organizational, public speaking, mass, and social media. May be repeated up to 3 credits.

#### 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. May be repeated up to 3 credits.

#### 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. May be repeated up to 3 credits.

#### 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 2996. Special Topics

#### 1-3 Credits (1-3)

Specific subjects and credits to be announced in the Schedule of Classes. May be repeated up to 12 credits.

#### Learning Outcomes

1. Define and describe key concepts and principles related to the group study or selected topic as identified by the course subtitle.
2. Apply key concepts and principles related to the group study or selected topic as identified by the course subtitle.

### COMM 2997. Independent Study

#### 1-3 Credits (1-3)

Individualized, self-paced projects for students with a special interest in communication topics. Students must be sophomore standing to enroll. May be repeated up to 6 credits.

**Prerequisite:** COMM 1115G.

#### Learning Outcomes

1. The student will study a selected topic and conduct a literature review or comparable research assignment.
2. The student will apply knowledge and understanding of the topic in a final paper or project.

## CSCI-COMPUTER SCIENCE

### CSCI 1110. 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:** MATH 1215 or higher.

#### Learning Outcomes

1. Identify and differentiate programming constructs like IF, FOR, and WHILE.
2. Convert numbers between Hexadecimal, Binary and Decimal.
3. Write pseudo code to manipulate a robot.
4. Use an ASCII table to translate HEX strings into characters.
5. Encrypt and Decrypt simple messages with a Caesar Cypher.

### CSCI 1115G. Modern Computing in Practice

#### 4 Credits (3+2P)

This course provides a survey of practical and theoretical foundations for how computers work and how they support fundamental organizational needs. The course covers broad aspects of the hardware, software, and mathematical basis of computers. Lab assignments provide hands-on applications to use simple basic software tools to write simple programs, build and edit websites, analyze data with spreadsheets, choose an office productivity suite, and demonstrate computer literacy to potential employers. May be repeated up to 4 credits.

**Prerequisite:** MATH 1130G or MATH 1215 or higher.

#### Learning Outcomes

1. Students will create simple python programs using conditional statements and loops.
2. Students will analyze data with spreadsheet formulas, charts, and tools.
3. Students will create and publish a personal website using website building tools.
4. Students will edit HTML and CSS to format a website manually.
5. Students will practice the skill of performing software QA and providing actionable feedback to developers.
6. Students will become aware of common cybersecurity risks.
7. Students will learn basic vocabulary and context for broad aspects of hardware, software, and computer science theory such as Security, Privacy, Cloud Computing, the Internet, the Web, Operating Systems, Discrete Math, and Information Systems.
8. Students will be exposed to various sub-fields of CS including artificial intelligence, security, data analytics, UX, web development, and QA testing.
9. Students will reason about the societal impacts of technology. 1



- Students will incorporate their new knowledge and skills into their resume.

### **CSCI 1120. 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.

### **CSCI 1210. Computer Programming Fundamentals**

#### **3 Credits (2+2P)**

This course is an introduction to problem-solving methods and algorithm development. Students will learn how to design, code, debug, and document programs. Students will explore basic programming concepts including variables, data types, operators and expressions. Students will learn about input/output mechanisms, including command prompt interaction, and reading and writing data to files. Students will be introduced to control structures such as branching, conditionals, iteration, and loops and arrays. They will also learn how to define and use functions/methods to structure code and improve code reuse. May be repeated up to 3 credits.

**Prerequisite(s):** MATH 1215 or higher.

#### **Learning Outcomes**

- Demonstrate an understanding of procedural programming techniques by implementing programs which employ structured programming techniques.
- Implement control flow structures in programs to execute statements in a specified order, repeat sequences of statements, and execute different statements based on conditions.
- Apply modularization principles by defining and using functions/methods to structure code and improve code reuse and maintainability.
- Write code utilizing data structures such as arrays, simple classes and objects, to provide useful access to, and operations on, data.
- Input/output mechanisms to collect user input and display data, including implementing error handling mechanisms to handle invalid input and output operations. the concept of recursion and identify base case and inductive step.

### **CSCI 1220. Computer Programming Fundamentals: Python**

#### **3 Credits (3)**

This course is an introduction to fundamental programming concepts, with a focus on problem-solving techniques and algorithm development using the Python programming language. Students will learn how to create basic scripts, work with data types and variables, use control structures, and build functions. The course is designed for students with little or no prior experience in programming and is intended to provide a foundation in programming that can be applied in a variety of fields.

**Prerequisite:** MATH 1215 or higher.

#### **Learning Outcomes**

- Apply programming concepts to design and develop solutions for computational problems.
- Utilize optimal flow-control strategy for solving a given problem.
- Design and implement functions to support organization, decomposition and reusability of code.
- Evaluate and select data structures to efficiently organize and store information for a given problem.

- Demonstrate the concept of scope to control access to global, local, and class variables.
- Create and use a simple class to demonstrate object-oriented programming principles.
- Utilize basic file input/output with text-based files.

### **CSCI 1225. 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):** CSCI 1220 or CSCI 4520.

### **CSCI 1235. 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):** MATH 1220G.

### **CSCI 1240. C++ Programming I**

#### **3 Credits (2+2P)**

This course is an introduction to problem-solving methods and algorithm development using C++. Students will learn how to design, code, debug, and document programs. Students will explore basic programming concepts including variables, data types, operators and expressions. They will also learn how to work with the C++ preprocessor directives and libraries. Students will learn about input/output mechanisms, including command prompt interaction, reading and writing data to files. Students will be introduced to control structures such as branching, conditionals, iteration, and loops and arrays. They will also learn how to define and use functions to structure code and improve code reuse.

**Prerequisite:** MATH 1215 or higher.

#### **Learning Outcomes**

- Implement programs which employ structured programming techniques.
- Implement control flow structures.
- Apply modularization principles by defining and using functions/methods to structure code and improve code reuse and maintainability.
- Write code utilizing data structures such as arrays, using pointers, and simple classes to provide useful access to, and operations on, data.
- Use input/output mechanisms to collect user input and display data, including implementing error handling mechanisms to handle invalid input and output operations.

### **CSCI 1720. Computer Science I**

#### **4 Credits (3+2P)**

Computational problem solving; problem analysis; implementation of algorithms using Java. Object-oriented concepts, arrays, searching, sorting, and recursion.

**Prerequisite:** (A C- or better in either MATH 1250G or (MATH 1430G or higher)) OR (A C- or better in MATH 1220G and a 1 or better in the CS Placement Test) OR (A C- or better in MATH 1220G and a C- or better in CSCI 1110).

**Learning Outcomes**

1. Develop algorithms to solve problems.
2. Implement algorithms using the fundamental programming features of sequence, selection, iteration, and recursion.
3. Apply an understanding of primitive and object data types.
4. Design and implement classes based on given attributes and behaviors.
5. Explain the fundamental concepts of object-oriented programming.

**CSCI 2210. Object-Oriented Programming****4 Credits (3+2P)**

This course is an introduction to object-oriented programming. Including: Classes and objects, and associated topics such as constructors, properties, and methods, inheritance, polymorphism, encapsulation, abstraction, exception handling and best practices. May be repeated up to 4 credits.

**Prerequisite:** At least a C- in CSCI 1720 or ENGR 140.

**Learning Outcomes**

1. Implement object-oriented designs based on project requirements.
2. Use encapsulation to write programs that are loosely coupled and easy to debug, maintain and modify.
3. Use inheritance to define simple class hierarchies that allow code to be reused by distinct subclasses.
4. Implement and reason about control flow in a program using polymorphism to solve common programming problems.

**CSCI 2220. Introduction to Data Structures and Algorithms****4 Credits (3+2P)**

Design, implement, and use fundamental abstract data types including linked lists, stacks, queues, and trees. Analyze the time and space complexity of algorithms, such as sorting.

**Prerequisite:** At least a C- in CSCI 1720, or placement.

**Learning Outcomes**

1. Implement basic data structures such as linked lists, stacks, queues, and trees in a high-level programming language.
2. Compare alternative implementations of data structures with respect to time and space complexity.
3. Explain the advantages and disadvantages of a variety of sorting algorithms.

**CSCI 2230. Assembly Language and Machine Organization****4 Credits (3+2P)**

Computer structure and system organization, instruction execution, memory addressing modes, hardware/software interface. Programming in assembly language. May be repeated up to 4 credits.

**Prerequisite:** At least a C- in CSCI 1720 or ENGR 140.

**Learning Outcomes**

1. Describe the architecture of a microcontroller, the interconnections between the components, and the major units inside the CPU.
2. Use signed and unsigned numbers, bitwise operations, branching instructions, and the corresponding flags in the status register.
3. Use immediate, direct, indirect addressing modes in assembly instructions.
4. Map high-level programming language features to assembly instructions, such as loops, conditionals, procedure calls, value and reference parameter passing, return values, and recursion.
5. Interface with input/output devices via instructions, memory addressing, or interrupts.
6. Design and implement an assembly language program.

**CSCI 2310. 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 CSCI 4560.

**Prerequisite:** At least C- in CSCI 1720.

**Learning Outcomes**

1. Use logic to specify precise meaning of statements, demonstrate the equivalence of statements, and test the validity of arguments.
2. Construct and recognize valid proofs using different techniques including the principle of mathematical induction.
3. Use summations, formulas for the sum of arithmetic and geometric sequences.
4. Explain and apply the concepts of sets and functions.
5. Apply counting principles to determine the number of various combinatorial configurations.

**CSCI 2410. Practical Programming****2 Credits (1+1P)**

A hands-on dive into practical programming skills development. Students will practice skills such as implementing algorithms that manipulate data in arrays and other data structures, implementing and using hashing-based data collections, using I/O in programs to access and create data, and object-oriented programming. Students will also focus on honing their use of tools such as command line, integrated development environments, debuggers, and profilers for software development. May be repeated up to 2 credits.

**Learning Outcomes**

1. Perform simple manipulation of arrays and other basic data structures.
2. Better utilize objects and object oriented programming.
3. Utilize different tools for building, debugging, and improving their programs.
4. Will be able to learn and use a new programming language quickly.
5. Use basic I/O capabilities in a variety of languages.
6. Use documentation to learn important features of a programming languages.
7. Write programs that solve interview-like problems.

**CSCI 2996. Special Topics****1-3 Credits**

Varies.

**Learning Outcomes**

1. Varies.

**CSCI 3410. Introduction to Intelligent Agents Using Science Fiction****3 Credits (3)**

This course uses science-fiction movies to introduce fundamental principles and techniques in agents and multi-agent systems. It is a gentle introduction to decision theory, machine learning, multi-agent systems, and ethics in agent-based systems.

**Learning Outcomes**

1. Use decision-theoretic models and algorithms to represent and solve simple planning and reasoning problems under uncertainty.
2. Use Markov Decision Processes to model and solve planning and reinforcement learning problems.
3. Use game-theoretic models and algorithms to represent and solve simple game-theoretic problems.
4. Understand the tradeoffs between the different agent models.

- Understand the challenges for ensuring that AI agents are safe as they play an increasingly large role in modern society.

#### **CSCI 3710. Software Development**

##### **4 Credits (3+2P)**

Software specification, design, testing, maintenance, documentation; informal proof methods; team implementation of a large project. Taught with CSCI 4575.

**Prerequisite:** At least a C- in CSCI 2710 and CSCI 2220.

##### **Learning Outcomes**

- Understand and explain the activities and structure of different styles of software development processes, including waterfall, (spiral), iterative, and agile methodologies.
- Apply requirements knowledge and techniques to create functional and non-functional requirements for a software system.
- Apply high and low level design ideas to create an object-oriented design of a software system.
- Use good design and programming ideas to implement individual and team software systems in compiled OOP languages.
- Apply white and black box testing techniques and tools to individual and team software development.
- Use UML class diagrams (and sequence diagrams) to capture aspects of system design and/or requirements (domain).
- Use practical software development tools, including version control systems, automated build tools, and testing tools.

#### **CSCI 3720. Data Structures and Algorithms**

##### **4 Credits (3+2P)**

Introduction to efficient data structure and algorithm design. Order notation and asymptotic run-time of algorithms. Recurrence relations and solutions. Abstract data type dynamic set and data structures based on trees. Classic algorithm design paradigms: divide-and-conquer, dynamic programming, greedy algorithms. Taught with CSCI 5110. May be repeated up to 4 credits.

**Prerequisite:** At least a C- in CSCI 2220 and CSCI 2310.

##### **Learning Outcomes**

- Analyze the growth of functions via asymptotic notation.
- Evaluate the asymptotic running time of a given algorithm.
- Solve recurrence relations of the kinds encountered in algorithm analysis.
- Design algorithms using the divide-and-conquer technique.
- Design algorithms using the greedy technique.
- Design algorithms using the dynamic-programming technique.
- Use and analyze data structures based on trees.
- Analyze the design, correctness, and time complexity of basic graph algorithms.

#### **CSCI 3730. Compilers and Automata Theory**

##### **4 Credits (3+2P)**

Methods, principles, and tools for programming language processor design; basics of formal language theory (finite automata, regular expressions, context-free grammars); development of compiler components. Taught with CSCI 4580.

**Prerequisite:** At least a C- in CSCI 2210, CSCI 2220, and CSCI 2230.

##### **Learning Outcomes**

- Understand the language theory concepts of regular languages, context free languages, regular expressions, context free grammars, and formal language hierarchy.
- Use Thompson's construction to convert from regular expression to NFA, and subset construction to convert from NFA to DFA.

- Apply recursive descent parsing in programming a parser of a small grammar.
- Understand the ideas in LL and LR parsing of context-free language classes.
- Understand and use table-driven top-down (LL(1)) and bottom up (SLR) parsing to parse a sentence.

#### **CSCI 3790. Algorithm Design & Implementation**

##### **3 Credits (3)**

Introduction to efficient data structure and algorithm design. Basic graph algorithms. Balanced search trees. Classic algorithm design paradigms: divide-and-conquer, greedy scheme, and dynamic programming. Taught with CSCI 4590.

**Prerequisite:** At least a C- in CSCI 2220, or consent of instructor.

##### **Learning Outcomes**

- Be able to use and implement sorting algorithms.
- Be able to design and implement graph algorithms.
- Be able to design and implement algorithms using the divide-and-conquer technique.
- Be able to design and implement algorithms using the greedy technique.
- Be able to design and implement algorithms using the dynamic programming technique.
- Be able to use and implement balanced search trees.
- Be able to use and implement hashing techniques.
- Be able to perform the run time analysis of basic algorithms using Big O notation.

#### **CSCI 3997. Independent Study**

##### **1-6 Credits (1-6)**

Faculty supervised investigation, to culminate in a written report. May be repeated up to 6 credits.

##### **Learning Outcomes**

- Varies.

#### **CSCI 4105. Programming Language Structure I**

##### **3 Credits (3)**

Syntax, semantics, implementation, and application of programming languages; abstract data types; concurrency. Not for Computer Science graduate students.

**Prerequisite:** At least a C- in CSCI 3730 and CSCI 3710.

##### **Learning Outcomes**

- Improve the background for choosing appropriate programming languages for certain classes of programming problems.
- Increase the ability to learn new programming languages.
- Critically evaluate what paradigm and language are best suited for a new problem.
- Demonstrate the use of the primary segments for a running program.
- Apply the principles of functional programming.
- Apply the principles of logic programming.
- Program a simple parallel program with threads.
- Program in at least five different programming languages.
- Program in C to demonstrate architecture details.

#### **CSCI 4110. Computing Ethics and Social Implications of Computing**

##### **1 Credit (1)**

An overview of ethics for computing majors includes: history of computing, intellectual property, privacy, ethical frameworks, professional ethical responsibilities, and risks of computer-based systems.

**Prerequisite:** At least a C- in CSCI 3710.

**Learning Outcomes**

1. Understand the fundamental technologies and operation of the web.
2. Design and develop responsive interactive web sites.
3. Deploy web applications on Cloud Computing Platforms.
4. Leverage modern tools and packages to develop full stack web applications.
5. Be fluent in the application of emerging web technologies like browser extensions, WebSockets, and WebRTC.
6. Use existing materials and references on the web to learn new skills.

**CSCI 4120. Operating Systems I**

**3 Credits (3)**

Operating system principles and structures, and interactions with architectures. Not for Computer Science graduate students.

**Prerequisite:** At least a C- in CSCI 2230, CSCI 3710, and CSCI 3720.

**Learning Outcomes**

1. Explain OS control and management of hardware resources.
2. Explain OS management and execution of processes.
3. Explain OS control and management of real and virtual memory.
4. Explain classical concurrency issues and their solutions.
5. Analyze and implement threads.
6. Analyze OS interaction with networks and architecture.

**CSCI 4130. Linux System Administration**

**3 Credits (3)**

Basic system administration for Linux environments. Topics include user managements, file systems, security, backups, system monitoring, kernel configuration and other relevant aspects of system administration. Not for Computer Science graduate students

**Learning Outcomes**

1. Understand the architecture of a Linux system and software licensing (Linux's principles and philosophy).
2. Use common Linux commands for system installs, upgrades, and maintenance.
3. Use a Linux Command Line Interface for navigation and understanding the file system structure.
4. Recognize processes, automation and scripting tasks.
5. Utilize basic system security and managing file systems, user accounts, and file and folder ownership and permissions.
6. Manage and troubleshoot network configurations.
7. Manage and understand Domain Name Servers, Network File Systems, Web servers, and other common Linux applications.

**CSCI 4140. Database Management Systems I**

**3 Credits (3)**

Database design and implementation; models of database management systems; privacy, security, protection, recovery. Not for Computer Science graduate students. Taught with CSCI 5140.

**Prerequisite:** At least a C- in CSCI 2220 and CSCI 2310.

**Learning Outcomes**

1. Utilize the basic concepts of relational database model.
2. Utilize database query languages (e.g. SQL).
3. Identify data integrity and security requirements.
4. Analyze, capture, and model user requirements for building database systems using conceptual models.
5. Design and normalize relational schemas.

6. Apply application development methods to implement a database system.

**CSCI 4215. Parallel Programming**

**3 Credits (3)**

Programming of shared memory and distributed memory machines; tools and languages for parallel programming; techniques for parallel programming; parallel programming environments. Not for Computer Science graduate students. Taught with CSCI 5215.

**Prerequisite:** At least a C- in CSCI 3730 or consent of instructor.

**Learning Outcomes**

1. Describe existing parallel architectures including shared memory versus distributed memory platforms.
2. Apply basic techniques for organizing parallel computations.
3. Apply basic techniques for performance measurement and theoretical limitations of parallelism.
4. Explain alternative parallel techniques and hardware.
5. Perform performance Analysis of different parallel programming techniques.
6. Program shared memory machines using threads, processes, and the OpenMP library.
7. Program using a message passing paradigm and obtain working knowledge of the Message Passing Interface (MPI).

**CSCI 4220. Cloud and Edge Computing**

**3 Credits (3)**

The course presents a top-down view of cloud computing, from applications and administration to programming and infrastructure. Its main focus is on the concepts of networking and parallel programming for cloud computing and large scale distributed systems which form the cloud infrastructure. The topics include: overview of cloud computing, cloud systems, parallel processing in the cloud, distributed storage systems, virtualization, security in the cloud, and multicore operating systems. Students will study state-of-the-art approaches to cloud computing followed by large cloud corporations, namely Google, Amazon, Microsoft, and Yahoo. Students will also apply what they learn through project developments using Amazon Web Services. Not for graduate Computer Science majors. Taught with: CSCI 5220.

**Prerequisite:** At least a C- in CSCI 3720; background in CSCI 4245/ CSCI 5245 is preferred or consent of instructor.

**Learning Outcomes**

1. The emphasis of the course will be on the understanding the concepts and the engineering trade-offs involved in the design of cloud computing systems.
2. Cloud deployment models, cloud service models (software-as-a-service, infrastructure- as-a-service, protocol-as-a-service), cloud architecture, cloud-edge security, service level agreements, and load balancing in cloud and datacenters.
3. Learn about cloud computing, especially what are their fundamental components, how these components interact, and how the technology is evolving for the future (edge computing, cloudlets, mobile edge computing, etc.).

**CSCI 4225. Introduction to Cryptography**

**3 Credits (3)**

The course covers basic cryptographic primitives, such as symmetric, public-key ciphers, digital signature schemes, and hash functions, and their mathematical underpinnings. Course helps students understand basic notions of security in a cryptographic sense: chosen plaintext and chosen ciphertext attacks, games, and reductions. Course also covers

computational number theory relevant to cryptography. Consent of Instructor required. Taught with: CSCI 5225.

**Prerequisite:** CSCI 2310 (or equivalent) with a C or better.

**Learning Outcomes**

1. Describe basic cryptographic primitives, including symmetric ciphers, asymmetric ciphers, digital signatures, message authentication codes, and hash functions.
2. Understand the mathematical, fundamental underpinnings of cryptography, and how to reason about the security of crypto primitives: indistinguishability (IND) properties of ciphertexts, CPA/CCA games, and reductions to fundamental math assumptions.
3. Be able to discuss number theory/algebra underpinning the design of cryptographic primitives, in some depth.

**CSCI 4235. Cellular Networks and Mobile Computing**

**3 Credits (3)**

This course will offer a solid introduction to major global wireless standards and comparisons of the different wireless technologies and their applications and examine each technology and how to utilize several different systems for the best results. A basic understanding of Computer Networks is preferable as a course prerequisite.

**Learning Outcomes**

1. Understand user associations and routing in a cellular/mobile network.
2. Develop insight into interaction of elements within the cellular/mobile core.
3. Understand the concept of end-to-end delivery of a packet and/or signal.
4. Develop an understanding of what happens with the hand-off at each step along the communications path.
5. Be able to explain differences in core architecture between different generations of cellular and mobile network technologies.

**CSCI 4240. Software Reverse Engineering**

**3 Credits (3)**

This class provides students with fundamental experience in software reverse engineering with a focus on malware reverse engineering. Students will learn operational security for safely analyzing untrusted code in a sandbox environment. Students will learn control flow integrity attacks, binary control flow analysis, and how to analyze live program behavior. Taught together with CSCI 5240.

**Learning Outcomes**

1. Students will learn how malware behaves, spreads, and is controlled.
2. Students will learn how to safely analyze malware in controlled environments.
3. Students will learn how malware seeks to hide in systems.
4. Students will learn to perform static analysis of binaries using simple tools.
5. Students will learn how malware obfuscates itself to avoid analysis, including using crypto packers, polymorphism, and sandbox detection.
6. Students will learn to perform decompilation and control-flow analysis of binaries using Ghidra.
7. Students will learn to dynamically analyze malware in a sandbox environment while observing network traffic, resource consumption, and system calls.
8. Students will learn to detect malware running with operating-system level permissions (rootkits).

9. Students will learn memory forensics techniques to detect malware hidden within benign processes.

**CSCI 4245. Computer Networks I**

**3 Credits (3)**

Fundamental concepts of computer communication networks: layered network architecture, network components, protocol stack and service. Example of application, transport, network and data link layers, protocols primarily drawn from the Internet (TCP, UDP, and IP) protocol multimedia networks; network management and security. Not for Computer Science graduate students. Taught with CSCI 5245.

**Prerequisite:** At least a C- in CSCI 2220 and CSCI 2230.

**Learning Outcomes**

1. Understand how to break down the Internet into layers of the OSI model and how each layer of abstraction manages complexity.
2. Understand how data is encoded at the physical layer over copper, fiber, and RF, and the importance of framing and collision avoidance.
3. Understand the concept of packet switching networks, switch fabrics, the ARP, the DHCP, OSPF, and NAT.
4. Understand Internet organization and governance including IANA, ASes, IXPs, ISPs, CAs, and the BGP.
5. Understand the TCP/IP paradigm, including flavors of self-clocking, congestion control, the need for ports, and the end-to-end argument.
6. Understand common application-layer protocols including HTTP(S), FTP, SMTP, etc.
7. Understand the security and privacy guarantees and non-guarantees of TLS, and how they are achieved.
8. Understand the inherent consensus challenges of networked computing, and classical solutions such as the NTP and Lamport Clocks.
9. Write networking program in C that implements an application-layer protocol, directly using system calls and managing memory.

**CSCI 4250. Human-Centered Computing**

**3 Credits (3)**

Covers iterative, human-centered interface design, including prototyping and evaluation. Basics of graphic design and visualization. Not for Computer Science graduate students. Taught with CSCI 5250.

**Prerequisite:** At least C- in CSCI 3710.

**Learning Outcomes**

1. Describe, analyze, and/or critique a device interface using a design vocabulary.
2. Enact a human-centered process of interaction design: gather data; develop a data-driven design; iterate design through testing; and evaluate results.
3. Conduct human-computer interaction research by proposing, developing, and conducting experiments; analyzing data; and developing synthesized results.
4. Communicate design and evaluation with presentations, demos, and reports.
5. Implement a variety of interaction techniques.

**CSCI 4255. Digital Game Design**

**3 Credits (3)**

An introduction to digital game design. Topics include design, development, and playtesting of games. The course is structured to use team-based learning. Not for Computer Science graduate students. Taught with CSCI 5255.

**Prerequisite/Corequisite:** CSCI 3710.

**Learning Outcomes**

1. Describe, analyze, and/or critique games with a consistent vocabulary.
2. Design, develop, and playtest games.
3. Understand the formal systems of games.
4. Communicate game designs through demonstrations and presentations.

**CSCI 4265. Modern Web Technologies****3 Credits (3)**

In this course, we will take a full-stack approach to modern web application design. We will start with the fundamentals including HTML5, CSS3, Javascript, JSON, and the underlying networking concepts and protocols driving the modern web. We will then move on to more advanced topics including javascript backend development with Node.js, NoSQL database design with MongoDB, cloud computing, and responsive web design. Finally, we cover advanced topics including the design and implementation of browser extensions and real-time web technologies like WebRTC and WebSockets. Consent of Instructor required. Taught with: CSCI 5265.

**Learning Outcomes**

1. Understand the fundamental technologies and operation of the web.
2. Design and develop responsive interactive web sites.
3. Deploy web applications on Cloud Computing Platforms.
4. Leverage modern tools and packages to develop full stack web applications.
5. Be fluent in the application of emerging web technologies like browser extensions, WebSockets, and WebRTC.
6. Use existing materials and references on the web to learn new skills.

**CSCI 4270. Principles of Virtual Reality****3 Credits (3)**

This course is an introduction to building systems and doing research in / on virtual reality. We cover system design, development, and evaluation, with an emphasis on recent research in the space. We cover a range of methods, qualitative and quantitative, in order to develop insights into effective VR designs. Students in this class will develop a foundation in VR development; learn about current topics in VR; and design, develop, evaluate, and report on a VR system.

**Prerequisite:** CSCI 4250.

**Learning Outcomes**

1. Design and develop systems in virtual reality.
2. Understand the variety of development techniques in VR.
3. Understand the state-of-the-art in VR systems.
4. Communicate understanding of people, designs, and evaluations through presentations, demos, and/or reports.

**CSCI 4310. Bioinformatics Programming****3 Credits (3)**

Computer programming to analyze high-throughput molecular biology data including genomic sequences, bulk and single-cell transcriptome, epigenome, and other omics data. Quality control, library size normalization, confounding effect removal, clustering, statistical modeling, trajectory inference, and visualization. Taught with CSCI 5310.

**Learning Outcomes**

1. Write R scripts and functions to manipulate biological sequences, genome annotation, and gene expression data.
2. Perform high-throughput data analysis with established R packages.
3. Detect differential gene expression on RNA sequencing data.

4. Perform single-cell RNA sequencing data analysis (quality control, library size normalization, confounding effect removal, modeling).
5. Assess statistical significance of analytical results.
6. Create automatic data analysis pipeline to link multiple software packages.

**CSCI 4410. Computer Graphics I****3 Credits (3)**

Languages, programming, devices, and data structures for representation and interactive display of complex objects. Not for Computer Science graduate students. Taught with CSCI 5405.

**Prerequisite:** At least C- in CSCI 3730 or CSCI 3710.

**Learning Outcomes**

1. Techniques used in three-dimensional graphics.
2. Computer Graphics lightning and shading.
3. Client-server graphics using WebGL.
4. Geometric and Solid modeling.
5. Computer Graphics implementation algorithms.

**CSCI 4415. Introduction to Data Mining****3 Credits (3)**

Techniques for exploring large data sets and discovering patterns in them. Data mining concepts, metrics to measure its effectiveness. Methods in classification, clustering, frequent pattern analysis. Selected topics from current advances in data mining. Taught with CSCI 5415.

**Prerequisite:** At least a C- in CSCI 220 and CSCI 2310.

**Learning Outcomes**

1. Explain and recognize different data mining tasks such as data pre-processing, visualization, classification, regression, clustering, association rules, and anomaly detection.
2. Apply classical data mining / machine learning algorithms for classification, clustering, association rules, and anomaly detection.
3. Evaluate and compare the performance of different data mining / machine learning algorithms.
4. Utilize data mining algorithms to analyze data in real applications using a data mining tool.

**CSCI 4430. Graph Data Mining****3 Credits (3)**

The course covers graph terminology, representation, and techniques to extract patterns from large graph data. The topics include random and scale-free graph generation, link analysis (PageRank), graph representation learning, graph neural networks, deep graph generation, community detection, frequent subgraph mining, graph classification, influence maximization, and knowledge graph mining.

**Prerequisite:** At least a C- in CSCI 2220 or CSCI 1220, and CSCI 2310, or consent of instructor.

**Learning Outcomes**

1. Have significant familiarity with different state-of-the-art theories and practices of graph data mining.
2. Graph representation and graph querying using graph manipulating toolbox/library.
3. Use random and scale-free graph models to generate graphs and visualize complex network properties.
4. Apply algorithms such as PageRank, spectral clustering, and non-negative matrix factorization.
5. Implement graph representation learning algorithms and graph neural networks.

- Understand much of the current literature on the topic, review papers, extend their knowledge through further study, and present findings of the papers.

### **CSCI 4435. Text Mining and Natural Language Processing**

#### **3 Credits (3)**

This course is an introduction to text mining and natural language processing (NLP). It covers NLP techniques for extracting insights from unstructured text data. Topics include text classification, semantic textual similarity, topic modeling, sentiment analysis, text summarization, text generation, and machine translation.

**Prerequisite:** At least a C- in CSCI 2220 and CSCI 2310.

#### **Learning Outcomes**

- Describe and apply techniques for text processing, text representation, and text modeling.
- Describe and apply machine learning algorithms for text mining and NLP tasks such as text classification, semantic textual similarity, topic modeling, sentiment analysis, text summarization, text generation, and machine translation.
- Utilize Python and popular libraries for implementing NLP-based applications.
- Evaluate the performance of text mining and NLP algorithms.

### **CSCI 4440. Generative Artificial Intelligence**

#### **3 Credits (3)**

Covers the theory and applications of generative artificial intelligence. Concentration will be on specific topics such as large language models, adversarial neural networks, neural symbolic computing, and inductive logic programming. May be repeated up to 3 credits.

#### **Learning Outcomes**

- Understand the theoretical foundation of generative AI tools.
- Understand the strengths and weaknesses of generative AI tools and identify appropriate tools for a given application.
- Utilize advanced generative AI tools such as multi-modal LLMs for problem-solving and developing practical applications.
- Understand the ethical consequence of using generative AI tools.

### **CSCI 4510. C++ Programming**

#### **3 Credits (3)**

Programming in the C++ language. Taught with CSCI 1240. More advanced than CSCI 1240. Recommended for nonmajors only. Not for Computer Science undergraduate students.

#### **Learning Outcomes**

- 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.

### **CSCI 4520. 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 CSCI 1220. More advanced than CSCI 1220.

#### **Learning Outcomes**

- 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.

### **CSCI 4525. 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. For graduate students only. Has more advanced work than CSCI 1225, and does not count towards Computer Science major requirements. Computer Science students are excluded from taking this course.

**Prerequisite(s):** CSCI 1220 or CSCI 4520.

### **CSCI 4540. Computer Science I Transition**

#### **3 Credits (3)**

Computational problem solving; problem analysis; implementation of algorithms. Recursive structures and algorithms. For Computer Science graduate students only; cannot be used to meet a Computer Science student's program of study. Taught with CSCI 1720.

#### **Learning Outcomes**

- Develop algorithms to solve problems.
- Implement algorithms using the fundamental programming features of sequence, selection, iteration, and recursion.
- Apply an understanding of primitive and object data types.
- Design and implement classes based on given attributes and behaviors.
- Explain the fundamental concepts of object-oriented programming.

### **CSCI 4545. Object Oriented Programming Transition**

#### **3 Credits (3)**

Introduction to problem analysis and problem solving in the object-oriented paradigm. Practical introduction to implementing solutions in the C++ language. Hands-on experience with useful development tools. Cannot be used in a Computer Science student's program of study. Taught with CSCI 2210.

**Prerequisite:** At least a C- in CSCI 1720 or CSCI 4540 or consent of instructor.

#### **Learning Outcomes**

- Develop an algorithm to solve a problem.
- Implement algorithms using the C and C++ languages including imperative and object-oriented language features.
- 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.

6. Create UML class and relationship diagrams.
7. Design a class to model a real-world person, place, thing, or event.
8. Use editing and debugging software to create, debug, and test C and C++ programs.
9. Understand the basic terminology used in object-oriented programming. 1
10. Create a make file to build an executable from a set of C or C++ source files.

#### **CSCI 4550. Introduction to Data Structures Transition**

##### **3 Credits (3)**

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. Cannot be used in a C S student's program of study. Consent of Instructor required. Taught with CSCI 2220.

**Prerequisite:** At least a C- in CSCI 1720 or CSCI 4540 or consent of instructor.

##### **Learning Outcomes**

1. Be able to implement and use lists.
2. Be able to implement and use stacks.
3. Be able to implement and use queues.
4. Be able to implement and use trees.
5. Be able to perform the run time analysis of basic algorithms using Big O notation.
6. Be able to implement, use, and analyze searching algorithms.
7. Be able to solve a problem recursively.
8. Take a problem statement from a user and convert it into a Java program that fulfills the user's needs.
9. Create object oriented Java classes that effectively separate and hide implementation details from client applications.

#### **CSCI 4555. Machine Programming and Organization Transition**

##### **3 Credits (3)**

Computer structure, instruction execution, addressing techniques; programming in machine and assembly languages. Cannot be used in a Computer Science student's program of study. Taught with CSCI 2230.

**Prerequisite:** At least a C- in CSCI 1720 or CSCI 4540 or consent of instructor.

##### **Learning Outcomes**

1. Describe the architecture of a microcontroller, the interconnections between the components, and the basic units inside the CPU.
2. Use signed and unsigned numbers, the associated branching instructions, and the corresponding flags in the status register.
3. Explain immediate, direct, indirect addressing modes, their opcode and operands, and their utilities.
4. Map high-level programming language features to assembly instructions, including loops, conditionals, procedure calls, value and reference parameter passing, return values, and recursion.
5. Interface with I/O devices including LED and sensors via digital input and output, and analog-to-digital conversion.
6. Program timers/counters and interrupts to control real-time applications.
7. Design an assembly program.

#### **CSCI 4560. Discrete Math for Computer Science Transition**

##### **3 Credits (3)**

Logical connectives, sets, functions, relations, graphics, trees, proofs, induction, and application to computer science. For Computer Science

graduate students only. Cannot be used in a Computer Science student's program of study. Taught with CSCI 2310.

**Prerequisite:** At least a C- in CSCI 1720 or CSCI 4540 or consent of instructor.

##### **Learning Outcomes**

1. Use logic to specify precise meaning of statements, demonstrate the equivalence of statements, and test the validity of arguments.
2. Construct and recognize valid proofs using different techniques including the principle of mathematical induction.
3. Use summations, formulas for the sum of arithmetic and geometric sequences.
4. Explain and apply the concepts of sets and functions.
5. Apply counting principles to determine the number of various combinatorial configurations.

#### **CSCI 4575. Software Development Transition**

##### **3 Credits (3)**

Software specification, design, testing, maintenance, documentation; informal proof methods; team implementation of a large project. For Computer Science graduate students only. Cannot be used in a Computer Science student's program of study. Taught with CSCI 3710.

**Prerequisite(s):** At least a C- in CSCI 271 or CSCI 4545, in CSCI 2220 or CSCI 4550, or consent of instructor.

##### **Learning Outcomes**

1. Understand and explain the activities and structure of different styles of software development processes, including waterfall, (spiral,) iterative, and agile methodologies.
2. Apply requirements knowledge and techniques to create functional and non-functional requirements for a software system.
3. Apply high and low level design ideas to create an object-oriented design of a software system.
4. Use good design and programming ideas to implement individual and team software systems in compiled OOP languages.
5. Apply white and black box testing techniques and tools to individual and team software development.
6. Use UML class diagrams (and sequence diagrams) to capture aspects of system design and/or requirements (domain).
7. Use practical software development tools, including version control systems, automated build tools, and testing tools.

#### **CSCI 4580. Compilers and Automata Transition**

##### **3 Credits (3)**

Methods, principles, and tools for programming language processor design; basics of formal language theory (finite automata, regular expressions, context-free grammars); development of compiler components. For Computer Science graduate students only; cannot be used in a students program of study. Taught with CSCI 3730.

**Prerequisite:** At least a C in (CSCI 2210 or CSCI 4545), in (CSCI 2220 or CSCI 4550), in (CSCI 2230 or CSCI 4555), or consent of instructor.

##### **Learning Outcomes**

1. Understand the language theory concepts of regular languages, context free languages, regular expressions, context free grammars, and formal language hierarchy.
2. Use Thompson's construction to convert from regular expression to NFA, and subset construction to convert from NFA to DFA.
3. Apply recursive descent parsing in programming a parser of a small grammar.
4. Understand the ideas in LL and LR parsing of context-free language classes.



- Understand and use table-driven top-down (LL(1)) and bottom up (SLR) parsing to parse a sentence.

**CSCI 4980. Senior Project**  
**4 Credits (4)**

Capstone course in which Computer Science majors work in teams and apply computer science skills to complete a large project. Restricted to: Computer Science majors or Cybersecurity majors.

**Prerequisite:** At least a C- in CSCI 3730 and CSCI 3710.

**Learning Outcomes**

- Apply design and development principles in the construction of software systems of varying complexity.
- Apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.
- Design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs.
- Use current techniques, skills, and tools necessary for computing practice.
- Analyze a problem, and identify and define the computing requirements appropriate to its solution.
- Function effectively as teams to accomplish a common goal.
- Communicate effectively with a range of audiences.

**CSCI 4996. Special Topics**  
**1,12 Credits**

Topics announced in the Schedule of Classes. May be repeated up to 12 credits.

**Learning Outcomes**

- Varies.

**CSCI 4999. Senior Thesis**  
**4 Credits (4)**

Capstone course in which Computer Science majors apply computer science skills to complete a research project, culminating in a written thesis report. Restricted to: Computer Science majors or Bachelor of Science in Cybersecurity degree.

**Prerequisite:** At least a C- in CSCI 3730 and CSCI 3710.

**Learning Outcomes**

- Apply design and development principles in the construction of software systems of varying complexity.
- Apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.
- Design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs.
- Use current techniques, skills, and tools necessary for computing practice.
- Analyze a problem, identify, and define the computing requirements appropriate to its solution.
- Communicate effectively with a range of audiences via presentations and technical reports.

**CSCI 5110. Data Structure and Algorithms Transition**  
**3 Credits (3)**

Introduction to efficient data structure and algorithm design. Order notation and asymptotic run-time of algorithms. Recurrence relations and solutions. Abstract data type dynamic set and data structures based on

trees. Classic algorithm design paradigms: divide-and-conquer, dynamic programming, greedy algorithms. For Computer Science graduate students only. Taught with CSCI 3720.

**Prerequisite:** At least a C- in (CSCI 2220 or CSCI 4550) and a C- in (CSCI 2310 or CSCI 4560), or consent of instructor.

**Learning Outcomes**

- Analyze the growth of functions via asymptotic notation.
- Evaluate the asymptotic running time of a given algorithm.
- Solve recurrence relations of the kinds encountered in algorithm analysis.
- Design algorithms using the divide-and-conquer technique.
- Design algorithms using the greedy technique.
- Design algorithms using the dynamic-programming technique.
- Use and analyze data structures based on trees.
- Analyze the design, correctness, and time complexity of basic graph algorithms.

**CSCI 5140. Database Management Systems I**  
**3 Credits (3)**

Database design and implementation; models of database management systems; privacy, security, protection, recovery; taught with CSCI 4140; requires more advanced graduate work than taught with CSCI 4140. Students are expected to have solid knowledge of data structures and discrete mathematics.

**Learning Outcomes**

- Utilize the basic concepts of relational database model.
- Utilize database query languages (e.g. SQL).
- Identify data integrity and security requirements.
- Analyze, capture, and model user requirements for building database systems using conceptual models.
- Design and normalize relational schemas.
- Apply application development methods to implement a database system.

**CSCI 5215. Parallel Programming**  
**3 Credits (3)**

Programming of shared memory and distributed memory machines; tools and languages for parallel programming; parallelizing compilers; parallel programming environments; taught with CSCI 4215; requires more advanced graduate work than CSCI 4215. Students are expected to have knowledge of programming and machine organization equivalent to CSCI 2210 and CSCI 2230.

**Learning Outcomes**

- Describe existing parallel architectures including shared memory versus distributed memory platforms.
- Apply basic techniques for organizing parallel computations.
- Apply basic techniques for performance measurement and theoretical limitations of parallelism.
- Explain alternative parallel techniques and hardware.
- Perform performance Analysis of different parallel programming techniques.
- Program shared memory machines using threads, processes, and the OpenMP library.
- Program using a message passing paradigm and obtain working knowledge of the Message Passing Interface (MPI).

**CSCI 5225. Introduction to Cryptography**  
**3 Credits (3)**

The course covers basic cryptographic primitives, such as symmetric, public-key ciphers, digital signature schemes, and hash functions, and their mathematical underpinnings. Course helps students understand basic notions of security in a cryptographic sense: chosen plaintext and chosen ciphertext attacks, games, and reductions. Course also covers computational number theory relevant to cryptography. Consent of Instructor required. Taught with: CSCI 4225. Requires more advanced graduate work than CSCI 4225.

**Prerequisite:** CSCI 2310 (or equivalent) with a C or better.

#### **Learning Outcomes**

1. Describe basic cryptographic primitives, including symmetric ciphers, asymmetric ciphers, digital signatures, message authentication codes, and hash functions.
2. Understand the mathematical, fundamental underpinnings of cryptography, and how to reason about the security of crypto primitives: indistinguishability (IND) properties of ciphertexts, CPA/CCA games, and reductions to fundamental math assumptions.
3. Be able to discuss number theory/algebra underpinning the design of cryptographic primitives, in some depth.

#### **CSCI 5235. Cellular Networks and Mobile Computing**

##### **3 Credits (3)**

This course will offer a solid introduction to major global wireless standards and comparisons of the different wireless technologies and their applications and examine each technology and how to utilize several different systems for the best results. Taught together with CSCI 4235. A basic understanding of Computer Networks is preferable as a course prerequisite.

#### **Learning Outcomes**

1. Understand user associations and routing in a cellular/mobile network.
2. Develop insight into interaction of elements within the cellular/mobile core.
3. Understand the concept of end-to-end delivery of a packet and/or signal.
4. Develop an understanding of what happens with the hand-off at each step along the communications path.
5. Be able to explain differences in core architecture between different generations of cellular and mobile network technologies.

#### **CSCI 5240. Software Reverse Engineering**

##### **3 Credits (3)**

This class provides students with fundamental experience in software reverse engineering with a focus on malware reverse engineering. Students will learn operational security for safely analyzing untrusted code in a sandbox environment. Students will learn control flow integrity attacks, binary control flow analysis, and how to analyze live program behavior. Taught together with CSCI 4240.

#### **Learning Outcomes**

1. Students will learn how malware behaves, spreads, and is controlled.
2. Students will learn how to safely analyze malware in controlled environments.
3. Students will learn how malware seeks to hide in systems.
4. Students will learn to perform static analysis of binaries using simple tools.
5. Students will learn how malware obfuscates itself to avoid analysis, including using crypto packers, polymorphism, and sandbox detection.
6. Students will learn to perform decompilation and control-flow analysis of binaries using Ghidra.

7. Students will learn to dynamically analyze malware in a sandbox environment while observing network traffic, resource consumption, and system calls.
8. Students will learn to detect malware running with operating-system level permissions (rootkits).
9. Students will learn memory forensics techniques to detect malware hidden within benign processes.

#### **CSCI 5245. Computer Networks I**

##### **3 Credits (3)**

Fundamental concepts of computer communication networks: layered network architecture, network components, protocol stack and service. Example of application, transport, network and data link layers, protocols primarily drawn from the Internet (TCP, UDP, and IP) protocol suite; local and wide area networks, wireless and mobile networks, multimedia networks; network management and security; taught with CSCI 4245; requires more advanced graduate work than CSCI 4245. Students are expected to have solid knowledge of data structures, machine-level programming. Knowledge of statistics (at the level of MATH 371 or MATH 470) is recommended.

#### **Learning Outcomes**

1. Understand how to break down the Internet into layers of the OSI model and how each layer of abstraction manages complexity.
2. Understand how data is encoded at the physical layer over copper, fiber, and RF, and the importance of framing and collision avoidance.
3. Understand the concept of packet switching networks, switch fabrics, the ARP, the DHCP, OSPF, and NAT.
4. Understand Internet organization and governance including IANA, ASes, IXPs, ISPs, CAs, and the BGP.
5. Understand the TCP/IP paradigm, including flavors of self-clocking, congestion control, the need for ports, and the end-to-end argument.
6. Understand common application-layer protocols including HTTP(S), FTP, SMTP, etc.
7. Understand the security and privacy guarantees and non-guarantees of TLS, and how they are achieved.
8. Understand the inherent consensus challenges of networked computing, and classical solutions such as the NTP and Lamport Clocks.
9. Write networking program in C that implements an application-layer protocol, directly using system calls and managing memory.

#### **CSCI 5250. Human-Centered Computing**

##### **3 Credits (3)**

Covers iterative, human-centered interface design, including prototyping and evaluation. Basics of graphic design and visualization. Taught with SCI 4250. Requires more advanced graduate work than CSCI 4250 with an emphasis on studying recent research in human-computer interaction. Students are expected to have knowledge of software engineering equivalent to CSCI 3710.

#### **Learning Outcomes**

1. Describe, analyze, and/or critique a device interface using a design vocabulary.
2. Enact a human-centered process of interaction design: gather data; develop a data-driven design; iterate design through testing; and evaluate results.
3. Conduct human-computer interaction research by proposing, developing, and conducting experiments; analyzing data; and developing synthesized results.

4. Communicate design and evaluation with presentations, demos, and reports.
5. Implement a variety of interaction techniques.

#### **CSCI 5255. Digital Game Design**

##### **3 Credits (3)**

An introduction to digital game design. Topics include design, development, and playtesting of games. The course is structured to use team-based learning. Taught with CSCI 4255. Requires more advanced graduate work than CSCI 4255 with deeper attention to a team game project.

##### **Learning Outcomes**

1. Describe, analyze, and/or critique games with a consistent vocabulary.
2. Design, develop, and playtest games.
3. Understand the formal systems of games.
4. Communicate game designs through demonstrations and presentations.

#### **CSCI 5260. Visual Programming**

##### **3 Credits (3)**

Design and implementation of programs using visual (i.e. dataflow or diagrammatic) programming techniques, with an emphasis on real-time data processing. Students will learn how to design visual programs, including how to handle cycles and state maintenance, and will learn to process audio, video, and other data using visual programs. Students must be in graduate standing to enroll. Taught with CSCI 4260. Requires more advanced graduate work than CSCI 4260.

##### **Learning Outcomes**

1. Develop software in graph-based visual environments.
2. Understand flows of control in visual programming environments.
3. Use signals, digital and analog, to drive software.
4. Communicate software design and evaluation with presentations, demos, and reports.

#### **CSCI 5305. Bioinformatics**

##### **3 Credits (3)**

Introduction to bioinformatics and computational biology. Computational approaches to sequences analysis, protein structure prediction and analysis, and selected topics from current advances in bioinformatics; taught with CSCI 4305; requires more advanced graduate work than CSCI 4305. Students are expected to have a knowledge of algorithms and data structures equivalent to CSCI 3720 or exposure to Biology (equivalent to BIOL 2310 or BIOL 311).

##### **Learning Outcomes**

1. Explain the biology motivation of a bioinformatics question.
2. Formulate a computational problem and its solution to address a molecular biology question.
3. Implement basic bioinformatics algorithms such as sequence alignment, pattern matching, and genome assembly.
4. Evaluate the performance of a bioinformatics algorithm on real data sets.
5. Argue the correctness of a bioinformatics algorithm.
6. Analyze the complexity of a bioinformatics algorithm.

#### **CSCI 5310. Bioinformatics Programming**

##### **3 Credits (3)**

Computer programming to analyze high-throughput molecular biology data including genomic sequences, bulk and single-cell transcriptome, epigenome, and other omics data. Quality control, library

size normalization, confounding effect removal, clustering, statistical modeling, trajectory inference, and visualization. Taught with CSCI 4310. Requires more advanced graduate work than CSCI 4310.

##### **Learning Outcomes**

1. Write R scripts and functions to manipulate biological sequences, genome annotation, and gene expression data.
2. Perform high-throughput data analysis with established R packages.
3. Detect differential gene expression on RNA sequencing data.
4. Perform single-cell RNA sequencing data analysis (quality control, library size normalization, confounding effect removal, modeling).
5. Assess statistical significance of analytical results.
6. Create automatic data analysis pipeline to link multiple software packages.

#### **CSCI 5405. Artificial Intelligence I**

##### **3 Credits (3)**

Fundamental principles and techniques in artificial intelligence systems. Knowledge representation formalisms; heuristic problem solving techniques; automated logical deduction; robot planning methods; algorithmic techniques for natural language understanding, vision and learning; taught with CSCI 4405; requires more advanced graduate work than CSCI 4405. Students are expected to have strong knowledge of algorithms and data structures (at the level of CSCI 3720).

##### **Learning Outcomes**

1. Use various search algorithms commonly used in problem-solving.
2. Use methods for solving constraint satisfaction problems.
3. Use propositional and first-order logic to represent knowledge.
4. Use logical inference methods to derive conclusions from a knowledge base.
5. Use adversarial search for game-playing agents.
6. Analyze the different search strategies.
7. Design and Implement heuristic search for problem-solving.

#### **CSCI 5410. Computer Graphics I**

##### **3 Credits (3)**

Languages, programming, devices, and data structures for representation and interactive display of complex objects. Taught with C S 476. Requires more advanced graduate work than CSCI 4410. Students are expected to have knowledge of compilers design and software engineering equivalent to CSCI 3730 and CSCI 3710.

##### **Learning Outcomes**

1. Techniques used in three-dimensional graphics.
2. Computer Graphics lightning and shading.
3. Client-server graphics using WebGL.
4. Geometric and Solid modeling.
5. Computer Graphics implementation algorithms.

#### **CSCI 5415. DATA MINING**

##### **3 Credits (3)**

Techniques for exploring large data sets and discovering patterns in them. Data mining concepts, metrics to measure its effectiveness. Methods in classification, clustering, frequent pattern analysis. Selected topics from current advances in data mining. Students are expected to have a preparation in Discrete Mathematics and Data Structures equivalent to C S 272 and CSCI 2310. Requires more advanced graduate work than CSCI 4415. Taught with: CSCI 4415.

**Learning Outcomes**

1. Explain and recognize different data mining tasks such as data pre-processing, visualization, classification, regression, clustering, association rules, and anomaly detection.
2. Apply classical data mining / machine learning algorithms for classification, clustering, association rules, and anomaly detection.
3. Evaluate and compare the performance of different data mining / machine learning algorithms.
4. Utilize data mining algorithms to analyze data in real applications using a data mining tool.

**CSCI 5420. Applied Machine Learning I****3 Credits (3)**

An introductory course on practical machine learning. An overview of concepts for both unsupervised and supervised learning. Topics include classification, regression, clustering, and dimension reduction. Classical methods and algorithms such as linear regression, neural networks, support vector machines, and ensemble approaches. Recent techniques such as deep learning. Focused on applying of machine learning techniques in application domains. Taught with: CSCI 4420. Requires more advanced graduate work than CSCI 4420.

**Learning Outcomes**

1. Implement and utilize different data processing techniques.
2. Differentiate and assess several dimension reduction techniques.
3. Utilize several classifiers (SVM, Decision tree, k-Nearest Neighbor, and logistic regression) and differentiate their advantages and disadvantages.
4. Explain and demonstrate regression analysis.
5. Describe and illustrate clustering approaches.
6. Apply ensemble learning approaches.
7. Implement several neural network classifiers, including deep learning models.

**CSCI 5425. Introduction to Deep Learning****3 Credits (3)**

The course covers basic concepts of neural networks which include transition of classical machine learning to hierarchical feature learning, feedforward networks, regularization, optimization, hyperparameter tuning, deep convolutional networks and their applications in computer vision, deep sequence models, and deep generative models. Taught with C S 383. Requires more advanced graduate work than C S 383.

**Prerequisite:** At least a C- in C S 272 or CSCI 1220, and CSCI 2310, or consent of instructor.

**Learning Outcomes**

1. Have significant familiarity with different state-of-the-art theories and practices of deep learning.
2. Be able to apply deep learning to a variety of tasks suitable for data science-based projects of academia and industry.
3. Understand much of the current literature on the topic, review papers, and extend their knowledge through further study.
4. Design and evaluate novel deep learning models.
5. Train and test deep learning models on real-life and benchmark datasets using Python libraries such as TensorFlow and PyTorch.

**CSCI 5430. Graph Data Mining****3 Credits (3)**

The course covers graph terminology, representation, and techniques to extract patterns from large graph data. The topics include random and scale-free graph generation, link analysis (PageRank), graph representation learning, graph neural networks, deep graph generation,

community detection, frequent subgraph mining, graph classification, influence maximization, and knowledge graph mining. Taught with CSCI 4430. Requires more advanced graduate work than CSCI 4430.

**Prerequisite:** At least a C- in C S 272 or CSCI 1220, and CSCI 2310, or consent of instructor.

**Learning Outcomes**

1. Have significant familiarity with different state-of-the-art theories and practices of graph data mining.
2. Graph representation and graph querying using graph manipulating toolbox/library.
3. Use random and scale-free graph models to generate graphs and visualize complex network properties.
4. Apply algorithms such as PageRank, spectral clustering, and non-negative matrix factorization.
5. Implement graph representation learning algorithms and graph neural network.
6. Understand much of the current literature on the topic, review papers, extend their knowledge through further study, and present findings of the papers.

**CSCI 5435. Text Mining and Natural Language Processing****3 Credits (3)**

This course is an introduction to text mining and natural language processing (NLP). It covers NLP techniques for extracting insights from unstructured text data. Topics include text classification, semantic textual similarity, topic modeling, sentiment analysis, text summarization, text generation, and machine translation.

**Prerequisite:** At least a C- in CSCI 2220/C S 272 or C S 463/CSCI 4550 and C S 278/CSCI2310 (or C S 465/CSCI 4560).

**Learning Outcomes**

1. Describe and apply techniques for text processing, text representation, and text modeling.
2. Describe and apply machine learning algorithms for text mining and NLP tasks such as text classification, semantic textual similarity, topic modeling, sentiment analysis, text summarization, text generation, and machine translation.
3. Utilize Python and popular libraries for implementing NLP-based applications.
4. Evaluate the performance of text mining and NLP algorithms.

**CSCI 5440. Generative Artificial Intelligence****3 Credits (3)**

Covers the theory and applications of generative artificial intelligence. Concentration will be on specific topics such as large language models, adversarial neural networks, neural symbolic computing, and inductive logic programming. Taught together with CSCI 4440.

**Prerequisite:** At least a C- in CSCI 4405 or CSCI 5405.

**Learning Outcomes**

1. Understand the theoretical foundation of generative AI tools.
2. Understand the strengths and weaknesses of generative AI tools and identify appropriate tools for a given application.
3. Utilize advanced generative AI tools such as multi-modal LLMs for problem-solving and developing practical applications.
4. Understand the ethical consequence of using generative AI tools.

**CSCI 5505. Analysis of Algorithms****3 Credits (3)**

Techniques for design and analysis of algorithms; time and space complexity; proving correctness of programs. Particular algorithms such as sorting, searching, dynamic programming. NP complete problems.

Students are expected to have knowledge of algorithms and data structures equivalent to CSCI 3720.

#### **Learning Outcomes**

1. Prove algorithm correctness by loop-invariant.
2. Prove an algorithm to be incorrect by counterexamples.
3. Develop efficient divide-and-conquer algorithms.
4. Design and analyze binary search tree algorithms.
5. Construct dynamic programming solutions.
6. Prove the correctness of dynamic programming solutions by contraposition.
7. Traverse graphs efficiently.
8. Find paths in graphs efficiently.
9. Determine if a problem is NP-Complete or NP-Hard. 1
10. Basic concepts of quantum computing.

#### **CSCI 5510. Automata, Languages, Computability**

##### **3 Credits (3)**

Regular and context-free languages, pushdown and finite-state automata, Turing machines, models of computation, halting problems. Students are expected to have knowledge of algorithms equivalent to CSCI 3720.

#### **Learning Outcomes**

1. Describe the language accepted by an automaton or generated by a regular expression or a context-free grammar.
2. Design automata, regular expressions and context-free grammars accepting or generating a certain language.
3. Prove properties of languages, grammars, and automata with formal mathematical methods.
4. Convert between equivalent deterministic and non-deterministic finite automata, and regular expressions.
5. Convert between equivalent context-free grammars and pushdown automata.
6. Define Turing machines performing simple tasks.

#### **CSCI 5605. Operating Systems II**

##### **3 Credits (3)**

Advanced topics related to operating system principles, guided by the current literature. Students are expected to have knowledge of computer architectures and operating systems equivalent to CSCI 4230 and CSCI 4120.

#### **Learning Outcomes**

1. Further an understanding of the principles of operating systems.
2. Develop insight into process management and scheduling issues.
3. Understand memory management operation.
4. Develop an understanding of file system implementation and of multiple levels of hardware support and management.
5. Develop a deep understanding of the concepts of cooperating processes, including communication, synchronization, and deadlock (detection and avoidance).
6. Be able to evaluate operating system features.
7. Develop an understanding of the distributed operating system environment.

#### **CSCI 5750. Artificial Intelligence II**

##### **3 Credits (3)**

Covers advanced theory and application of artificial intelligence. Concentration on several specific research areas, such as knowledge representation, problem solving, common-sense reasoning, natural language understanding, automated tutoring systems, learning systems.

Students are expected to have knowledge of artificial intelligence equivalent to CSCI 4405.

#### **Learning Outcomes**

1. Apply selected planning algorithms in solving problems.
2. Identify problems where knowledge representation and reasoning techniques are applicable.
3. Be able to apply answer set programming in problem solving.
4. Be aware of various advanced research topics in Artificial Intelligence.

#### **CSCI 5810. Advanced Software Engineering**

##### **3 Credits (3)**

Advanced tools and methods for developing large software systems. Topics include object-oriented modeling and design, component architectures, templates and generic programming, software configuration and revision control, static and dynamic analysis tools, model, checking, advanced testing, and verification. Students are expected to have knowledge of software engineering equivalent to CSCI 3710.

#### **Learning Outcomes**

1. Be able to explain modern software development process ideas.
2. Be able to apply agile software development techniques in a project.
3. Be able to specify, design, and develop a complex software system in a team.
4. Be able to properly utilize both black box and white box testing techniques.
5. Be able to explain how unsound and incomplete formal methods can aid in system verification and validation.
6. Be able to utilize sound and complete formal methods to prove properties of a system.

#### **CSCI 5820. Database Management Systems II**

##### **3 Credits (3)**

Advanced data models and abstractions, dependencies, implementations, languages, database machines, and other advanced topics. Students are expected to have knowledge of data base management systems equivalent to CSCI 4140.

#### **Learning Outcomes**

1. Analyze storage and file structures of an RDBMS.
2. Analyze and apply indexing techniques of an RDBMS.
3. Analyze query evaluation approaches of an RDBMS.
4. Analyze the mechanisms of transaction management in an RDBMS.

#### **CSCI 5840. Computer Networks II**

##### **3 Credits (3)**

Advanced topics in computer networks. Covers advanced topics in networking, with emphasis on wireless, and IP networks. Students are expected to have knowledge of computer networks equivalent to CSCI 4245 and statistics equivalent.

#### **Learning Outcomes**

1. Understand design of link layer protocols.
2. Understand challenges and implementations for multimedia streaming.
3. Be able to use basic security constructs in the networking context.
4. Understand the concepts of edge and cloud computing.
5. Understand the concepts and challenges of Internet of Things.
6. Learn concepts of distributed networking.
7. Learn and evaluate future internet architectures.

**CSCI 5860. Algorithms in Systems Biology****3 Credits (3)**

The course will introduce important algorithms and computational models used in systems biology to study molecular mechanisms for cellular dynamics, processes, and systems. Cellular processes, such as metabolism and signal transduction, are studied as systems and networks quantitatively from high throughput molecular measurements. The topics include molecular biological systems, network alignment, model simulation, network inference, model optimization, and hybrid models. Students will be able to construct models and analyze their properties in the context of molecular biological systems. Students are expected to have knowledge of algorithms and data structures equivalent to CSCI 3720.

**Learning Outcomes**

1. Create mathematical representation of biological systems.
2. Infer biological network topology from observed omics data set.
3. Simulate the behavior of a biological system using a mathematical model.
4. Characterize behaviors of biological systems.
5. Estimate parameters in a biological system model.
6. Validate a model's statistical relevance given observed data.

**CSCI 5991. Special Research Problems****1-6 Credits (1-6)**

Faculty-supervised investigation, to culminate in a written report. Maximally 6 credits can be applied to the student program of study. Written agreement with faculty supervisor is the required consent. May be repeated up to 18 credits.

**Learning Outcomes**

1. Research experience for graduate student.

**CSCI 5994. Master's Project****1-6 Credits**

Project-oriented capstone course to be completed by Master of Science students under supervision of their advisor. Maximum of 6 credits may be applied toward Master of Science degree. Restricted to Computer Science majors. May be repeated up to 6 credits.

**CSCI 5996. Special Topics****1-6 Credits**

Topic announced in the Schedule of Classes. May be repeated up to 6 credits.

**CSCI 5999. Master's Thesis****1-6 Credits (1-6)**

Thesis to be developed by Master of Science Students under supervision of their advisor. May be repeated up to 6 credits.

**Learning Outcomes**

1. Varies.

**CSCI 6991. Pre-dissertation Research****1-15 Credits**

Pre-dissertation research. May be repeated up to 88 credits.

**CSCI 7000. Doctoral Dissertation****1-15 Credits**

Dissertation. May be repeated up to 88 credits.

**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 127. Internet of Things Integration****3 Credits (3)**

Continuation of concepts taught in CTEC 127. Course expands on the importance of the Internet of Things (IoT) in society, control systems, communications, sensors, actuators, cloud computing, security, and databases. May be repeated up to 6 credits.

**Prerequisite:** CTEC 127.

**Learning Outcomes**

1. Demonstrate a detailed understanding of IoT.
2. Understand the societal impact of IoT.
3. Recognize challenges the IoT presents to security.
4. Develop an understanding of embedded programming language syntax and attributes.
5. Demonstrate assembly of electronic circuitry using a single-board computer.

**CSEC 175. Introduction to Data Visualization****3 Credits**

This course will demonstrate how to transform data into meaningful visual representations. Students will explore the role of visualization in organizational decision-making and learn to differentiate data types to create graphs, charts, and tables. The course also involves critiquing real-world data visualizations across business, science, and public policy incorporating ethical considerations, such as accuracy and bias.

**Learning Outcomes**

1. Describe the role of visualization in data-driven decision-making within an organization.
2. Differentiate data and data categories (numerical, categorical, temporal, etc.) by creating and interpreting graphs, charts, and tables including legends, symbols, and colors.
3. Import and export between common data sources such as spreadsheets, databases, or Application Programming Interfaces (APIs).
4. Implement data normalization by exploring techniques for cleaning and preparing data.
5. Perform basic and intermediate functions to calculate, analyze data, and forecast trends.
6. Create interactive and dynamic visualizations such as dashboards, timelines, and project management charts.
7. Discuss the ethical implications of data visualization (accuracy, bias, privacy, etc.).
8. Critique real-world examples of data visualizations in different domains such as business, science, or public policy.

**CSEC 180. Introduction to Data Analytics****3 Credits (3)**

A broad introduction to the field of data analytics that prepares students to explore key areas of the analytical process of how data is created, stored, cleaned, visualized, and analyzed. May be repeated up to 6 credits.

**Learning Outcomes**

1. Demonstrate basic principles of data analysis using analytical tools.
2. Apply data analytics to contemporary workplace performance.
3. Describe how data is stored and accessed through relational database(s).
4. Use programming language(s) to analyze data.
5. Integrate application software to analyze and visualize simple dataset.

**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:** E T 153 and E T 156.

**Prerequisite/Corequisite:** E T 283.

**Learning Outcomes**

1. Identify and describe common threats and vulnerabilities.
2. Describe/demonstrate how to secure a network.
3. Identify and demonstrate common tools used in ethical hacking/ penetration testing.
4. 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:** E T 153, E T 156, and E T 283.

**Learning Outcomes**

1. Identify and describe common threats and vulnerabilities.
2. Identify and demonstrate common security devices/programs.
3. Describe/demonstrate how to secure a network.

**CSEC 295. Cybersecurity Capstone****3-4 Credits (3-4)**

Experiential hands-on learning applying skills and knowledge gained in technology and cybersecurity-related courses supporting contemporary workforce performance. May be repeated up to 8 credits.

**Learning Outcomes**

1. Evaluate technical components, systems and integrated systems.
2. Demonstrate individualized project-based skills.
3. Develop integrated system solutions.
4. Integrate cyber technology to support workplace performance.

## CTEC - CYBER TECHNOLOGY

**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 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.

**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.

**Prerequisite(s):** CTEC 140 or OECS 220.

**CTEC 150. 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.

**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.

**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 Window 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 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. Restricted to Community Colleges campuses only. May be repeated up to 6 credits.

**Prerequisite/Corequisite:** CTEC 240.

**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



- Describe the operations and benefits of the Spanning Tree Protocol (STP)
- Configure and troubleshoot STP operations
- Describe the operations and benefits of link aggregation and Cisco VLAN Trunk Protocol (VTP)
- Configure and troubleshoot basic operations of routers in a complex routed network for IPv4 and IPv6
- Configure and troubleshoot advanced operations of routers and implement RIP, OSPF, and EIGRP routing protocols for IPv4 and IPv6
- 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 295. Cyber Technology Capstone****3-4 Credits (3-4)**

Experiential hands-on learning applying skills and knowledge gained in computer and technology-related courses supporting contemporary workforce performance. May be repeated up to 8 credits.

**Learning Outcomes**

- Evaluate technical components, systems and integrated systems.
- Demonstrate individualized project-based skills.
- Develop integrated system solutions.
- Integrate cyber technology to support workplace performance.

**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.

## CTFM-CLTHNG/TXTLS/FSHN MRCHDSG (CTFM)

**CTFM 1110. Fundamentals of Fashion****3 Credits (3)**

Survey of the fashion business from fiber to end product.

**Learning Outcomes**

- Describe the roles and functions of industry jobs and sectors involved in the designing, production, marketing, and distribution of fashion brands within the global context.
- Describe the business strategies of industry sectors involved in the designing, production, marketing, and distribution of fashion brands within the global context.

- Describe the interrelationships among line planning, line development, and line presentation at manufacturing and retail levels.
- Provide examples of the fashion industry's environmental and social impact.
- Learn about all career tracks involved in the fashion industry and the global fashion supply chain.
- Synthesize industry-relevant information on current issues in the fashion industry.

**CTFM 2120. Fashion Illustration****3 Credits (1+4P)**

This course explores aspects of fashion illustration, from drawing basic fashion figures to producing finished professional illustrations in color. This course provides the opportunity for students to integrate their fashion design development with computer-aided systems. The emphasis is on fashion innovation and concept design exploration enhanced by computer applications. May be repeated up to 3 credits.. Prerequisites: ARTS 1145G and CTFM 1110

**Learning Outcomes**

- To learn Adobe Illustrator and Adobe Photoshop as drawing and design tools for electronic design and rendering.
- To understand and utilize the computer as a tool for fashion design.
- To understand methods of design input, including scanning, digitizing and resizing.
- To develop customer profiles
- To Understand Concept Style

**CTFM 2130. Concepts in Apparel Construction****3 Credits (1+4P)**

Students are introduced to professional standard sewing techniques and apparel construction. The techniques learned are applied to produce finished garments. Restricted to: FCSE,CTFM majors. Restricted to Las Cruces campus only.

**Learning Outcomes**

- Define sewing construction terminology, equipment and sewing machine parts.
- Learn to select suitable patterns and fabrics for garments.
- Learn to alter commercial patterns for different body types.
- Identify fabric types, finishes, and labeling.
- Perform standard operating procedures on sewing machines.
- Perform clothing construction techniques for various garments.
- Apply knowledge of industry sewing methods to recognition of garment workmanship.

**CTFM 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**

- Gain hands-on knowledge of the fashion industry.
- Demonstrate the ability to analyze the practices of management, as observed in the industry.
- Demonstrate an attitude that is appropriate for a prospective manager in the industry.
- Demonstrate the understanding of, and the ability to use research and problem solving methods to develop, analyze, and present a critical incident analysis.

# DANC-DANCE (DANC)

## DANC 1110G. Dance Appreciation

### 3 Credits (3)

This course introduces the student to the diverse elements that make up the world of dance, including a broad historic overview, roles of the dancer, choreographer and audience, and the evolution of the major genres.

Students will learn the fundamentals of dance technique, dance history, and a variety of dance aesthetics. Restricted to: Main campus only. May be repeated up to 3 credits.

#### Learning Outcomes

1. Explain a range of ideas about the place of dance in our society.
2. Identify and apply critical analysis while looking at significant dance works in a range of styles.
3. Identify dance as an aesthetic and social practice and compare/contrast dances across a range of historical periods and locations.
4. Recognize dance as an embodied historical and cultural artifact, as well as a mode of nonverbal expression, within the human experience across historical periods and cultures.
5. Use dance to consider contemporary issues and modes of thought.

## DANC 1130. Ballet I

### 1 Credit (1)

This course is the beginning level of ballet technique. Students learn the basic fundamentals and performance skills of ballet techniques, which may include flexibility, strength, body alignment, coordination, range of motion, vocabulary, and musicality. May be repeated up to 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 1131. Introduction to Ballroom Dance

### 1 Credit (1)

An introduction to ballroom dance at the beginning level. Students will learn the fundamentals of technique including carriage, common movement vocabulary, and partnering, and will be introduced to steps and dances from the Bronze Syllabus of American Smooth and International Standard dances. Offered every Fall. May be repeated up to 2 credits.

#### Learning Outcomes

1. Execute the basic figures of various Ballroom dances in American and International styles
2. Demonstrate an understanding of the elements of technique of these forms, including posture, use of the hips and legs, and lead and follow
3. Develop the skills of style and performance quality within the dance
4. Demonstrate improved overall physical capability, musicality, and movement memory
5. Appreciate Ballroom dancing as an artform and a discipline

## DANC 1135. Introduction to Argentine Tango

### 1 Credit (1)

An introduction to Argentine Tango at the beginning level. Students will learn the fundamentals of technique including carriage, common movement vocabulary, and partnering, as well as the history and culture of the form. Offered Spring of even years. May be repeated up to 2 credits.

#### Learning Outcomes

1. Execute the basic figures of Tango and Argentine Tango
2. Demonstrate an understanding of the elements of technique of these forms, including posture, use of the hips and legs, and lead and follow
3. Develop the skills of style and performance quality within the dance
4. Articulate the cultural and historical underpinnings of these forms as World dances
5. Demonstrate improved overall physical capability, musicality, and movement memory
6. Appreciate Tango as an artform and a discipline

## 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 up to 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 up to 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 1185. Introduction to Country Western Dance

### 1 Credit (1)

An introduction to Country Western Dance at the beginning level. Students will learn the fundamentals of technique and several dances, including Country Western Two-Step, Nightclub Two-Step, Polka, and Line Dance. Offered Fall of odd years. May be repeated up to 2 credits.

#### Learning Outcomes

1. Execute the basic figures of various Country Western social dances.
2. Demonstrate an understanding of the elements of technique of these forms, including posture, use of the hips and legs, and lead and follow.
3. Develop the skills of style and performance quality within the dance.

4. Demonstrate improved overall physical capability, musicality, and movement memory.
5. Appreciate Country Western dancing as an artform and a discipline.

**DANC 1220. Introduction to Latin Social Dance****1 Credit (1)**

An introduction to Latin social dance at the beginning level. Students will learn the fundamentals of technique including carriage, common movement vocabulary, and partnering, and will be introduced to steps and dances from the Bronze Syllabus of American Rhythm and International Latin dances. Offered every Spring. May be repeated up to 2 credits.

**Learning Outcomes**

1. Execute the basic figures of various Latin dances in American and International styles.
2. Demonstrate an understanding of the elements of technique of these forms, including posture, use of the hips and legs, and lead and follow.
3. Develop the skills of style and performance quality within the dance.
4. Demonstrate improved overall physical capability, musicality, and movement memory.
5. Appreciate Latin dancing as an artform and a discipline.

**DANC 1235. Introduction to West Coast Swing Dance****1 Credit (1)**

An introduction to West Coast Swing dancing at the beginning level. Students will learn the fundamentals of technique of several Swing forms and the Hustle, including basic steps, partnering, and musical forms. Offered Fall of even years. May be repeated up to 2 credits.

**Learning Outcomes**

1. Execute the basic figures of both West Coast Swing and the Hustle.
2. Demonstrate an understanding of the elements of technique of these forms, including posture, use of the hips and legs, and lead and follow.
3. Develop the skills of style and performance quality within the dance.
4. Demonstrate improved overall physical capability, musicality, and movement memory.
5. Appreciate Swing dancing as an artform and a discipline.

**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. May be repeated up to 8 credits.

**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 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. May be repeated up to 8 credits.

**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? How aware are you of those around you, and those you are dancing with?
8. Release of weight to create controlled momentum
9. Locating center and moving from there

**DANC 2157. Hip-Hop Dance****2 Credits (2)**

An introduction to hip hop dance and its relationship to other aspects of hip-hop culture, music, and media, with an emphasis on creativity, individuality, and expression. Coursework may include street styles, breaking, and various regional forms. No previous dance experience is expected. May be repeated up to 6 credits.

**Learning Outcomes**

1. Recognize and articulate the fundamentals of various styles of hip hop dance technique and vocabulary.
2. Contextualize the history and cultural aspects of hip hop dance.
3. Examine the relationship between dance and other aspects of hip hop culture such as music and media representation.
4. Demonstrate improvement in overall physical capability, musicality, and movement memory.
5. Appreciate hip hop dance as an artform and a discipline.

**DANC 2270. Dance Improvisation****2 Credits (2)**

An introduction to the practice of dance improvisation focusing on play and discovery as methods for generating movement and exploring the full potential of the communicative, authentic body in motion. Course content includes concepts in Body, Effort, Shape, Space, Kinesthetic Response, Scoring, and Contact. Offered Spring of even years.

**Prerequisite:** DANC 1150.

**Learning Outcomes**

1. Understand the core concepts of exploration and authenticity and the importance of these ideas to a modern dancer and choreographer.
2. Demonstrate immediacy of presence, both physically and mentally, in the way that they responding to both choices and instincts in the moment.
3. Connect the concepts learned in Modern dance technique to the study of dance improvisation and the concepts of this class to outside work as dancers, students, and citizens.
4. Access the constantly expanding movement vocabulary which will inform their work moving forward in dance technique and composition.
5. Improvise confidently both individually and as part of a group.

**DANC 2310. Bronze American Rhythm****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 2311. Bronze American Smooth**

##### **2 Credits (2)**

Bronze level American Smooth patterns, technique, and partnering with an emphasis on the elements of dance. May be repeated up to 4 credits.

##### **Learning Outcomes**

1. Learn to dance the Bronze DIVIDA Manual in International Latin
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 2320. Bronze International Latin**

##### **2 Credits (2)**

This is the 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 6 credits.

##### **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 Smooth accuracy in movement, ability to dance on time discover phrasing
5. Further develop lead follow skills that will enable you to dance 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, Foxtrot & Quickstep. Students will focus on understanding technical elements of dance, memorizing and performing routines. May be repeated up to 6 credits.

##### **Learning Outcomes**

1. Learn to dance the Bronze DIVIDA Manual in International Standard
2. Develop Bronze level dance technique
3. Gain deeper understanding of the Elements of Dance
4. Develop Smooth 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 2460. Dance for Musical Theatre**

##### **2 Credits (2)**

This course will supplement the dance technique curriculum specifically in support of the study of Musical Theatre. Students will practice various social, world, and theatrical dance forms, learn selections from iconic choreography, experience mock dance auditions, and explore the skill of dance composition for musical theatre repertory. Offered every Spring. May be repeated up to 4 credits.

**Prerequisite:** DANC 1130 or DANC 1160.

##### **Learning Outcomes**

1. Participate successfully in dance techniques and styles outside of the basic tap, jazz, ballet, and modern dance curriculum.
2. Recognize and contextualize musical theatre history and repertory through exposure to significant historical choreography and choreographers.
3. Understand and excel at the skill of taking part in a musical theatre dance audition.
4. Demonstrate improvement in overall physical capability, musicality, and movement memory.
5. Appreciate the practice of musical theatre dance as an artform and a discipline.

## **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 (4)**

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. May be repeated up to 4 credits.

##### **Learning Outcomes**

1. Demonstrate the ability to express the history of dentistry, important contributions of historical figures to dentistry, and the importance of professional organizations (also DAS 125).
2. Discuss how the study of microbiology relates to dentistry (also DAS 113).
3. Utilize and demonstrate the ability to use basic anatomic terms to describe and identify structures of general human anatomy and physiology (also DAS 113, 121, 130).
4. Identify and describe the structures associated with head and neck anatomy (also DAS 121, 130).
5. Identify, locate, and describe bones muscles, and major vessels of head and neck.
6. Summarize function and location of bones, muscles, and major vessels of the head and neck.
7. Differentiate between primary and permanent dentition by nomenclature, development, eruption patterns, and crown/root morphology (also DAS 129).
8. Explain location, function, and dysfunctions of major salivary glands.
9. Summarize normal and abnormal actions of the temporomandibular joint. 1
10. Identify major areas and function of lymph nodes in the head and neck region. 1
11. Differentiate extra oral and intra oral landmarks (also DAS 115). 1
12. Describe normal prenatal, embryonic and histological development with emphasis on face, neck, oro-facial structures and dentition. 1
13. Demonstrate the ability to be able to distinguish between normal and pathological abnormalities of the oral structures. 1

14. Describe the use/effect of pharmacological agents in dentistry (also DAS 113, 121, 129, 130).

#### **DAS 113. Dental Assisting I**

##### **5 Credits (3+2P)**

Introduction to chair side assisting procedures, instrumentation, infection control, equipment safety and maintenance, dental office emergencies, and management of pain and anxieties. Restricted to: OEDA majors.

Restricted to Alamogordo and Dona Ana campuses. May be repeated up to 5 credits.

**Prerequisite:** ENGL 1110G, BIOL 1130, and (COMM 1130G or COMM 1115G).

##### **Learning Outcomes**

1. Demonstrate their knowledge of four handed dental assisting through clinical application.
2. Demonstrate proper infection and hazard controls.
3. Identify principles and techniques of disinfection and sterilization.
4. List regulatory and advisory agencies related to dentistry, infection control, and materials.
5. Define biofilm and its importance in dentistry.
6. Demonstrate proper ergonomics for the dental assistant and proper adjustment of the assistant stool.
7. Apply proper procedures when seating and dismissing a patient.
8. State appropriate post op instructions for patients after a given procedure.
9. Recognize the importance of preventive education and oral hygiene instructions. 1
10. Recognize the need for continued care and maintenance. 1
11. State customized oral hygiene instructions for patients. 1
12. Demonstrate proper cleaning of removable appliances. 1
13. Demonstrate proper instrument transfer techniques in 4 handed and 6 handed dentistry. 1
14. Diagram the zones of operation and patient positioning.

#### **DAS 115. Dental Radiology**

##### **4 Credits (3+1P)**

Radiation physics, hygiene, and safety theories. Emphasis on the fundamentals of oral radiographic techniques and interpretation of radiographs. Includes exposure of intra-oral radiographs, quality assurance, radiographic interpretation, patient selection criteria, and other ancillary radiographic techniques. Restricted to: OEDA majors. Restricted to Alamogordo and Dona Ana campuses.

**Prerequisite:** ENGL 1110G, BIOL 1130, and (COMM 1130G or COMM 1115G).

##### **Learning Outcomes**

1. Explain the basic principles and concepts of radiation in general and x-radiation in particular.
2. Identify the component parts and workings of the dental x-ray machine and the production of x-rays.
3. Discuss the effects of ionizing radiation on living tissues including protective and recommended health and safety factors.
4. Use appropriate procedures for selecting films and exposure factors and for processing and evaluating radiographs in the production of quality radiographs.
5. Recognize the characteristics of an acceptable x-ray image, the factors that influence the image, and the importance of quality assurance in imaging.
6. Analyze the legal issues related to dental radiography and the role of the dental radiographer in patient education and patient relations.

7. Demonstrate effective patient management techniques for intraoral and extraoral radiographs, panoramic and alternate imaging modalities utilized in dental radiography.
8. Demonstrate competency in radiographic interpretation including normal radiographic landmarks and radiographic pathology.
9. Demonstrate the radiographic techniques of interproximal, paralleling, bisection, panoramic and occlusal radiography which meet SJC standards for acceptable radiographs. 1
10. 1
11. Demonstrate acceptable radiographic processing, film duplication, evaluation of radiographs, and radiographic equipment maintenance utilizing radiation safety and infection control protocols.

#### **DAS 117. Dental Materials**

##### **3 Credits (2+1P)**

Composition, chemical and physical properties, manipulation and uses of dental materials. Laboratory experiences include the application and manipulation of various materials used in dentistry. Restricted to: OEDA majors. Restricted to Alamogordo and Dona Ana campuses. May be repeated up to 3 credits.

**Prerequisite:** ENGL 1110G, BIOL 1130, and (COMM 1130G or COMM 1115G).

##### **Learning Outcomes**

1. Recognize general rules for handling dental materials.
2. Recognize and identify materials science and dentistry.
3. Implement proper infection control and safety in the dental office.
4. Recognize the properties and uses of impression materials.
5. Demonstrate proper disinfection of impressions, dentures and other appliances and materials.
6. Understand the process and demonstrate the technique for taking of alginate impressions and elastomeric impressions.
7. Recognize the properties and demonstrate the use of gypsum materials.
8. Demonstrate the fabrication and trimming of study models.
9. Recognize the properties and demonstrate the use of Adhesive materials, Direct polymeric restorative materials, Amalgam and other direct metallic restorative materials, Polishing materials and abrasion, and Dental cements. 1
10. Demonstrate the steps for fabricating and delivery protocol of an oral appliance. 1
11. Recognize and apply the concepts of vital tooth whitening.

#### **DAS 123. Dental Assisting Practicum**

##### **6 Credits (2+4P)**

This course is the clinical component of the program that combines general practice and experiences in the work place. Seminar topics focus on the practicum experiences and critique of performance. May be repeated up to 6 credits.

##### **Learning Outcomes**

1. Assist the dentist chairside in general and specialty practices with procedures such as oral evacuation, instrument transfer, dental material preparation, various infection control procedures, and charting.
2. Perform various chairside, lab, and front office duties.
3. Work independently, but with direct supervision from licensed/certified dental assistant, hygienist or dentist in placement of rubber dam, coronal polishing, pit and fissure sealants, and topical fluoride. Receive dental/medical information and take vital signs.

4. Expose, process, and duplicate radiographs in accordance with New Mexico Dental Regulations.
5. Educate patients about dental disease, plaque control, oral hygiene and the role of proper nutrition in managing dental disease. Organize and participate a community project included in this objective.
6. Identify and manage medical emergencies in the dental environment.
7. Create study models, temporary crowns, custom trays, and mix a wide variety of dental materials.
8. Maintain aseptic and safe environment through proper disinfection and sterilization techniques with adherence to safety and OSHA guidelines.
9. Recognize and Adhere to HIPAA. 1
10. Manage the business/financial aspects of a dental practice (i.e. preparing insurance forms, appointment scheduling, answering telephone, bookkeeping, and inventory control). 1
11. Demonstrate ethical and professional behavior in the clinical setting. 1
12. Demonstrate competency in skills needed to function as a dental assistant. To include confidence in patient management, positive attitude about self, members of the dental team, and the dental profession. 1
13. Display professional dependability and ability to promote teamwork. 1
14. Demonstrate ethical decision making processes. 1
15. Define oral pathology and identify the dental assistant's role in this specialty.

#### **DAS 125. Professional Concepts**

##### **2 Credits (2)**

Emphasis on the development of professionalism for the dental office. Includes oral communication, psychology, patient relations, problem-solving skills, stress management, and employability in addition to dental jurisprudence and ethics. May be repeated up to 2 credits.

##### **Learning Outcomes**

1. Recognize and discuss ethical and legal aspects of the delivery of dentistry as the relate to the practice of dentistry and to dental assisting.
2. Differentiate between verbal and non-verbal communication and discuss the role of communication in dentistry.
3. Utilize problem solving/critical thinking skill, psychology and stress management skills to improve patient and office relationships.
4. Develop strategies to find and secure employment, gain job satisfaction, stay physically fit, and meet career as well as life goals.
5. Identify the value and benefits of membership in professional associations as related to dentistry.

#### **DAS 127. Dental Office Management**

##### **2 Credits (2)**

This capstone course is an introduction to business office procedures, including telephone management, appointment control, accounts payable, completion of third party reimbursement forms, inventory control data entry for charges and payments, management recall, basic dental computer software and operating basic business equipment. May be repeated up to 2 credits.

##### **Learning Outcomes**

1. Identify the duties of the dental office manager and management staff.
2. Compare and contrast manual and computerized systems to process dental information, including billing, payment, appointments,

cancellations and clinical notes dealing with written and oral communication.

3. Discuss and practice learned dental office management and communication skills and maintenance and retention of business records.
4. Explain fundamental principles of financial management.
5. Operate basic office equipment.
6. Demonstrate a working knowledge of hospitable customer service management of patient information
7. Business ethics and jurisprudence
8. Identify inventory systems and supply ordering
9. To enable the student to possess skills and knowledge in order to secure employment as a dental office manager. 1
10. Utilize computer and dental software.

#### **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. May be repeated up to 2 credits.

##### **Learning Outcomes**

1. Assessing, planning, implementing, and evaluating community-based oral health programs.
2. Promoting the values of good oral and general health and wellness to the public and organizations within and outside the professions.
3. Explain how oral health research and the process of scientific inquiry knowledge development and daily practice.
4. Explain how an evidence-based decision-making approach enhances critical thinking and professional decision-making regarding patient care.
5. Recognizing and using written and electronic sources of information.
6. Apply pathologic concepts and definitions in the pathologic process.
7. Explain the process of inflammation, repair and wound healing.
8. Describe indications and conditions for the use of a shepherd's hook explorer, such as color, condition of restorations and open margins on teeth.
9. Check margins of teeth with explorer. 1
10. Explain purpose of caries detection to patient and dentist. 1
11. Providing dental assisting services in a variety of settings, including offices, hospitals, and clinics. 1
12. Explain the procedures necessary for a comprehensive periodontal examination. 1
13. Demonstrate understanding of how to calm and reassure apprehensive patients. 1
14. Describe how to manage patients, including patients with special needs, during routine clinical procedures. 1
15. Describe why children and adults with special needs are treated in a pediatric office. 1
16. Apply principles of nutritional and/or tobacco cessation counseling to the management of oral and systemic health. 1
17. Explain the intention of preventive dentistry, and what is included as a comprehensive program.

#### **DAS 130. Dental Assisting II**

##### **4 Credits (2+2P)**

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. May be repeated up to 4 credits.

#### Learning Outcomes

1. Recognize and discuss ethical and legal aspects of the delivery of dentistry as they relate to the practice of dentistry and to dental assisting in New Mexico.
2. Differentiate between verbal and non-verbal communication.
3. Perform the duties of the dental auxiliary in patient education/relations.
4. Demonstrate critical thinking skills in relation to patient treatment.
5. Demonstrate through self and clinical site evaluations progression in chair side assisting skills along with the ability to perform these skills with minimal supervision.
6. Identify and pronounce head and neck anatomy terminology correctly during clinical procedures.
7. Set up the correct armamentarium (including materials) for various dental procedures without assistance (clinical practicum).

#### 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.

#### Learning Outcomes

1. Prevention of disease transmission: a. Asepsis protocol of recommended clinical guidelines for infection and hazard management prior, during and after the provision of dental hygiene

services. b. Management of individuals with bloodborne infectious diseases based on standard precautions. c. Post-exposure guidelines as defined by the Centers for Disease Control and Prevention (CDC). d. Selection and use of effective methods of instrument and dental unit sterilization/disinfection. e. Valuing the dental hygienist's role in preventing disease transmission.

2. Patient/operator positioning: a. Positioning self and the patient to maximize accessibility and visibility to the field of operation. b. Selecting operator positioning strategies to prevent or lessen the risk of injury to self and/or the patient during implementation of dental hygiene care. c. Valuing the need for effective ergonomics and safe patient/operator positioning. d. Valuing the need for effective use of vision magnification for intraoral procedures.
3. Time and motion management: a. Selecting time and motion patterns for safe and efficient implementation of dental hygiene care. b. Valuing the need for efficient time and motion management.
4. Prevention and/or management of emergency situations: a. Developing a management plan for medical emergencies. b. Applying current methods for prevention of emergencies. c. Assessing the patient's need for emergency care. d. Implementing basic life support methods consistent with American Heart Association guidelines. e. Valuing maintaining skills in preventing and managing emergencies. f. Valuing the dental hygienist's role in preventing and managing emergencies.
5. Comprehensive patient assessment: a. Obtaining and recording a comprehensive medical, social, dental and nutrition health history. b. Recognizing conditions that necessitate special consideration prior to or during treatment. c. Obtaining, interpreting and monitoring vital signs according to American Heart Association guidelines. d. Performing and documenting an extraoral and intraoral examination that includes soft and hard tissue of the head, neck and oral cavity. e. Performing and documenting an examination of the dentition that includes dental charting, occlusion and assessment of hard and soft deposits. f. Performing and documenting an examination of the periodontium that includes gingival assessment, recession, bleeding upon probing, sulci and/or pocket measurements, clinical attachment level, furcation involvement, tooth mobility, fremitus, mucogingival conditions and radiographic findings. g. Evaluating patient risk factors for oral diseases. h. Discriminating pertinent and significant assessment findings from those that are not significant or within a range of normal. i. Assessing the need for exposing intraoral and/or extraoral radiographs/images to support the clinical examination. j. Assessing the need for exposing, developing and implementing intraoral photography. k. Using supplemental screening tools to support assessment strategies such as Periodontal Screening and Recording (PSR), alginate impressions and study models, indices and vitality testing. l. Assessing for the patient's oral health needs, beliefs, knowledge, skills and selfcare practices. m. Valuing the need for consistently performing patient assessment at professionally accepted standards of care.
6. Diagnosis and planning of dental hygiene care: a. Analyzing the patient's needs for preventive, educational, and therapeutic dental hygiene services. b. Synthesizing patient assessment findings and risk factors in formulating a patient centered dental hygiene treatment plan and case presentation. c. Formulating a dental hygiene diagnosis from comprehensive assessment findings or evidence. d. Proposing measurable patient outcome goals for oral health. e. Identifying factors contributing to the patient's preventive, educational and/or therapeutic oral health needs. f. Selecting dental hygiene intervention strategies that will guide the patient to achieving patient-centered oral health outcomes that include oral and systemic

- health education strategies. g. Appointment planning and sequencing of dental hygiene care to meet the patient's oral health goals. h. Obtaining informed consent by discussing with the patient his/her oral health findings, goals and treatment strategies. i. Value the importance of patient-centered care and concepts of health promotion.
7. Principles and methods of dental hygiene intervention: a. Implementing dental hygiene strategies and services that address the factors contributing to the patient's preventive, educational and/or therapeutic oral health needs. b. Implementing cognitive, psychomotor and affective strategies to manage barriers to oral self-care. c. Applying the principles of instrumentation that include grasp, fulcrum, adaptation, angulation, activation/stroke and lateral pressure to assure complete debridement. d. Applying the principles of instrument design that include shank, handle, working end/blade to support instrument selection for maximum effectiveness, safety and efficiency in debridement procedures. e. Applying preventive and therapeutic topical agents for disease management, including fluoride. f. Applying selective coronal polishing procedures that include polishing, and selection of polishing agent. g. Valuing the need for consistently performing preventive, educational and/or therapeutic dental hygiene services at professionally accepted standards of care.
  8. Principles and methods of evaluating outcomes of dental hygiene care: a. Evaluating and documenting the results of preventive and/or therapeutic dental hygiene interventions in meeting the proposed treatment plan goals. b. Recommending a recare schedule for continued supportive care. c. Recommending referral for additional assessment and/or treatment. d. Valuing the importance of evaluation in monitoring patient oral health. e. Assessing overall patient satisfaction with care provided.
  9. Health informatics and emerging technologies: a. Applying the principles for maintaining comprehensive and accurate records of all information and services offered to and provided to the patient. b. Documenting additional dental care needed by the patient. c. Valuing the need for maintenance of thorough and accurate records. 1
  10. Professional ethics: a. Applying the principles of professional and ethical behavior when providing patient care. b. Self-assessing ability to perform dental hygiene services at a high standard of care. c. Valuing patient confidentiality and patient rights according to the guidelines of the Health Insurance Portability and Accountability Act of 1996 (HIPAA). d. Valuing the patient's right to dental hygiene care consistently provided at acceptable standards.
- unit sterilization/disinfection. e. Valuing the dental hygienist's role in preventing disease transmission.
2. Patient/operator positioning: a. Positioning self and the patient to maximize accessibility and visibility to the field of operation. b. Selecting operator positioning strategies to prevent or lessen the risk of injury to self and/or the patient during implementation of dental hygiene care. c. Valuing the need for effective ergonomics and safe patient/operator positioning. d. Valuing the need for effective use of vision magnification for intraoral procedures.
  3. Time and motion management: a. Selecting time and motion patterns for safe and efficient implementation of dental hygiene care. b. Valuing the need for efficient time and motion management.
  4. Prevention and/or management of emergency situations: a. Developing a management plan for medical emergencies. b. Applying current methods for prevention of emergencies. c. Assessing the patient's need for emergency care. d. Implementing basic life support methods consistent with American Heart Association guidelines. e. Valuing maintaining skills in preventing and managing emergencies. f. Valuing the dental hygienist's role in preventing and managing emergencies.
  5. Comprehensive patient assessment: a. Obtaining and recording a comprehensive medical, social, dental and nutrition health history. b. Recognizing conditions that necessitate special consideration prior to or during treatment. c. Obtaining, interpreting and monitoring vital signs according to American Heart Association guidelines. d. Performing and documenting an extraoral and intraoral examination that includes soft and hard tissue of the head, neck and oral cavity. e. Performing and documenting an examination of the dentition that includes dental charting, occlusion and assessment of hard and soft deposits. f. Performing and documenting an examination of the periodontium that includes gingival assessment, recession, bleeding upon probing, sulci and/or pocket measurements, clinical attachment level, furcation involvement, tooth mobility, fremitus, mucogingival conditions and radiographic findings. g. Evaluating patient risk factors for oral diseases. h. Discriminating pertinent and significant assessment findings from those that are not significant or within a range of normal. i. Assessing the need for exposing intraoral and/or extraoral radiographs/images to support the clinical examination. j. Assessing the need for exposing, developing and implementing intraoral photography. k. Using supplemental screening tools to support assessment strategies such as Periodontal Screening and Recording (PSR), alginate impressions and study models, indices and vitality testing. l. Assessing for the patient's oral health needs, beliefs, knowledge, skills and selfcare practices. m. Valuing the need for consistently performing patient assessment at professionally accepted standards of care.
  6. Diagnosis and planning of dental hygiene care: a. Analyzing the patient's needs for preventive, educational, and therapeutic dental hygiene services. b. Synthesizing patient assessment findings and risk factors in formulating a patient centered dental hygiene treatment plan and case presentation. c. Formulating a dental hygiene diagnosis from comprehensive assessment findings or evidence. d. Proposing measurable patient outcome goals for oral health. e. Identifying factors contributing to the patient's preventive, educational and/or therapeutic oral health needs. f. Selecting dental hygiene intervention strategies that will guide the patient to achieving patient-centered oral health outcomes that include oral and systemic health education strategies. g. Appointment planning and sequencing of dental hygiene care to meet the patient's oral health goals. h. Obtaining informed consent by discussing with the patient his/her oral health findings, goals and treatment strategies. i. Value

## **DHYG 112. Preclinical Dental Hygiene Lab**

### **3 Credits (3P)**

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.

### **Learning Outcomes**

1. Prevention of disease transmission: a. Asepsis protocol of recommended clinical guidelines for infection and hazard management prior, during and after the provision of dental hygiene services. b. Management of individuals with bloodborne infectious diseases based on standard precautions. c. Post-exposure guidelines as defined by the Centers for Disease Control and Prevention (CDC). d. Selection and use of effective methods of instrument and dental



the importance of patient-centered care and concepts of health promotion.

7. Principles and methods of dental hygiene intervention: a. Implementing dental hygiene strategies and services that address the factors contributing to the patient's preventive, educational and/or therapeutic oral health needs. b. Implementing cognitive, psychomotor and affective strategies to manage barriers to oral self-care. c. Applying the principles of instrumentation that include grasp, fulcrum, adaptation, angulation, activation/stroke and lateral pressure to assure complete debridement. d. Applying the principles of instrument design that include shank, handle, working end/blade to support instrument selection for maximum effectiveness, safety and efficiency in debridement procedures. e. Applying preventive and therapeutic topical agents for disease management, including fluoride. f. Applying selective coronal polishing procedures that include polishing, and selection of polishing agent. g. Valuing the need for consistently performing preventive, educational and/or therapeutic dental hygiene services at professionally accepted standards of care.
8. Principles and methods of evaluating outcomes of dental hygiene care: a. Evaluating and documenting the results of preventive and/or therapeutic dental hygiene interventions in meeting the proposed treatment plan goals. b. Recommending a recare schedule for continued supportive care. c. Recommending referral for additional assessment and/or treatment. d. Valuing the importance of evaluation in monitoring patient oral health. e. Assessing overall patient satisfaction with care provided.
9. Health informatics and emerging technologies: a. Applying the principles for maintaining comprehensive and accurate records of all information and services offered to and provided to the patient. b. Documenting additional dental care needed by the patient. c. Valuing the need for maintenance of thorough and accurate records. 1
10. Professional ethics: a. Applying the principles of professional and ethical behavior when providing patient care. b. Self-assessing ability to perform dental hygiene services at a high standard of care. c. Valuing patient confidentiality and patient rights according to the guidelines of the Health Insurance Portability and Accountability Act of 1996 (HIPAA). d. Valuing the patient's right to dental hygiene care consistently provided at acceptable standards.

#### **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.

##### **Learning Outcomes**

1. Describe the histology of all tissues and structures of the head and neck.
2. Describe the dental lamina, name when it begins to form and explain the embryonic germ layer from which it originates.
3. Describe the dental papilla and name the embryonic layer from which it develops.
4. Discuss the bud, cap and bell stages of tooth development.
5. Describe a mesenchymal cell and list at least two cells it can become.
6. Name what the inner enamel epithelial cells differentiate into in the bell stage.
7. Describe what the odontoblasts do when they come in contact with the preameloblasts.

8. Describe the stellate reticulum.
9. Describe matrix formation and crystallization of dentin (apposition and calcification). 1
10. Name which forms first—enamel or dentin. 1
11. Name where on the tooth that apposition and calcification begin. 1
12. Identify the location of succedaneous and nonsuccedaneous dental lamina. 1
13. Describe the percent organic and inorganic material in enamel and dentin. 1
14. Describe the alignment of enamel rod and dentinal tubule with respect to the DEJ or DCJ. 1
15. Explain the development of enamel. 1
16. Name the two stages of calcification of the enamel rod and describe the process of each. 1
17. Discuss hypocalcification and how it differs from demineralization. 1
18. Describe the composition of dentin. 1
19. Compare and contrast primary, secondary, reparative and sclerotic dentin. 2
20. Discuss the circumstances under which reparative dentin is made. 2
21. Describe what happens to odontoblasts in the area of a cavity preparation. 2
22. Describe where one would find odontoblasts in the pulp cavity. 2
23. Describe the sensations generated by the pulp. 2
24. Compare and contrast the young versus the old pulp.

#### **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.

##### **Learning Outcomes**

1. Discuss the clinical applications of the study of head and neck anatomy by dental professionals.
2. Define and pronounce key words and anatomical terms.
3. Apply the correct anatomical nomenclature during the study of the head and neck anatomy.
4. Locate and identify the anatomical structures of the head and neck.
5. Discuss normal anatomic variation and how it applies to different structures of the head and neck.
6. Identify deviations from normal, and how it applies to different structures of the head and neck.
7. Integrate the knowledge of head and neck anatomy into clinical practice of patient examination, dental radiology, and the future use of local anesthetics.

#### **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.

##### **Learning Outcomes**

1. Explain the relevance of dental anatomy to total head and neck anatomy and apply to dental hygiene practice including intra-oral and extra-oral exam findings and local anesthesia procedures.
2. Name and describe anatomical parts of a tooth and supporting periodontal tissues.
3. Describe the relationship between the form and function of teeth.

4. Examine and draw individual permanent teeth and describe their morphology characteristics and eruption patterns.
5. Examine and draw individual primary teeth and describe their tooth morphology characteristics and eruption/ exfoliation patterns.
6. Compare and contrast characteristics of deciduous and permanent teeth.
7. Recognize tooth anomalies.
8. Describe the anatomical determinants of occlusion, function, and malfunction of occlusal mechanisms.
9. Explain how the knowledge of dental anatomy may be applied to the practice of dental hygiene including the procedures of dental charting, dental and dental hygiene diagnosis, scaling and root planing procedures.

#### **DHYG 118. Dental Radiology**

##### **4 Credits (3+1P)**

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. Restricted to Community College campuses.

##### **Learning Outcomes**

1. Explain the basic principles and concepts of radiation in general and x-radiation in particular.
2. Identify the component parts and workings of the dental x-ray machine and the production of x-rays.
3. Discuss the effects of ionizing radiation on living tissues including protective and recommended health and safety factors.
4. Use appropriate procedures for selecting films and exposure factors and for processing and evaluating radiographs in the production of quality radiographs.
5. Recognize the characteristics of an acceptable x-ray image, the factors that influence the image, and the importance of quality assurance in imaging.
6. Analyze the legal issues related to dental radiography and the role of the dental radiographer in patient education and patient relations.
7. Demonstrate effective patient management techniques for intraoral and extraoral radiographs, panoramic and alternate imaging modalities utilized in dental radiography.
8. Demonstrate competency in radiographic interpretation including normal radiographic landmarks and radiographic pathology.
9. Demonstrate the radiographic techniques of interproximal, paralleling, bisection, panoramic and occlusal radiography which meet SJC standards for acceptable radiographs. 1
10. Demonstrate acceptable radiographic processing, film duplication, evaluation of radiographs, and radiographic equipment maintenance utilizing radiation safety and infection control protocols.

#### **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.

##### **Learning Outcomes**

1. Prevention of disease transmission: a. Asepsis protocol of recommended clinical guidelines for infection and hazard

- management prior, during and after the provision of dental hygiene services. b. Management of individuals with bloodborne infectious diseases based on standard precautions. c. Post-exposure guidelines as defined by the Centers for Disease Control and Prevention (CDC). d. Selection and use of effective methods of instrument and dental unit sterilization/disinfection. e. Valuing the dental hygienist's role in preventing disease transmission.
2. Patient/operator positioning: a. Positioning self and the patient to maximize accessibility and visibility to the field of operation. b. Selecting operator positioning strategies to prevent or lessen the risk of injury to self and/or the patient during implementation of dental hygiene care. c. Valuing the need for effective ergonomics and safe patient/operator positioning. d. Valuing the need for effective use of vision magnification for intraoral procedures.
3. Time and motion management: a. Selecting time and motion patterns for safe and efficient implementation of dental hygiene care.
4. Prevention and/or management of emergency situations: a. Developing a management plan for medical emergencies. b. Applying current methods for prevention of emergencies. c. Assessing the patient's need for emergency care. d. Implementing basic life support methods consistent with American Heart Association guidelines. e. Valuing maintaining skills in preventing and managing emergencies. f. Valuing the dental hygienist's role in preventing and managing emergencies.
5. Comprehensive patient assessment: Obtaining and recording a comprehensive medical, social, dental and nutrition health history. b. Recognizing conditions that necessitate special consideration prior to or during treatment. c. Obtaining, interpreting and monitoring vital signs according to American Heart Association guidelines. d. Performing and documenting an extraoral and intraoral examination that includes soft and hard tissue of the head, neck and oral cavity. e. Performing and documenting an examination of the dentition that includes dental charting, occlusion and assessment of hard and soft deposits. f. Performing and documenting an examination of the periodontium that includes gingival assessment, recession, bleeding upon probing, sulci and/or pocket measurements, clinical attachment level, furcation involvement, tooth mobility, fremitus, mucogingival conditions and radiographic findings. g. Evaluating patient risk factors for oral diseases. h. Discriminating pertinent and significant assessment findings from those that are not significant or within a range of normal. i. Assessing the need for exposing intraoral and/or extraoral radiographs/images to support the clinical examination. j. Exposing, developing, interpreting and evaluating intraoral and extraoral dental radiographs/images. k. Assessing the need for exposing, developing and implementing intraoral photography. l. Employing radiation safety principles in procedures requiring exposure to ionizing radiation. m. Using supplemental screening tools to support assessment strategies such as Periodontal Screening and Recording (PSR), alginate impressions and study models, indices and vitality testing. n. Assessing for the patient's oral health needs, beliefs, knowledge, skills and selfcare practices. o. Valuing the need for consistently performing patient assessment at professionally accepted standards of care.
6. Diagnosis and planning of dental hygiene care: a. Analyzing the patient's needs for preventive, educational, and therapeutic dental hygiene services. b. Synthesizing patient assessment findings and risk factors in formulating a patient centered dental hygiene treatment plan and case presentation. c. Formulating a dental hygiene diagnosis from comprehensive assessment findings or evidence. d. Proposing measurable patient outcome goals for oral health. e. Identifying factors contributing to the patient's preventive,

- educational and/or therapeutic oral health needs. f. Selecting dental hygiene intervention strategies that will guide the patient to achieving patient-centered oral health outcomes that include oral and systemic health education strategies. g. Appointment planning and sequencing of dental hygiene care to meet the patient's oral health goals. h. Obtaining informed consent by discussing with the patient his/her oral health findings, goals and treatment strategies. i. Value the importance of patient-centered care and concepts of health promotion.
7. Principles and methods of dental hygiene intervention. a. Implementing dental hygiene strategies and services that address the factors contributing to the patient's preventive, educational and/or therapeutic oral health needs. b. Implementing cognitive, psychomotor and affective strategies to manage barriers to oral self-care. c. Performing nutritional and tobacco cessation counseling for oral health management. d. Performing initial and supportive periodontal therapies. e. Implementing nonsurgical therapeutic periodontal debridement procedures supportive of the patient's oral health condition. f. Applying the principles of instrumentation that include grasp, fulcrum, adaptation, angulation, activation/ stroke and lateral pressure to assure complete debridement. g. Applying the principles of instrument design that include shank, handle, working end/blade to support instrument selection for maximum effectiveness, safety and efficiency in debridement procedures. h. Applying principles of therapeutic ultrasonic periodontal debridement. i. Maintaining instrument sharpness. j. Using pain and anxiety management strategies that include applying topical anesthetics, applying hard tissue topical desensitizing agents, administering or assisting in the administration of block and infiltration anesthesia and administering or monitoring of nitrous oxide/oxygen analgesia. k. Applying preventive and therapeutic topical agents for disease management, including fluoride. l. Applying selective coronal polishing procedures that include polishing, airpowder polishing and selection of polishing agent. m. Performing and evaluating the placement of pit and fissure sealants. n. Valuing the need for consistently performing preventive, educational and/or therapeutic dental hygiene services at professionally accepted standards of care.
  8. Principles and methods of evaluating outcomes of dental hygiene care: a. Evaluating and documenting the results of preventive and/or therapeutic dental hygiene interventions in meeting the proposed treatment plan goals. b. Recommending a recare schedule for continued supportive care. c. Recommending referral for additional assessment and/or treatment. d. Valuing the importance of evaluation in monitoring patient oral health. e. Assessing overall patient satisfaction with care provided.
  9. Health informatics and emerging technologies: a. Applying the principles for maintaining comprehensive and accurate records of all information and services offered to and provided to the patient. b. Documenting additional dental care needed by the patient. c. Valuing the need for maintenance of thorough and accurate records. 1
  10. Professional ethics: a. Applying the principles of professional and ethical behavior when providing patient care. b. Self-assessing ability to perform dental hygiene services at a high standard of care. c. Valuing patient confidentiality and patient rights according to the guidelines of the Health Insurance Portability and Accountability Act of 1996 (HIPAA). d. Valuing the patient's right to dental hygiene care consistently provided at acceptable standards.
- 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 4 credits.
- Learning Outcomes**
1. Prevention of disease transmission: a. Asepsis protocol of recommended clinical guidelines for infection and hazard management prior, during and after the provision of dental hygiene services. b. Management of individuals with bloodborne infectious diseases based on standard precautions. c. Post-exposure guidelines as defined by the Centers for Disease Control and Prevention (CDC). d. Selection and use of effective methods of instrument and dental unit sterilization/disinfection. e. Valuing the dental hygienist's role in preventing disease transmission.
  2. Patient/operator positioning: a. Positioning self and the patient to maximize accessibility and visibility to the field of operation. b. Selecting operator positioning strategies to prevent or lessen the risk of injury to self and/or the patient during implementation of dental hygiene care. c. Valuing the need for effective ergonomics and safe patient/operator positioning. d. Valuing the need for effective use of vision magnification for intraoral procedures.
  3. Time and motion management: a. Selecting time and motion patterns for safe and efficient implementation of dental hygiene care. b. Valuing the need for efficient time and motion management.
  4. Prevention and/or management of emergency situations: a. Developing a management plan for medical emergencies. b. Applying current methods for prevention of emergencies. c. Assessing the patient's need for emergency care. d. Implementing basic life support methods consistent with American Heart Association guidelines. e. Valuing maintaining skills in preventing and managing emergencies. f. Valuing the dental hygienist's role in preventing and managing emergencies.
  5. Comprehensive patient assessment: a. Obtaining and recording a comprehensive medical, social, dental and nutrition health history. b. Recognizing conditions that necessitate special consideration prior to or during treatment. c. Obtaining, interpreting and monitoring vital signs according to American Heart Association guidelines. d. Performing and documenting an extraoral and intraoral examination that includes soft and hard tissue of the head, neck and oral cavity. e. Performing and documenting an examination of the dentition that includes dental charting, occlusion and assessment of hard and soft deposits. f. Performing and documenting an examination of the periodontium that includes gingival assessment, recession, bleeding upon probing, sulci and/or pocket measurements, clinical attachment level, furcation involvement, tooth mobility, fremitus, mucogingival conditions and radiographic findings. g. Evaluating patient risk factors for oral diseases. h. Discriminating pertinent and significant assessment findings from those that are not significant or within a range of normal. i. Assessing the need for exposing intraoral and/or extraoral radiographs/images to support the clinical examination. j. Exposing, developing, interpreting and evaluating intraoral and extraoral dental radiographs/images. k. Assessing the need for exposing, developing and implementing intraoral photography. l. Employing radiation safety principles in procedures requiring exposure to ionizing radiation. m. Using supplemental screening tools to support assessment strategies such as Periodontal Screening and Recording (PSR), alginate impressions and study models, indices and vitality testing. n. Assessing for the patient's oral health needs, beliefs, knowledge, skills and selfcare practices. o. Valuing the need

- for consistently performing patient assessment at professionally accepted standards of care.
6. Diagnosis and planning of dental hygiene care: a. Analyzing the patient's needs for preventive, educational, and therapeutic dental hygiene services. b. Synthesizing patient assessment findings and risk factors in formulating a patient centered dental hygiene treatment plan and case presentation. c. Formulating a dental hygiene diagnosis from comprehensive assessment findings or evidence. d. Proposing measurable patient outcome goals for oral health. e. Identifying factors contributing to the patient's preventive, educational and/or therapeutic oral health needs. f. Selecting dental hygiene intervention strategies that will guide the patient to achieving patient-centered oral health outcomes that include oral and systemic health education strategies. g. Appointment planning and sequencing of dental hygiene care to meet the patient's oral health goals. h. Obtaining informed consent by discussing with the patient his/her oral health findings, goals and treatment strategies. i. Value the importance of patient-centered care and concepts of health promotion.
  7. Principles and methods of dental hygiene intervention: a. Implementing dental hygiene strategies and services that address the factors contributing to the patient's preventive, educational and/or therapeutic oral health needs. b. Implementing cognitive, psychomotor and affective strategies to manage barriers to oral self-care. c. Performing nutritional and tobacco cessation counseling for oral health management. d. Performing initial and supportive periodontal therapies. e. Implementing nonsurgical therapeutic periodontal debridement procedures supportive of the patient's oral health condition. f. Applying the principles of instrumentation that include grasp, fulcrum, adaptation, angulation, activation/stroke and lateral pressure to assure complete debridement. g. Applying the principles of instrument design that include shank, handle, working end/blade to support instrument selection for maximum effectiveness, safety and efficiency in debridement procedures. h. Applying principles of therapeutic ultrasonic periodontal debridement. i. Maintaining instrument sharpness. j. Using pain and anxiety management strategies that include applying topical anesthetics, applying hard tissue topical desensitizing agents, administering or assisting in the administration of block and infiltration anesthesia and administering or monitoring of nitrous oxide/oxygen analgesia. k. Applying preventive and therapeutic topical agents for disease management, including fluoride. l. Applying selective coronal polishing procedures that include polishing, airpowder polishing and selection of polishing agent. m. Performing and evaluating the placement of pit and fissure sealants. n. Valuing the need for consistently performing preventive, educational and/or therapeutic dental hygiene services at professionally accepted standards of care.
  8. Principles and methods of evaluating outcomes of dental hygiene care: a. Evaluating and documenting the results of preventive and/or therapeutic dental hygiene interventions in meeting the proposed treatment plan goals. b. Recommending a recare schedule for continued supportive care. c. Recommending referral for additional assessment and/or treatment. d. Valuing the importance of evaluation in monitoring patient oral health. e. Assessing overall patient satisfaction with care provided.
  9. Health informatics and emerging technologies: a. Applying the principles for maintaining comprehensive and accurate records of all information and services offered to and provided to the patient. b. Documenting additional dental care needed by the patient. c. Valuing the need for maintenance of thorough and accurate records. 1
  10. Professional ethics: a. Applying the principles of professional and ethical behavior when providing patient care. b. Self-assessing ability to perform dental hygiene services at a high standard of care. c. Valuing patient confidentiality and patient rights according to the guidelines of the Health Insurance Portability and Accountability Act of 1996 (HIPAA). d. Valuing the patient's right to dental hygiene care consistently provided at acceptable standards.
- 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.
- Learning Outcomes**
1. List and recognize the structural, clinical, histologic, and radiographic features of periodontal health and disease.
  2. Describe the functions of the periodontium, including the gingiva, dentinogingival junction, and attachment apparatus.
  3. List and recognize factors related to dental-implant management.
  4. Describe the relationship of systemic factors and their contribution to periodontal disease.
  5. Recognize and describe clinical, radiographic, microbiological, and histopathological features of various periodontal diseases and differentiate among these diseases.
  6. Describe, discuss, and illustrate current knowledge of the etiology and pathogenesis of periodontal diseases.
  7. Discuss and differentiate between the diseases of the periodontium to include: a. Gingivitis b. Necrotizing and ulcerative periodontal diseases c. Periodontitis.
  8. Apply in a clinical situation, the use of periodontal assessments to describe correctly a patient's periodontal condition, including the extent and severity of any of the periodontal disease prior to and after treatment.
  9. Enumerate on those factors that affect treatment modalities, progression of disease and anticipated response to treatment. 1
  10. Describe the rationale for developing a sequence of treatment and explain how specific treatment objectives influence treatment planning. 1
  11. Discuss the concepts, goals, techniques and medications that apply to periodontal therapy. 1
  12. Describe the management of medical and surgical complications of periodontal therapy. 1
  13. Apply the principles of nonsurgical periodontal instrumentation to include instruction, monitoring plaque-control procedures and professional mechanical instrumentation in a clinical situation. 1
  14. List the indications and contraindications, methods, and material for occlusal therapy, splinting, tooth movement and iatrogenic factors of periodontal therapy. 1
  15. Describe the indications, contraindications, objectives and methodology for the most commonly performed periodontal surgical procedures. 1
  16. Discuss patient education methods and the use of antimicrobial therapeutic agents used in the treatment of periodontal therapy patients. 1
  17. Explain the role of the dental hygienist in the providing nonsurgical periodontal therapy or supportive periodontal therapy. 1
  18. Discuss the epidemiology and classification of periodontal disease. 1

19. Relate current literature to the role of periodontal disease to health-related issues. 2
20. Actively and independently acquire, apply and adapt skills and knowledge to develop expertise and a broader understanding of the world as lifelong learners.

### **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.

#### **Learning Outcomes**

1. List and recognize the structural, clinical, histologic, and radiographic features of periodontal health and disease.
2. Recognize the periodontal classification system(s).
3. Recognize the different periodontal staging and grading.
4. Describe the functions of the periodontium, including the gingiva, dentinogingival junction, and attachment apparatus.
5. Describe the inflammatory process in the periodontium.
6. Recognize mucogingival conditions of the periodontium.
7. List and recognize factors related to dental-implant management.
8. Describe the relationship of systemic factors and their contribution to periodontal disease.
9. Recognize and describe clinical, radiographic, microbiological, and histopathological features of various periodontal diseases and differentiate among these diseases. 1
10. Describe, discuss, and illustrate current knowledge of the etiology and pathogenesis of periodontal diseases. 1
11. Discuss and differentiate between the diseases of the periodontium to include: a. Gingivitis b. Necrotizing and ulcerative periodontal diseases c. Periodontitis. 1
12. Apply in a clinical situation, the use of periodontal assessments to describe correctly a patient's periodontal condition, including the extent and severity of any of the periodontal disease prior to and after treatment. 1
13. Enumerate on those factors that affect treatment modalities, progression of disease and anticipated response to treatment. 1
14. Describe the rationale for developing a sequence of treatment and explain how specific treatment objectives influence treatment planning. 1
15. Discuss Treatment options for different populations affected by periodontal disease. 1
16. Discuss the concepts, goals, techniques and medications that apply to periodontal therapy. 1
17. Describe the management of medical and surgical complications of periodontal therapy. 1
18. Apply the principles of nonsurgical periodontal instrumentation to include instruction, monitoring plaque-control procedures and professional mechanical instrumentation in a clinical situation. 1
19. List the indications and contraindications, methods, and material for occlusal therapy, splinting, tooth movement and iatrogenic factors of periodontal therapy. 2
20. Discuss instruments and techniques for periodontal therapy. 2
21. Describe the indications, contraindications, objectives and methodology for the most commonly performed periodontal surgical procedures. 2

22. Discuss patient education methods and the use of antimicrobial therapeutic agents used in the treatment of periodontal therapy patients. 2
23. Discuss the epidemiology and classification of periodontal disease. 2
24. Relate current literature to the role of periodontal disease to health-related issues. 2
25. Discuss the importance of instrument sharpening for periodontal therapy.

### **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.

#### **Learning Outcomes**

1. Prevention of disease transmission: a. Asepsis protocol of recommended clinical guidelines for infection and hazard management prior, during and after the provision of dental hygiene services. b. Management of individuals with bloodborne infectious diseases based on standard precautions. c. Post-exposure guidelines as defined by the Centers for Disease Control and Prevention (CDC). d. Selection and use of effective methods of instrument and dental unit sterilization/disinfection.
2. Patient/operator positioning: a. Positioning self and the patient to maximize accessibility and visibility to the field of operation. b. Selecting operator positioning strategies to prevent or lessen the risk of injury to self and/or the patient during implementation of dental hygiene care. c. Valuing the need for effective ergonomics and safe patient/operator positioning. d. Valuing the need for effective use of vision magnification for intraoral procedures.
3. Time and motion management: a. Selecting time and motion patterns for safe and efficient implementation of dental hygiene care. b. Valuing the need for efficient time and motion management.
4. Prevention and/or management of emergency situations: a. Developing a management plan for medical emergencies. b. Applying current methods for prevention of emergencies. c. Assessing the patient's need for emergency care. d. Implementing basic life support methods consistent with American Heart Association guidelines. e. Valuing maintaining skills in preventing and managing emergencies. f. Valuing the dental hygienist's role in preventing and managing emergencies.
5. Comprehensive patient assessment: a. Obtaining and recording a comprehensive medical, social, dental and nutrition health history. b. Recognizing conditions that necessitate special consideration prior to or during treatment. c. Obtaining, interpreting and monitoring vital signs according to American Heart Association guidelines. d. Performing and documenting an extraoral and intraoral examination that includes soft and hard tissue of the head, neck and oral cavity. e. Performing and documenting an examination of the dentition that includes dental charting, occlusion and assessment of hard and soft deposits. f. Performing and documenting an examination of the periodontium that includes gingival assessment, recession, bleeding upon probing, sulci and/or pocket measurements, clinical attachment level, furcation involvement, tooth mobility, fremitus, mucogingival conditions and radiographic findings. g. Evaluating patient risk factors for oral diseases. h. Discriminating pertinent and significant assessment findings from those that are not significant or within a

- range of normal. i. Assessing the need for exposing intraoral and/or extraoral radiographs/images to support the clinical examination. j. Exposing, developing, interpreting and evaluating intraoral and extraoral dental radiographs/images. k. Assessing the need for exposing, developing and implementing intraoral photography. l. Employing radiation safety principles in procedures requiring exposure to ionizing radiation. m. Using supplemental screening tools to support assessment strategies such as Periodontal Screening and Recording (PSR), alginate impressions and study models, indices and vitality testing. n. Assessing for the patient's oral health needs, beliefs, knowledge, skills and selfcare practices. o. Valuing the need for consistently performing patient assessment at professionally accepted standards of care.
6. Diagnosis and planning of dental hygiene care: a. Analyzing the patient's needs for preventive, educational, and therapeutic dental hygiene services. b. Synthesizing patient assessment findings and risk factors in formulating a patient centered dental hygiene treatment plan and case presentation. c. Formulating a dental hygiene diagnosis from comprehensive assessment findings or evidence. d. Proposing measurable patient outcome goals for oral health. e. Identifying factors contributing to the patient's preventive, educational and/or therapeutic oral health needs. f. Selecting dental hygiene intervention strategies that will guide the patient to achieving patient-centered oral health outcomes that include oral and systemic health education strategies. g. Appointment planning and sequencing of dental hygiene care to meet the patient's oral health goals. h. Obtaining informed consent by discussing with the patient his/her oral health findings, goals and treatment strategies. i. Value the importance of patient-centered care and concepts of health promotion.
7. Principles and methods of dental hygiene intervention: a. Implementing dental hygiene strategies and services that address the factors contributing to the patient's preventive, educational and/or therapeutic oral health needs. b. Implementing cognitive, psychomotor and affective strategies to manage barriers to oral self-care. c. Performing nutritional and tobacco cessation counseling for oral health management. d. Performing initial and supportive periodontal therapies. e. Implementing nonsurgical therapeutic periodontal debridement procedures supportive of the patient's oral health condition. f. Applying the principles of instrumentation that include grasp, fulcrum, adaptation, angulation, activation/stroke and lateral pressure to assure complete debridement. g. Applying the principles of instrument design that include shank, handle, working end/blade to support instrument selection for maximum effectiveness, safety and efficiency in debridement procedures. h. Applying principles of therapeutic ultrasonic periodontal debridement. i. Maintaining instrument sharpness. j. Using pain and anxiety management strategies that include applying topical anesthetics, applying hard tissue topical desensitizing agents, administering or assisting in the administration of block and infiltration anesthesia and administering or monitoring of nitrous oxide/oxygen analgesia. k. Applying preventive and therapeutic topical agents for disease management, including fluoride, antimicrobial agents and local delivery/controlled released agents. l. Applying selective coronal polishing procedures that include polishing, airpowder polishing and selection of polishing agent. m. Performing and evaluating the placement of pit and fissure sealants. n. Performing and evaluating the finishing and polishing of existing restorations. o. Valuing the need for consistently performing preventive, educational and/or therapeutic dental hygiene services at professionally accepted standards of care.
8. Principles and methods of evaluating outcomes of dental hygiene care: a. Evaluating and documenting the results of preventive and/or therapeutic dental hygiene interventions in meeting the proposed treatment plan goals. b. Recommending a recare schedule for continued supportive care. c. Recommending referral for additional assessment and/or treatment. d. Valuing the importance of evaluation in monitoring patient oral health. e. Assessing overall patient satisfaction with care provided.
9. Health informatics and emerging technologies: a. Applying the principles for maintaining comprehensive and accurate records of all information and services offered to and provided to the patient. b. Documenting additional dental care needed by the patient. c. Valuing the need for maintenance of thorough and accurate records. 1
10. Professional ethics: a. Applying the principles of professional and ethical behavior when providing patient care. b. Self-assessing ability to perform dental hygiene services at a high standard of care. c. Valuing patient confidentiality and patient rights according to the guidelines of the Health Insurance Portability and Accountability Act of 1996 (HIPAA). d. Valuing the patient's right to dental hygiene care consistently provided at acceptable standards.

### **DHYG 134. Dental Materials** **3 Credits (2+1P)**

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. Restricted to Community College Campuses only. May be repeated up to 3 credits.

#### **Learning Outcomes**

1. Recognize general rules for handling dental materials.
2. Recognize and identify materials science and dentistry.
3. Implement proper infection control and safety in the dental office.
4. Recognize the properties and uses of impression materials.
5. Demonstrate proper disinfection of impressions, dentures and other appliances and materials.
6. Understand the process and demonstrate the technique for taking of alginate impressions and elastomeric impressions.
7. Recognize the properties and demonstrate the use of gypsum materials.
8. Demonstrate the fabrication and trimming of study models.
9. Recognize the properties and demonstrate the use of Adhesive materials, Direct polymeric restorative materials, Amalgam and other direct metallic restorative materials, Polishing materials and abrasion, and Dental cements. 1
10. Demonstrate the steps for fabricating and delivery protocol of an oral appliance. 1
11. Recognize and apply the concepts of vital tooth whitening.

### **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.

#### **Learning Outcomes**

1. Value the importance of properly sharpened instruments in clinical practice.

2. Create a smooth, stain free tooth surface with the use of air powder polishing.
3. Utilize diagnostic equipment to aid in patient assessments.
4. Use power driven instruments to remove disease causing agents from the gingiva and tooth surface.
5. Practice advanced root surface debridement techniques using extraoral, facilitated, and alternative fulcrums/finger rest.
6. Incorporate specialty instruments into the dental hygiene armamentarium for root assessment and debridement.
7. Correlate the relationship between the inflammatory response and periodontal disease.
8. Modify dental hygiene care based on the specific risks and needs of the medically compromised patient.
9. Problem solve using clinical case studies. 1
10. Integrate current research and evidence-based practices into the delivery of patient care and education.

### DHYG 212. Clinical Dental Hygiene III

#### 5 Credits (5P)

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 5 credits.

#### Learning Outcomes

1. Prevention of disease transmission: a. Asepsis protocol of recommended clinical guidelines for infection and hazard management prior, during and after the provision of dental hygiene services. b. Management of individuals with bloodborne infectious diseases based on standard precautions. c. Post-exposure guidelines as defined by the Centers for Disease Control and Prevention (CDC). d. Selection and use of effective methods of instrument and dental unit sterilization/disinfection. e. Valuing the dental hygienist's role in preventing disease transmission.
2. Patient/operator positioning: a. Positioning self and the patient to maximize accessibility and visibility to the field of operation. b. Selecting operator positioning strategies to prevent or lessen the risk of injury to self and/or the patient during implementation of dental hygiene care. c. Valuing the need for effective ergonomics and safe patient/operator positioning. d. Valuing the need for effective use of vision magnification for intraoral procedures.
3. Time and motion management: a. Selecting time and motion patterns for safe and efficient implementation of dental hygiene care. b. Valuing the need for efficient time and motion management.
4. Prevention and/or management of emergency situations: a. Developing a management plan for medical emergencies. b. Applying current methods for prevention of emergencies. c. Assessing the patient's need for emergency care. d. Implementing basic life support methods consistent with American Heart Association guidelines. e. Valuing maintaining skills in preventing and managing emergencies. f. Valuing the dental hygienist's role in preventing and managing emergencies.
5. Comprehensive patient assessment: a. Obtaining and recording a comprehensive medical, social, dental and nutrition health history. b. Recognizing conditions that necessitate special consideration prior to or during treatment. c. Obtaining, interpreting and monitoring vital signs according to American Heart Association guidelines. d. Performing and documenting an extraoral and intraoral examination that includes soft and hard tissue of the head, neck and oral cavity.
- e. Performing and documenting an examination of the dentition that includes dental charting, occlusion and assessment of hard and soft deposits. f. Performing and documenting an examination of the periodontium that includes gingival assessment, recession, bleeding upon probing, sulci and/or pocket measurements, clinical attachment level, furcation involvement, tooth mobility, fremitus, mucogingival conditions and radiographic findings. g. Evaluating patient risk factors for oral diseases. h. Discriminating pertinent and significant assessment findings from those that are not significant or within a range of normal. i. Assessing the need for exposing intraoral and/or extraoral radiographs/images to support the clinical examination. j. Exposing, developing, interpreting and evaluating intraoral and extraoral dental radiographs/images. k. Assessing the need for exposing, developing and implementing intraoral photography. l. Employing radiation safety principles in procedures requiring exposure to ionizing radiation. m. Using supplemental screening tools to support assessment strategies such as Periodontal Screening and Recording (PSR), alginate impressions and study models, indices and vitality testing. n. Assessing for the patient's oral health needs, beliefs, knowledge, skills and selfcare practices. o. Valuing the need for consistently performing patient assessment at professionally accepted standards of care.
6. Diagnosis and planning of dental hygiene care: a. Analyzing the patient's needs for preventive, educational, and therapeutic dental hygiene services. b. Synthesizing patient assessment findings and risk factors in formulating a patient centered dental hygiene treatment plan and case presentation. c. Formulating a dental hygiene diagnosis from comprehensive assessment findings or evidence. d. Proposing measurable patient outcome goals for oral health. e. Identifying factors contributing to the patient's preventive, educational and/or therapeutic oral health needs. f. Selecting dental hygiene intervention strategies that will guide the patient to achieving patient-centered oral health outcomes that include oral and systemic health education strategies. g. Appointment planning and sequencing of dental hygiene care to meet the patient's oral health goals. h. Obtaining informed consent by discussing with the patient his/her oral health findings, goals and treatment strategies. i. Value the importance of patient-centered care and concepts of health promotion.
7. Principles and methods of dental hygiene intervention: a. Implementing dental hygiene strategies and services that address the factors contributing to the patient's preventive, educational and/or therapeutic oral health needs. b. Implementing cognitive, psychomotor and affective strategies to manage barriers to oral self-care. c. Performing nutritional and tobacco cessation counseling for oral health management. d. Performing initial and supportive periodontal therapies. e. Implementing nonsurgical therapeutic periodontal debridement procedures supportive of the patient's oral health condition. f. Applying the principles of instrumentation that include grasp, fulcrum, adaptation, angulation, activation/stroke and lateral pressure to assure complete debridement. g. Applying the principles of instrument design that include shank, handle, working end/blade to support instrument selection for maximum effectiveness, safety and efficiency in debridement procedures. h. Applying principles of therapeutic ultrasonic periodontal debridement. i. Maintaining instrument sharpness. j. Using pain and anxiety management strategies that include applying topical anesthetics, applying hard tissue topical desensitizing agents, administering or assisting in the administration of block and infiltration anesthesia and administering or monitoring

- of nitrous oxide/oxygen analgesia. k. Applying preventive and therapeutic topical agents for disease management, including fluoride, antimicrobial agents and local delivery/controlled released agents. l. Applying selective coronal polishing procedures that include polishing, airpowder polishing and selection of polishing agent. m. Performing and evaluating the placement of pit and fissure sealants. n. Performing and evaluating the finishing and polishing of existing restorations. o. Valuing the need for consistently performing preventive, educational and/or therapeutic dental hygiene services at professionally accepted standards of care.
8. Principles and methods of evaluating outcomes of dental hygiene care: a. Evaluating and documenting the results of preventive and/or therapeutic dental hygiene interventions in meeting the proposed treatment plan goals. b. Recommending a recare schedule for continued supportive care. c. Recommending referral for additional assessment and/or treatment. d. Valuing the importance of evaluation in monitoring patient oral health. e. Assessing overall patient satisfaction with care provided.
  9. Health informatics and emerging technologies: a. Applying the principles for maintaining comprehensive and accurate records of all information and services offered to and provided to the patient. b. Documenting additional dental care needed by the patient. c. Valuing the need for maintenance of thorough and accurate records. 1
  10. Professional ethics: a. Applying the principles of professional and ethical behavior when providing patient care. b. Self-assessing ability to perform dental hygiene services at a high standard of care. c. Valuing patient confidentiality and patient rights according to the guidelines of the Health Insurance Portability and Accountability Act of 1996 (HIPAA). d. Valuing the patient's right to dental hygiene care consistently provided at acceptable standards.
- 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.
- Learning Outcomes**
1. Utilize pharmacological terminology, sources of drug information (including regulating agencies), basic principles related to pharmacology and recognize the symbols and format used to write legal prescriptions.
  2. Describe general principles of pharmacology to include basic physiological and biochemical mechanisms through which different drug forms exert their actions.
  3. Explain adverse reactions (including toxicity, hypersensitivity, teratogenic, and idiosyncratic reactions), and general methods of drug toxicity evaluation.
  4. Review the physiology of the autonomic nervous system; analyze the therapeutic uses of autonomic drugs; mechanisms of action; variables affecting the medication including drug interactions; possible oral manifestations and implications related to dental treatment, and dental uses of autonomic drugs.
  5. Learn the concepts of pain reaction vs. pain perception; analyze the therapeutic uses of nonopioid (nonnarcotic) analgesics; common doses; pharmacokinetics; mechanisms of action; variables affecting the medication including drug interactions; possible oral manifestations and implications related to dental treatment.
  6. Analyze the therapeutic uses of opioid (narcotic) analgesics and antagonists; the physiology of opioid receptors; common doses; pharmacokinetics; mechanisms of action; variables affecting the medication including drug interactions; possible oral manifestations and implications related to dental treatment.
  7. Discuss the concepts of dental infections, as well as the concepts of infection evolution, and resistance; analyze the therapeutic uses of anti-infective agents; common doses; pharmacokinetics; mechanisms of action; variables affecting the medication including drug interactions; possible oral manifestations and implications related to dental treatment.
  8. Analyze the therapeutic uses of antifungal and antiviral agents; common doses; pharmacokinetics; mechanisms of action; variables affecting the medication including drug interactions; possible oral manifestations and implications related to dental treatment; know concepts of antiretroviral combinations.
  9. Analyze the therapeutic uses of local anesthetic agents; chemistry; nerve fiber physiology; common doses; variables affecting the medication including drug interactions; possible oral manifestations and implications related to dental treatment; vasoconstrictors and topical anesthetics used in dentistry. 1
  10. Analyze the therapeutic uses of general anesthetics; pharmacokinetics; mechanisms of action; variables affecting the medication including drug interactions; implications related to dental treatment; stages and planes of anesthesia; methods of administration and side effects of nitrous oxide; concept of balanced anesthesia. 1
  11. Analyze the therapeutic uses of antianxiety agents; common doses; pharmacokinetics; mechanisms of action; variables affecting the medication including drug interactions; possible oral manifestations and implications related to dental treatment; dental uses of antianxiety agents. 1
  12. Analyze the effects of deficiencies of vitamins and minerals; variables affecting the pharmacokinetics of vitamins and minerals; possible oral manifestations and implications related to dental treatment and systemic health. 1
  13. Know the presentations and causes of common oral conditions; analyze drugs used to treat those conditions; common doses; pharmacokinetics; mechanisms of action; variables affecting the medications including drug interactions; possible oral manifestations and implications related to dental treatment. 1
  14. Know causes and prevention of hygiene-related disorders; analyze drugs used to treat hygiene-related oral disorders; common doses; pharmacokinetics; mechanisms of action; variables affecting the medication including drug interactions; possible oral manifestations and implications related to dental treatment. 1
  15. Know dental implications of cardiovascular disease, including contraindications, vasoconstrictor limitations, and prevention of infective endocarditis; analyze the therapeutic uses of cardiovascular drugs; pharmacokinetics; mechanisms of action; variables affecting the medication including drug interactions; the six categories of cardiovascular drugs. 1
  16. Know the physiology of seizures; analyze the therapeutic uses of anticonvulsants; pharmacokinetics; mechanisms of action; variables affecting the medication including drug interactions; possible oral manifestations and implications related to dental treatment; dental treatment of patients with seizure disorders. 1
  17. Know theories and categories of psychiatric disorders; analyze the therapeutic uses of psychotherapeutic agents; pharmacokinetics; mechanisms of action; variables affecting the medication including



- drug interactions; possible oral manifestations and implications related to dental treatment. 1
18. Analyze the therapeutic uses of autocooids and antihistamines; pharmacokinetics; mechanisms of action; variables affecting the medication including drug interactions; possible oral manifestations and implications related to dental treatment. 1
  19. Know the physiology of the adrenal system; analyze the therapeutic uses of adrenocorticosteroids; pharmacokinetics; mechanisms of action; variables affecting the medication including drug interactions; possible oral manifestations and implications related to dental treatment, including needs and methods of steroid supplementation. 2
  20. Analyze the therapeutic uses of other hormones, including pituitary, thyroid, and sex hormones; pharmacokinetics; mechanisms of action; variables affecting the medication including drug interactions; know the effects of pituitary, thyroid, and sex hormone diseases; possible oral manifestations and implications related to dental treatment. 2
  21. Analyze the therapeutic uses of antineoplastic drugs; pharmacokinetics; mechanisms of action; variables affecting the medication including drug interactions and possible adverse drug effects; possible oral manifestations and implications related to dental treatment. 2
  22. Analyze the therapeutic uses of respiratory and gastrointestinal drugs, including drug categories and types of diseases; pharmacokinetics; mechanisms of action; variables affecting the medication including drug interactions; possible oral manifestations and implications related to dental treatment. 2
  23. Recognize emergencies and their causes, and the drugs commonly used to manage emergencies in the dental environment; common doses; interactions with other drugs; possible side effects; commonly used emergency equipment and supplies. 2
  24. Recognize the implications of using various drugs during pregnancy or breast feeding; FDA drug categories. 2
  25. Describe the implications of alcohol and drug abuse to dental practice; concepts of dependence, tolerance, addiction, habituation; some of the treatments for alcohol and drug abuse; the side effects and interactions of drugs used to treat abuse; categories of abused drugs. 2
  26. Analyze the therapeutic uses of natural and herbal products as well as dietary supplements; side effects and drug interactions; possible oral manifestations and implications related to dental treatment; laws and regulations governing natural and herbal products.
5. Describe methods for evaluating patients' anxiety levels and methods to reduce patient anxiety.
  6. Relate ASA classifications to potential medical emergencies.
  7. Describe activities and equipment needed to prepare for dental office emergencies.
  8. Maintain current CPR certification.
  9. Discuss various aspects of an adequate emergency kit and emergency equipment. 1
  10. List items that might be considered "critical" or "secondary." 1
  11. Recognize other drugs and types of equipment that could be included in an emergency kit. 1
  12. Differentiate the use of various drugs and equipment that might be found in the emergency kit. 1
  13. Demonstrate effective methods for drawing and presenting drugs. 1
  14. Describe and demonstrate effective methods for using and delivering oxygen. 1
  15. Demonstrate effective method for using an automatic external defibrillator (AED). 1
  16. Demonstrate team assignments in response to emergency situations. 1
  17. Describe the medicolegal implications of medical emergencies. 1
  18. Define and discuss: standard of care, duty to act, consent, abandonment, negligence. 1
  19. Differentiate appropriate responses to the following emergencies: unconsciousness, syncope, postural hypotension, acute adrenal insufficiency, respiratory distress, airway obstruction, hyperventilation, asthma, Allergic reactions, Altered consciousness, diabetes mellitus: insulin shock and diabetic coma, cerebrovascular accident, seizures, generalized tonic clonic, generalized absence, drug-related emergencies, drug overdose, local anesthetic toxicity, epinephrine toxicity, chest pain and cardiac arrest, angina, acute myocardial infarction, cardiac arrest, heart failure, hemorrhage, shock, burns, foreign body in the eye, chemical solution in the eye, dislocated jaw (due to trauma/fracture, subluxation, etc.), broken instrument, avulsed tooth. 2
  20. For any emergency situation that should occur: a. Recognize that an emergency situation exists. b. Discuss the general considerations. c. Compare predisposing factors. d. Discuss possible prevention strategies.

### 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 College campuses only.

#### Learning Outcomes

1. Describe significant emergency preventive measures.
2. Differentiate the goals or pretreatment physical and psychological evaluation of the patient.
3. For each question on the medical and dental histories, develop follow-up questions to assess the patient's risk of an emergency or need for treatment modification.
4. Discuss the relationship of various vital signs to potential emergency situations.

### 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 College campuses only.

#### Learning Outcomes

1. Explain how oral health research and the process of scientific inquiry knowledge development and daily practice.
2. Explain how an evidence-based decision-making approach enhances critical thinking and professional decision-making regarding patient care.
3. Describe the scientific method and research process.
4. Use the Internet and electronic resources in research and understand how they relate to dental hygiene education, practice and research.
5. Conduct an effective literature search using electronic databases (such as PubMed, MEDLINE, and CINAHL), professional journals, government documents, product literature and other print publications, video and other forms of multimedia.

6. Develop a PICO (or equivalent) research question to address an identified practice problem.
7. Discuss different research designs and when each is appropriate to use.
8. Explain the elements necessary to obtain valid and reliable results for observational, exploratory and experimental research.
9. Evaluate oral health research articles applying concepts of research design and methodology. 1
10. Interpret oral health data by proper application of statistical principles and tests. 1
11. Critically analyze different print and electronic information sources and apply to the practice of dental hygiene. 1
12. Gain an appreciation for the role of research in evidence-based dental hygiene practice.
18. Determine the appropriate pain control armamentarium, agents and techniques need to ensure patient safety and comfort during the administration of local anesthesia and nitrous oxide-oxygen analgesia. 1
19. Identify and describe intraoral landmarks implicated in the administration of local anesthetics. 2
20. List and explain the use and purpose for each armamentarium item required for the administration of local anesthesia. 2
21. Explain the different types of needles used for the delivery of local anesthesia and the rationale for using each needle. 2
22. Explain the proper sharps management to be used when handling local anesthetics and needles. 2
23. Explain proper protocols to manage adverse reactions to local anesthetics and vasoconstrictors in the dental office. 2
24. List and describe adverse reactions of local anesthetics in the CNS and CVS. 2
25. Evaluate and explain situations that require medical consultation before the administration of local anesthetics. 2
26. Describe signs and symptoms of undiagnosed medical conditions that can affect local anesthetic administration. 2
27. Determine ways to prevent and manage potential emergencies associated with dental anesthetics and nitrous oxide. 2
28. Describe the basic technique for administration of the following injections: Infiltrations, ASA nerve block, MSA nerve block, IO nerve block, PSA nerve block, IA nerve block, lingual nerver block, Buccal nerve block, Mental nerve block, Incisive nerve block, Gow- Gates nerve block, Vazirani-Akinosi (Akinosi) nerve block.

### **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.

#### **Learning Outcomes**

1. Explain pain/impulse conduction related to nerve anatomy and physiology.
2. Discuss the modalities of pain and mechanisms used to control pain.
3. Discuss the different types of nerve fibers and their functions.
4. Describe the pharmacological properties, actions, considerations, and contraindications to local anesthetic agents, vasoconstrictors, and nitrous oxide.
5. Evaluate and describe the relationship between pKa and pH as well as the clinical relevance of both.
6. Evaluate and discuss the signs, symptoms, and effects of local anesthetics in the central nervous system (CNS).
7. Evaluate and discuss the signs, symptoms, and effects of local anesthetics in the cardiovascular system (CVS).
8. Outline and discuss the biotransformation of esthers and amides and the half-life concept.
9. Identify and discuss vasoconstrictors. Similarities/differences between epinephrine and levonordefrin. 1
10. Describe and distinguish between clinical signs and symptoms of vasoconstrictors vs. local anesthetics. 1
11. Define and discuss what a maximum recommended dose is. 1
12. List maximum recommended doses for anesthetics and vasoconstrictors. 1
13. Calculate and explain maximum recommended doses of local anesthetic drugs and vasoconstrictors when one or multiple drugs with differing concentrations are administered on children, adults and those with compromised health systems. 1
14. Discuss the topical anesthetics available in dentistry and determine their potency. 1
15. Describe signs, symptoms, and adverse reactions, of topical anesthetics. 1
16. Assess the client's medico-dental history as it relates to choice of technique and agents used in the administration of local anesthetic and nitrous oxide-oxygen analgesia. 1
17. Demonstrate competence in administering selected local anesthetic injections and nitrous oxide-oxygen analgesia. 1

### **DHYG 219. Pain and Anxiety Management Clinical**

#### **1 Credit**

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.

**Prerequisite:** C or better in DHYG 218.

#### **Learning Outcomes**

1. Demonstrate competence in administering selected local anesthetic injections and nitrous oxide-oxygen analgesia.
2. Determine the appropriate pain control armamentarium, agents and techniques need to ensure patient safety and comfort during the administration of local anesthesia and nitrous oxide-oxygen analgesia.
3. Identify and describe intraoral landmarks implicated in the administration of local anesthetics.
4. List and explain the use and purpose for each armamentarium item required for the administration of local anesthesia.
5. Explain the different types of needles used for the delivery of local anesthesia and the rationale for using each needle.
6. Explain the proper sharps management to be used when handling local anesthetics and needles.
7. Explain proper protocols to manage adverse reactions to local anesthetics and vasoconstrictors in the dental office.
8. List and describe adverse reactions of local anesthetics in the CNS and CVS.
9. Evaluate and explain situations that require medical consultation before the administration of local anesthetics. 1
10. Describe signs and symptoms of undiagnosed medical conditions that can affect local anesthetic administration. 1

11. Determine ways to prevent and manage potential emergencies associated with dental anesthetics and nitrous oxide. 1
12. Practice pain control techniques according to legal and ethical standards. 1
13. Describe the basic technique for administration of the following injections: Infiltrations, ASA nerve block, MSA nerve block, IO nerve block, PSA nerve block, IA nerve block, lingual nerve block, Buccal nerve block, Mental nerve block, Incisive nerve block, Gow- Gates nerve block, Vazirani-Akinosi (Akinosi) nerve block.

#### **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.

##### **Learning Outcomes**

1. Value the importance of properly sharpened instruments in clinical practice.
2. Create a smooth, stain free tooth surface with the use of air powder polishing.
3. Utilize diagnostic equipment to aid in patient assessments.
4. Use power driven instruments to remove disease causing agents from the gingiva and tooth surface.
5. Practice advanced root surface debridement techniques using extraoral, facilitated, and alternative fulcrums/finger rest.
6. Incorporate specialty instruments into the dental hygiene armamentarium for root assessment and debridement.
7. Correlate the relationship between the inflammatory response and periodontal disease.
8. Modify dental hygiene care based on the specific risks and needs of the medically compromised patient.
9. Problem solve using clinical case studies. 1
10. Integrate current research and evidence-based practices into the delivery of patient care and education.

#### **DHYG 222. Clinical Dental Hygiene IV**

##### **5 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.

##### **Learning Outcomes**

1. Prevention of disease transmission.
2. Patient/operator positioning.
3. Time and motion management.
4. Prevention and/or management of emergency situations.
5. Comprehensive patient assessment.
6. Diagnosis and planning of dental hygiene care.
7. Principles and methods of dental hygiene intervention.

8. Principles and methods of evaluating outcomes of dental hygiene care.
9. Health informatics and emerging technologies. 1
10. Professional ethics.

#### **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 role of the dental hygienist and emerging issues in dental hygiene will be explored. May be repeated up to 2 credits.

##### **Learning Outcomes**

1. Define the terms "ethics," "morality" and "the law."
2. Describe worldview and discuss how every individual's worldview is unique.
3. Reflect on individual worldview and the role it plays in how other people and circumstances are interpreted.
4. Acknowledge that everyone has a view of the world based on a variety of experiences and sources and thus views the world differently, and that all worldviews embody some truths and have roots in reality.
5. Communicate one's own worldview regarding basic questions that all worldviews answer.
6. Describe the role of the dental hygienist in health care and the impact that respect for people has on that role.
7. Explain the professional relationship between the health care provider and the patient, specifically in terms of competence, fairness, integrity, responsibility, respect and service-mindedness.
8. Distinguish between the theories of utilitarianism, deontology and virtue ethics.
9. Identify the core values found in the Codes of Ethics of the American Dental Hygienists' Association, American Dental Assistants' Association, International Federation of Dental Hygienists, National Association of Dental Laboratories and additional codes highlighted. 1
10. Define the terms autonomy, confidentiality, societal trust, nonmaleficence, beneficence, justice, social justice, veracity and fidelity. 1
11. Discuss the criteria for informed consent and informed refusal. 1
12. Describe the purpose and common elements in a patient bill of rights. 1
13. Describe what creates an ethical dilemma. 1
14. Describe an ethical decision-making framework that can be applied to an ethical dilemma. 1
15. Apply an ethical decision-making framework to a case-based situation and be able to defend the choice of action. 1
16. Compare the concepts of civil law with criminal law, using examples found in allied dental health practices. 1
17. List the types and circumstances of supervision (or absence of supervision) found in the Dental Practice Act. 1
18. Describe scope of practice for members of the dental team. 1
19. Define and distinguish common legal concepts/terms, including malpractice, torts, contracts, felony and fraud. 2
20. Discuss the rights of patients protected by law and duties of providers regulated by law from the ethical, legal and professional perspectives. 2

21. Discuss the ethical and legal obligations to identify and report the signs of abuse (child, spouse and elderly). 2
22. Discuss the concept of justice and apply the common good to the delivery of and access to dental services. 2
23. Describe federal and state laws that impact the delivery of care and surrounding ethical issues. 2
24. Describe federal and state laws that impact the employer–employee relationship. 2
25. Describe cultural sensitivity and cultural competence and provide examples pertinent to patient care delivery. 2
26. List the steps necessary to attain cultural competence. 2
27. Define health literacy and provide examples of assisting patients with health literacy challenges. 2
28. Discuss ethical and legal protocols to protect information in the age of computers, social media and other technical advances. 2
29. Review the changes in the practice of allied dental professions focusing on educational requirements and credentialing as a profession. 3
30. Identify frequently encountered ethical or illegal challenges in the delivery of dental care and resources to address the challenges identified.

**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 College campuses only.

**Learning Outcomes**

1. Providing health education and preventive counseling to a variety of population groups.
2. Promoting the values of good oral and general health and wellness to the public and organizations within and outside the professions.
3. Identifying services that promote oral health and prevent oral disease and related conditions.
4. Advocating for consumer groups, businesses, and government agencies to support health care issues.
5. Assessing, planning, implementing, and evaluating community-based oral health programs.
6. Using screening, referral, and education to bring consumers into the health care delivery system.
7. Providing dental hygiene services in a variety of settings, including offices, hospitals, clinics, extended care facilities, community programs and schools.
8. Employing current infection prevention and control resources in community-focused health care settings.
9. Evaluating reimbursement mechanisms and their impact on the patient's access to dental care. 1
10. Recognizing and using written and electronic sources of information. 1
11. Evaluating the credibility and potential hazards of dental products and techniques. 1
12. Evaluating published clinical and basic science research and integrating this information to improve the oral health of the patient. 1

13. Recognizing the responsibility and demonstrating the ability to communicate professional knowledge verbally and in writing. 1
14. Accepting responsibility for solving problems and making decisions based on accepted scientific principles. 1
15. Expanding and contributing to the knowledge base of dental hygiene.

**DHYG 255. Special Topics in Dental Hygiene**  
**1 Credit (4P)**

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. Restricted to DHYG majors. May be repeated up to 2 credits.

**Learning Outcomes**

1. Use evidence-based decision making to expand and refine their skills working with a diversity of patients.
2. Provide dental hygiene services within a variety of settings.
3. Analyze assessments and implement appropriate treatment plans that aligns to accepted standard of care.
4. Communicate effectively with diverse individuals and serving all persons without discrimination by acknowledging and appreciating diversity.
5. Advocate for effective oral health care for underserved populations.
6. Analyze the needs of individuals who lack adequate access to oral health services in our communities.
7. Provide dental hygiene services to patients of different levels of periodontal classification, ages and special needs.

## **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 College campuses only.

**Learning Outcomes**

1. Students will recognize sonographic anatomy on observed sonographic procedures.
2. Students will identify and adhere to clinical site practices and policies.
3. Students will be able to describe aspects of the clinical experience.
4. Students will demonstrate effective communication skills with patients and healthcare team members.

**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.

**Learning Outcomes**

1. Students will describe essential functions of the sonographer in the health care setting.
2. Students will distinguish key patient care differences based on patient demographics.
3. Students will develop and apply professional ethics in line with industry standards.

- Students will describe best practices for infection control in the medical setting.

#### **DMS 105. Introduction to Clinical Practicum II**

##### **1 Credit (1P)**

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.

##### **Learning Outcomes**

- Demonstrate proficiency in patient care skills.
- Recognize sonographic anatomy.
- Assist with basic sonographic procedures in the clinical setting.
- Describe aspects of the clinical experience.

#### **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 College campuses only.

##### **Learning Outcomes**

- Students will describe peripheral and cerebrovascular anatomy and physiology.
- Students will identify normal anatomy and waveforms on sonographic images and correlative imaging procedures.
- Students will correlate Doppler waveforms to hemodynamic principles.
- Students will differentiate venous and arterial hemodynamic principles.

#### **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 College campuses only.

##### **Learning Outcomes**

- Students will recognize and document peripheral and cerebrovascular anatomy on sonographic examinations.
- Students will develop protocols for thorough imaging of peripheral and cerebrovascular sonographic imaging.
- Students will describe Doppler waveforms and correlate findings with hemodynamic principles.

#### **DMS 130. Pelvic Sonography**

##### **2 Credits (2)**

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 College campuses only.

##### **Learning Outcomes**

- Students will describe the relational anatomy of the pelvic organs.
- Students will distinguish the sonographic appearance of male and female pelvic anatomy.

- Students will discuss the physiology of pelvic organ systems.
- Students will correlate the physiologic cycles of pelvic organs with the appropriate sonographic appearances.

#### **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 College campuses only.

##### **Learning Outcomes**

- Students will identify normal anatomy of the male and female pelvis on sonographic images.
- Students will produce diagnostic sonographic images of pelvic organs.
- Students will develop protocols for thorough sonographic evaluation of the pelvic organs.
- Students will correlate sonographic findings with the normal physiologic processes of the female pelvic organs.

#### **DMS 140. Abdominal Sonography**

##### **2 Credits (2)**

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 College campuses only.

##### **Learning Outcomes**

- Students will identify the normal anatomy of the abdominal organs.
- Students will describe the physiology of abdominal organs and how it relates to sonographic appearances.
- Students will describe the relational anatomy of abdominal organ systems.

#### **DMS 140 L. Abdominal Sonography Lab**

##### **1 Credit (3P)**

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 College campuses only.

##### **Learning Outcomes**

- Students will identify the abdominal organs on sonographic images.
- Students will produce diagnostic quality sonographic images of the abdominal organs.
- Students will correlate sonographic appearances with the normal physiology of abdominal organs.
- Students will develop protocols for thorough and efficient imaging of the abdominal organs.

#### **DMS 150. Sonographic Principles and Instrumentation I**

##### **2 Credits (2)**

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 College campuses only.

**Learning Outcomes**

1. Students will describe the physics principles related to sonographic imaging.
2. Students will correlate physics principles to technical factor adjustments on sonographic equipment.
3. Students will solve mathematical equations related to sonographic physics principles.

**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 College campuses only.

**Learning Outcomes**

1. Students will describe the embryology and normal development of the 1st trimester pregnancy.
2. Students will recognize the sonographic anatomy of normal 1st trimester pregnancy.
3. Students will relate the gestational age with sonographic findings to recognize normal development of the 1st trimester pregnancy.

**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 College campuses only.

**Learning Outcomes**

1. Students will describe the normal anatomy and physiology of the 2nd and 3rd trimester pregnancy.
2. Students will correlate the sonographic appearance of the pregnancy with the gestational age to identify appropriate growth and development of the fetus.
3. Students will develop protocols for efficient and thorough scanning of the pregnancy.
4. Students will describe best practices for imaging the pregnancy in accordance with ALARA principles.

**DMS 170. Clinical Practicum I****1 Credit (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.

**Learning Outcomes**

1. Develop professional skills necessary in the clinical environment.
2. Perform basic sonographic procedures with minimal assistance from preceptors.
3. Assist with complex/advanced sonographic procedures under the guidance of preceptors.

**DMS 180. Clinical Practicum II****4 Credits (4)**

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.

**Prerequisite:** DMS 170.

**Learning Outcomes**

1. Students will demonstrate general and sonographic knowledge to function as a member of the healthcare team.
2. Students will identify and interpret data from patient charts.
3. Students will perform a broad range of general sonographic examinations with minimal to moderate assistance.
4. Students will demonstrate effective oral and written communication skills.

**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 College campuses only.

**Learning Outcomes**

1. Students will describe risk factors for vascular pathology.
2. Students will correlate Doppler waveforms with hemodynamic principles in the presence of pathology.
3. Students will describe the sonographic appearance of pathology in peripheral and cerebrovascular systems.
4. Students will identify modifications to sonographic techniques when pathology is identified.

**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 College campuses only.

**Learning Outcomes**

1. Students will utilize the Sonographic Reasoning Method to correlate clinical history with imaging findings.
2. Students will summarize the sonographic findings of case studies and analyze the technical factors utilized.
3. Students will recall knowledge of pathologies to apply to their evaluation of sonographic images.
4. Students will devise and defend a diagnostic hypothesis based on the clinical history and sonographic findings.

**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 College campuses only.

**Learning Outcomes**

1. Students will utilize the Sonographic Reasoning Method to correlate clinical history with imaging findings.
2. Students will summarize the sonographic findings of case studies and analyze the technical factors utilized.
3. Students will recall knowledge of pathologies to apply to their evaluation of sonographic images.
4. Students will devise and defend a diagnostic hypothesis based on the clinical history and sonographic findings.

**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 College campuses only.

**Learning Outcomes**

1. Students will recall the normal gynecological anatomy to identify variations or the presence of pathology.
2. Students will describe risk factors, clinical findings, and the sonographic appearance of gynecological pathologies.
3. Students will identify diagnostic differentials based on the sonographic appearance of gynecological pathologies.

**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 College campuses only.

**Learning Outcomes**

1. Students will recall the normal anatomy and physiology of the abdominal organs to recognize variations on sonographic images.
2. Students will describe modifications to the sonographic technique based when pathology is identified.
3. Students will correlate sonographic findings with clinical information to identify diagnostic differentials.

**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 College campuses only.

**Learning Outcomes**

1. Students will recall the normal anatomy and physiology of the abdominal organs to recognize variations on sonographic images.
2. Students will describe modifications to the sonographic technique when pathology is identified.
3. Students will correlate sonographic findings with clinical information to identify diagnostic differentials.

**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 College campuses only.

**Learning Outcomes**

1. Students will recall the normal anatomy of abdominal, gynecological, small parts and superficial structures, and vascular structures, to identify variations in the pediatric population.
2. Students will describe patient care modifications required for the pediatric population.
3. Students will correlate clinical history with sonographic appearances to identify diagnostic differentials.
4. Students will describe imaging techniques for pediatric specific sonographic examinations.

**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 College campuses only.

**Learning Outcomes**

1. Students will explain the physics principles associated with sonographic imaging.
2. Students will describe how physics principles modify the sonographic image.
3. Students will relate ultrasound physics to bio effects and best practices for safe sonographic imaging.

**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 College campuses only.

**Learning Outcomes**

1. Students will describe the sonographic signs of fetal anomalies.
2. Students will identify the risk factors for congenital anomalies to correlate with clinical history.
3. Students will describe the process for imaging multiple gestations.
4. Students will identify best practices for safe imaging in the high risk pregnancy.

**DMS 270. Clinical Practicum III**

**3 Credits (32P)**

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 College campuses only.

**Learning Outcomes**

1. Consistently demonstrate professional skills and etiquette in the clinical setting.
2. Perform basic and advanced sonographic procedures with minimal assistance from preceptors.

3. Perform complex sonographic procedures with guidance from preceptors.
4. Analyze clinical experiences to broaden patient care skills.

### **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 College campuses only.

#### **Learning Outcomes**

1. Students will demonstrate professional communication with patients and healthcare team members.
2. Students will perform basic and advanced sonographic procedures with minimal assistance from preceptors.
3. Students will perform complex sonographic procedures with guidance from preceptors.
4. Students will analyze clinical experiences to broaden patient care skills.

### **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 College campuses only.

#### **Learning Outcomes**

1. Students will describe the anatomy and physiology of small parts and superficial structures.
2. Students will identify normal anatomy, anatomical variants, and pathology on sonographic images of superficial structures.
3. Students will correlate sonographic appearances of pathologies with clinical history to develop diagnostic differentials of superficial structures.

### **DMS 290 L. Small Parts & Superficial Structures Lab**

#### **1 Credit (3P)**

Includes scanning of various small part exams and phantoms, including breast, thyroid, scrotal, non-cardiac chest, and musculoskeletal ultrasound exams. Includes targeted scanning exercises to enhance sonographic skills.

#### **Learning Outcomes**

1. Demonstrate proficiency in scanning breast and testicular phantoms.
2. Recognize and document sonographic anatomy of the thyroid and neck structures.
3. Demonstrate understanding of limited musculoskeletal sonographic examinations.
4. Complete targeted scan exercises in a variety of body systems.

### **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 College campuses only.

#### **Learning Outcomes**

1. Students will recall knowledge of normal anatomy, physiology, and pathology of obstetric and gynecological structures.
2. Students will evaluate sonographic images and patient history to identify likely pathologies.
3. Students will self-reflect on tested concepts to identify concepts that require further studying.

### **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 College campuses only.

#### **Learning Outcomes**

1. Students will recall knowledge of normal anatomy, physiology, and pathology of abdominal and superficial structures.
2. Students will evaluate sonographic images and patient history to identify likely pathologies.
3. Students will self-reflect on tested concepts to identify concepts that require further studying.

### **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.

#### **Learning Outcomes**

1. Identify and describe vascular anatomy.
2. Recognize vascular pathology based on sonographic images.
3. Describe hemodynamic changes associated with vascular pathology.
4. Demonstrate understanding of patient care, exam protocols, and department procedures.

### **DMS 294. Musculoskeletal Sonography I**

#### **3 Credits (3)**

Includes the anatomy, sectional anatomy, and normal physiology, and pathology of musculoskeletal joints; including the shoulder, elbow, wrist, and hand, as well as the sonographic appearance and protocols for scanning these exams.

#### **Learning Outcomes**

1. Students will describe the normal and pathological anatomy of upper extremity musculoskeletal joints.
2. Students will distinguish the sonographic appearance of upper extremity musculoskeletal structures.
3. Students will correlate clinical presentation of symptoms with upper extremity musculoskeletal pathologies.
4. Students will produce diagnostic-quality sonographic images of upper extremity musculoskeletal structures.

### **DMS 295. Musculoskeletal Sonography II**

#### **3 Credits (3)**

Includes the anatomy, sectional anatomy, and normal physiology, and pathology of musculoskeletal joints; including the hip, knee, calf, ankle, and foot, as well as the sonographic appearance and protocols for scanning these exams.

#### **Learning Outcomes**

1. Students will describe the normal and pathological anatomy of lower extremity musculoskeletal joints.



- Students will distinguish the sonographic appearance of lower extremity musculoskeletal structures.
- Students will correlate clinical presentation of symptoms with lower extremity musculoskeletal pathologies.
- Students will produce diagnostic-quality sonographic images of lower extremity musculoskeletal structures.

## 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

#### Learning Outcomes

- 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
- 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 1
- Develop good workplace skills and professional, productive work habits.

### 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. May be repeated up to 2 credits.

#### Learning Outcomes

- Analyze the parallels and distinctions between drafting and design within the Engineering and Architectural domains.
- Outline the attributes of linear, two-dimensional, and three-dimensional graphic portrayal.
- Sketch fundamental geometric shapes in linear, two-dimensional, and three-dimensional formats.
- Explain the characteristics of an Architectural and Engineering Scale.
- Apply appropriate Architectural or Engineering Scale to dimension drawings accurately.
- Identify and expound upon the following concepts: a) Plan view, b) Elevation view, c) Section view.

- Generate precise, readable, and meticulous drawings in Plan, Elevation, and Section views.

### 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. Crosslisted with: E T 109 and C E 109. May be repeated up to 3 credits.

#### Learning Outcomes

- Describe related career options/pathways.
- Explain and apply common drafting terms, concepts, and conventions.
- Utilize various AutoCAD commands and Coordinate Entry methods to produce accurate and precise Two-Dimensional drawings.
- Setup AutoCAD working environment, drawings, styles, and applicable settings.
- Navigate the AutoCAD user interface efficiently.
- Apply different drafting methods, strategies, and processes.
- Utilize AutoCAD to produce basic 2D CAD working drawings.
- Measure utilizing scales accurately.
- Create drawings with different scales and units. 1
- Plot drawings produced in AutoCAD at various scales and on various sheet sizes. 1
- Utilize the two Drawing Environments: Paper Space and Model Space. 1
- Manage AutoCAD drawing files.

### 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)

Introduction to 3D mechanical parametric solid modeling and basic assembly creation utilizing Autodesk Inventor as well as other applicable solid modeling software packages. Creation of 2D working drawings from 3D solid models and 3D models for machining/manufacturing purposes will be emphasized. Application of Geometric Dimensioning and Tolerancing (GD&T), material properties, and industry standard fastening and manufacturing practices methods will be introduced. Restricted to Community Colleges campuses only.

**Prerequisite:** A C- or better in DRFT 109.

#### Learning Outcomes

- Create 3D solid models.
- Read and interpret 2D technical drawings.
- Read and interpret 3D technical drawings.
- Define and sketch the standard, sectional, and auxiliary views of a given object.

5. Annotate working mechanical drawings following industry standards.
6. Dimension working mechanical drawings following industry standards.
7. Identify standard threads callouts.
8. Identify standard fasteners callouts.
9. Identify standard metal shapes and sizes. 1
10. Produce sheet and assembly drawings. 1
11. Manage Electronic files.

#### **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.

##### **Learning Outcomes**

1. Discuss the general history of OSHA.
2. Discuss the general history of the U.S. safety movement.
3. Utilize the OSHA web site as a basic safety resource.
4. Utilize the Call Before You Dig website as a basic safety resource.
5. Recognize construction site hazards.
6. Identify construction site hazards.
7. Avoid construction site hazards.
8. Follow proper basic first aid procedures in an emergency.
9. Avoid exposure to blood-borne pathogens in an emergency situation. 1
10. Interpret hazard communication. 1
11. Recognize proper lifting techniques. 1
12. Recognize personal protective equipment.

#### **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. Restricted to Community Colleges campuses only.

**Prerequisite/Corequisite:** DRFT 114.

##### **Learning Outcomes**

1. Analyze and interpret mechanical engineering drawings and associated information accurately.
2. Apply and utilize terminology related to Geometric Dimensioning and Tolerancing (GDT) effectively.
3. Interpret and explain dimensioning symbols used in engineering drawings, ensuring clear understanding of their representation and significance.
4. Interpret and explain GDT modifiers and symbols, comprehending their purpose and impact on the design and manufacturing process.
5. Apply GDT rules and concepts to engineering drawings, ensuring adherence to industry standards and specifications.
6. Apply datum system concepts appropriately, understanding their role in establishing reference points for dimensional control.
7. Explain the characteristics and key features of different types of tolerances, such as bilateral, unilateral, and geometric tolerances, comprehending their implications on part functionality and manufacturing processes.

#### **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.

##### **Learning Outcomes**

1. Navigate, interpret, and apply Codes as necessary to meet different agency or governmental entities' requirements for their approval.
2. Develop critical thinking strategies to develop a preliminary design and plan to check for code compliance.
3. Classify occupancy classification of buildings and structures.
4. Determine "Location on Property" requirements of buildings and structures.
5. Classify occupant loads of buildings and structures.
6. Calculate exit requirements of buildings and structures.
7. Determine fire rating of building elements.
8. Define specific construction requirements based on types of construction and materials.
9. Determine the number of plumbing fixture counts based on occupancy group and occupant load. 1
10. Determine accessibility requirements of buildings and structures.

#### **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. Restricted to Community Colleges only. Taught with E T 143 and SUR 143.

**Prerequisite:** DRFT 109.

##### **Learning Outcomes**

1. Use appropriate drafting/technical terminology.
2. Identify of the different types of Civil Engineering work drawing plan sets.
3. Understanding and the use of the terminologies used in the industry.
4. Use AutoCAD Civil 3D.
5. Enter appropriate data into AutoCAD software in order to retrieve necessary outcomes.
6. Plot/Print different types of civil engineering working plans.
7. Read, interpret and understand engineering drawings.
8. Define and understand the different types of engineering drawings.

#### **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.

##### **Learning Outcomes**

1. Read, Interpret, and Reference Construction Working Drawings and Construction Specifications.
2. Perform basic sketches related to construction details, plans, etc.

3. Apply standard working drawing/drafting practices including appropriate scale, units, linetypes, text, dimensions, etc.
4. Differentiate among the various construction/design disciplines including Civil/Survey, Structural, Architectural, Mechanical, Plumbing, Electrical, etc.
5. Know the basic principles related to the following processes: Construction Document Development, Bidding, Permitting, and Construction.
6. Identify common construction materials and quality control practices associated with the various construction disciplines listed above.
7. Know basic construction methods associated with the various construction disciplines listed above.
8. Conduct safe construction observations for the sole purpose of documenting construction materials, methods, and progress.
9. Utilize proper, technical construction terminology. 1
10. Conduct material research, and utilize the organization standards of the Construction Specifications Institute. 1
11. Document construction phases by visiting construction sites and developing a digital, construction project portfolio.

### **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. Taught with SUR 143. Restricted to: Community Colleges only.

**Prerequisite:** DRFT 109.

#### **Learning Outcomes**

1. Use appropriate drafting/technical terminology.
2. Identify different types of survey work drawings.
3. Understand and use terminologies used in the industry.
4. Use AutoCAD Civil 3D.
5. Enter appropriate data into AutoCAD software in order to retrieve necessary outcomes.
6. Plot/Print different types of civil engineering working plans
7. Read, interpret and understand surveying drawings.

### **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. I. Prepare accurate written technical documents,
2. Produce drawing documents that are technically sound,
3. Develop and practice productive work skills, and
4. 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,
5. Interpret local design standards, applicable codes, and industry practices,
6. Apply local design standards,
7. Apply applicable codes,
8. Follow standards industry practices,
9. Design applicable details within given parameters, and

10. 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 Solidworks as well as other applicable parametric modeling software packages. Creation of 2D working drawings from 3D solid models, 3D models for machining/manufacturing, and assemblies will be emphasized. Geometric Dimensioning and Tolerancing (GD&T), material properties, and industry standard fastening and manufacturing practices and methods will be further explored. Restricted to Community Colleges campuses only.

**Prerequisite/Corequisite:** DRFT 114.

#### **Learning Outcomes**

1. Recognize standard views of a given object.
2. Recognize auxiliary views of a given object.
3. Dimension working mechanical drawings following appropriate industry standards.
4. Produce sectional views of a given object.
5. Apply Geometric Dimensioning and Tolerancing (GDT) practices and standards to working drawings.
6. Identify standard thread and fastener callouts.
7. Apply standard thread and fastener specifications.
8. Create 3D solid models.
9. Produce sheet and assembly drawings. 1
10. Manage Electronic files.

### **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.

#### **Learning Outcomes**

1. Demonstrate proficiency in creating comprehensive 3D architectural project models using Revit Architecture, through guided tutorials and independent work.
2. Transform architectural project models into functional working drawings, ensuring accurate representation of design elements and documentation standards.
3. Develop a solid understanding of the essential tools and features commonly used in Revit Architecture, enabling efficient and effective modeling and documentation.
4. Cultivate project file management skills, including organizing, naming, and version control, to maintain a structured and easily navigable digital workspace.

### **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:** A C- or better in DRFT 109.

**Learning Outcomes**

1. Establish AutoCAD drawings for Architectural projects, ensuring appropriate settings, units, and templates are utilized.
2. Apply relevant building codes to residential drafting projects, ensuring compliance with safety and regulatory requirements.
3. Apply design standards specific to residential drafting projects, incorporating principles of functionality, aesthetics, and spatial planning.
4. Generate a comprehensive residential floor plan working drawing, accurately representing the layout and dimensions of interior spaces.
5. Produce residential foundation plan working drawings, depicting the structural elements and dimensions of the foundation system for a residential project.
6. Create a detailed residential wall section working drawing, illustrating the construction and composition of walls in a residential structure.
7. Develop residential exterior elevation working drawings, showcasing the external appearance, materials, and architectural features of a residential building.
8. Generate a residential interior elevation working drawing, highlighting the vertical surfaces, materials, and design elements within the interior spaces of a residential project.
9. Produce a residential site plan working drawing, depicting the placement of buildings, landscape features, and utilities within the property boundaries. 1
10. Coordinate details and references consistently throughout a set of residential working drawings, ensuring accuracy and clarity in the documentation. 1
11. Set drawings to scale, including the layout of multiple scaled drawings on one sheet, allowing for efficient presentation and communication of design information.

**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. Restricted to Community Colleges campuses.

**Prerequisite:** DRFT 109.

**Learning Outcomes**

1. Setup AutoCAD drawings for architectural projects.
2. Apply building code to residential drafting projects.
3. Apply design standards to residential drafting projects.
4. Produce a residential floor plan working drawing.
5. Produce residential foundation plan working drawings.
6. Produce a residential wall section working drawing.
7. Produce residential exterior elevation working drawings.
8. Produce a residential interior elevation working drawing.
9. Produce a residential site plan working drawing. 1
10. Coordinate details and referencing throughout a set of residential working drawings. 1
11. Set drawings to scale, including multiple scaled drawing on one sheet layout.

**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. May be repeated up to 2 credits.

**Learning Outcomes**

1. Develop an understanding of utilizing online tools for effective self-promotion in professional contexts.
2. Gather relevant documents to enhance employability, including resumes, cover letters, and supporting materials.
3. Create a comprehensive portfolio that encompasses a print-ready resume, video resume, and well-crafted cover letter.
4. Demonstrate the ability to set realistic and meaningful professional and personal goals, aligning them with career aspirations.
5. Exhibit positive interview techniques, showcasing effective communication skills, professionalism, and confidence.
6. Display a thorough comprehension of workplace ethics, including principles of integrity, accountability, and respect.
7. Evaluate personal performance as an employee, analyzing strengths, areas for improvement, and opportunities for growth.

**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.

**Learning Outcomes**

1. Present projects and critiques using visual, oral, and written communication skills.
2. Prepare written technical documents use appropriate drafting/technical terminology.
3. Produce documents that are technically sound.
4. Analyze information to develop solutions to technical aspects of a problem/situation.
5. Upgrade knowledge and skills to keep pace with real-world changes.
6. Produce projects that respect the intellectual property of others.
7. Participate in activities of professional organization and community service.
8. Demonstrate professionalism with regard to attendance, punctuality and contribution to course.
9. Demonstrate professional demeanor. 1
10. Practice productive work skills. 1
11. Create an employment portfolio.

**DRFT 214. Advanced Solid Modeling****3 Credits (2+2P)**

Advanced 3D mechanical parametric solid modeling and assembly creation utilizing Inventor, Solidworks, and/or other applicable solid modeling and parametric modeling software packages. Creation of complete working drawing sets and/or sheet sets, PDF documents, and assembly drawings will be emphasized. Developing and designing parts and assemblies to meet client needs will be introduced and explored. Restricted to Community Colleges campuses only.

**Prerequisite/Corequisite:** DRFT 114.

**Learning Outcomes**

1. Recognize standard views of a given object.
2. Recognize auxiliary views of a given object.
3. Evaluate shop drawings and hand drawings.
4. Create PDFs and Three-Dimensional PDFs from Three-Dimensional models and assemblies.

5. Dimension working mechanical drawings following appropriate industry standards.
6. Produce sectional views of a given object.
7. Apply Geometric Dimensioning and Tolerancing (GDT) practices and standards to working drawings.
8. Identify standard thread and fastener callouts.
9. Apply standard thread and fastener specifications. 1
10. Produce assembly drawings. 1
11. Produce working drawing sets and/or sheet sets. 1
12. Interpret client needs/instructions.

### **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:** DRFT 180 or DRFT 181.

#### **Learning Outcomes**

1. Differentiate between three phases of electrical installation: temporary, rough-in, and finish.
2. Define basic electrical terms.
3. Cite basic rules of electrical circuit design.
4. Specify methods of wiring a home with energy conservation techniques.
5. Draft basic electrical symbols, including switches, duplex receptacle outlets, ceiling and wall-mounted lights, and circuit lines.
6. Identify basic service specification requirements, including service capacity, service entrance, meter base, and distribution panel locations.
7. Create and utilize symbols legends and schedules used in preparing electrical plans.
8. Identify plumbing fixtures and materials typically included in residential and commercial plans.
9. Cite sizing standards of plumbing piping. 1
10. Specify methods to conserve energy in the plumbing installation. 1
11. Draft plumbing lines and symbols with proper line weights and abbreviations. 1
12. Describe drainage and vent systems. 1
13. Differentiate between public and private sewage disposal systems, and identify basic component of each system. 1
14. Create and utilize symbols legends and schedules used in preparing plumbing plans. 1
15. Identify code requirements related to heating and cooling equipment and duct systems. 1
16. Explain how differing heating and cooling systems work. 1

17. Contrast zonal and central heating systems and list the advantages and disadvantages of each. 1
18. List the code requirements for HVAC systems. 1
19. Define basic HVAC terminology and identify basic HVAC symbols. 2
20. Describe how schedules are used in HVAC drawings, and cite the kind of information included in schedules. 2
21. Create and utilize symbols legends and schedules used in preparing HVAC plans.

### **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.

**Prerequisite/Corequisite:** DRFT 180 or DRFT 181. Restricted to Community Colleges campuses only.

#### **Learning Outcomes**

1. Have a basic understanding of Structural Systems.
2. Have a knowledge of the different types of materials used in Structural Design.
3. Understand the complete lifecycle of a project as it pertains the Structural Systems.
4. Be able to take basic hand sketches and turn them into usable construction documents.
5. Project File management skills.

### **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. Restricted to Community Colleges campuses only.

**Prerequisite:** DRFT 143.

#### **Learning Outcomes**

1. Become familiar with industry terminology.
2. Utilize file management.
3. Configure AutoCAD for the civil drafting environment.
4. Recognize and utilize line types associated with Civil Drafting.
5. Create a standardized layering system for duplication of drawings.
6. Understand industry standards and conventions for roadway development.
7. Utilize design standards in the creation of roadway development drawings.
8. Generate roadway alignments.
9. Generate existing ground profiles. 1
10. Generate proposed finish ground roadway profiles while adhering to design standards. 1
11. Create utility plans that incorporate main lines, service lines, and all associated fittings. 1
12. Understand utility terminology and standards. 1
13. Determine flow line, BOC elevations, etc. 1
14. Understand the concepts of super elevated roadways roadway transitions. 1
15. Generate finish grade surfaces.

**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.

**Learning Outcomes**

1. Use appropriate drafting/technical terminology.
2. Produce documents that are technically sound.
3. Analyze information to develop solutions to technical aspects of a problem/situation.
4. Upgrade knowledge and skills to keep pace with real-world changes.
5. Demonstrate professionalism.
6. Practice productive work skills.
7. Read engineering drawings.
8. Produce complex engineering drawings.
9. Read and interpret design standards related to land development and subdivision design. 1
10. Plot or print to industry size sheets of paper.

**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.

**Prerequisite/Corequisite:** DRFT 180 or DRFT 181. Restricted to Community Colleges campuses only.

**Learning Outcomes**

1. Experience producing the various types of detailed working drawings and related information for Civil, Residential Commercial Projects.
2. Industry Standards: Architectural Graphic Standards, National CAD Standards, Building, and Land Development Codes, etc.
3. Internet Research methods for construction materials/methods, construction documents, CAD details, etc.
4. Architectural design process, including programming, schematic design documents, design development documents, and construction documents.
5. Sustainability and LEED in architecture.
6. AutoCAD software for 2-D Drafting.
7. Revit software for Building Information Modeling (BIM).
8. Accuracy, legibility, neatness, and professional appearance of drawings.
9. Drafting skills and speed. 1
10. Work ethics, professionalism, and productive work habits. 1
11. Teamwork and presentations.

**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. Restricted to Community Colleges campuses only.

**Prerequisite:** DRFT 204.

**Learning Outcomes**

1. Present projects and critiques using visual, oral, and written communication skills.
2. Prepare written technical documents use appropriate drafting/ technical terminology.
3. Produce documents that are technically sound.
4. Analyze information to develop solutions to technical aspects of a problem/situation.
5. Upgrade knowledge and skills to keep pace with real-world changes.
6. Produce projects that respect the intellectual property of others.
7. Participate in activities of professional organization and community service.
8. Demonstrate professionalism with regard to attendance, punctuality and contribution to course.
9. Demonstrate professional demeanor. 1
10. Practice productive work skills. 1
11. Create an employment portfolio.

**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 Infracworks****3 Credits (2+2P)**

Introduction to the utilization of Infracworks 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,
2. Produce drawing documents that are technically sound,
3. Develop and practice productive work skills, and
4. Upgrade technical knowledge and skills to keep pace with real-world changes DRFT 253 Course Competencies I. Navigate within a 3D drawing/modeling space,
5. Connect drawings to data sources,
6. Stylize data sources,
7. Create models elements,
8. Analyze models,
9. Collaborate on a project with others,
10. Communicate design, and
11. Develop good workplace skills and professional, productive work habits.

**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:** DRFT 165.

**Learning Outcomes**

1. Create full 3D Structural project model by “converting” Revit Architectural model.
2. Perform advanced Revit tasks including Family Editing Creation, Phasing, and Work-sharing.
3. Have a working knowledge of the tools that the majority of users will use to work with Revit and Navisworks.
4. Perform basic Navisworks tasks including Clash Detection and Timeliner.
5. Improve Project File management skills in particular.
6. Improve efficiency in use of Revit.

**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 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. Consent of Instructor. Restricted to Community Colleges campuses only.

**Learning Outcomes**

1. Produce a professional quality portfolio.
2. Produce working drawings (if required).
3. Prepare a professional resume.
4. Prepare for a job interview.
5. Conduct a job search.
6. Work independently.
7. Practice professional networking skills.

**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.
2. 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.
3. Perform simple parameter estimation, such as finding sample mean and variance, and relate to confidence intervals.
4. Describe random processes in the context of signal processing and communications systems problems.
5. 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
2. 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. Develop a basic understanding of all programs in the Engineering Technology and Surveying Engineering Department.
2. Create a solid curriculum plan for their degree program.
3. Describe the Engineering Design Process.
4. Define and visit campus support programs and student engineering programs.

- Describe and discuss communication skills in the engineering profession.

#### **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 (2+2P)**

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

##### **Learning Outcomes**

- Describe related career options/pathways.
- Explain and apply common drafting terms, concepts, and conventions.
- Utilize various AutoCAD commands and Coordinate Entry methods to produce accurate and precise Two-Dimensional drawings.
- Setup AutoCAD working environment, drawings, styles, and applicable settings.
- Navigate the AutoCAD user interface efficiently.
- Apply different drafting methods, strategies, and processes.
- Utilize AutoCAD to produce basic 2D CAD working drawings.
- Measure utilizing scales accurately.
- Create drawings with different scales and units. 1
- Plot drawings produced in AutoCAD at various scales and on various sheet sizes. 1
- Utilize the two Drawing Environments: Paper Space and Model Space. 1
- Manage AutoCAD drawing files.

#### **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 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. Restricted to Community Colleges only. Taught with DRFT 143 and SUR 143.

**Prerequisite:** DRFT 109.

##### **Learning Outcomes**

- Use appropriate drafting/technical terminology.
- Identify of the different types of Civil Engineering work drawing plan sets.
- Understanding and the use of the terminologies used in the industry.

- Use AutoCAD Civil 3D.

- Enter appropriate data into AutoCAD software in order to retrieve necessary outcomes.
- Plot/Print different types of civil engineering working plans.
- Read, interpret and understand engineering drawings.
- Define and understand the different types of engineering drawings.

#### **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**

- 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. May be repeated up to 3 credits.

##### **Learning Outcomes**

- Students will develop a basic knowledge of AutoCad Civil Three-Dimensional software as they relate to the civil drafting process.
- Students will become familiar with a basic understanding of computers, drafting, and trigonometry as 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 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 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.

**Learning Outcomes**

1. Properly deploy the Windows OS.
2. Manage Windows OS data and devices.
3. Apply network and connection configurations.
4. Provide Windows OS maintenance.

**E T 182. Introduction to Digital Logic****2 Credits (1.5+1.5P)**

An introduction to logic design and the basic building blocks of digital systems. Topics include numbering systems, Boolean algebra, digital logic theory, combinational logic, and applications such as adders.

Includes hands-on laboratory

**Prerequisite:** A grade of C- or better in MATH 1220G or higher.

**Learning Outcomes**

1. Demonstrate ability to convert numerical values to commonly-used digital representations and their use for arithmetic and logical functions.
2. Demonstrate understanding of Boolean logic functions and truth tables.
3. Demonstrate ability to simplify logic expressions.
4. Demonstrate understanding of combinational logic functions, and the ability to build digital circuits using breadboards.

**E T 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.

**E T 183 L. Applied DC Circuits Lab****1 Credit (2P)**

DC applied circuits lab.

**Corequisite(s):** E T 183.

**E T 184. Applied AC Circuits****2-3 Credits (1-2+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:** A grade of C- or better in ENGR 120.

**Learning Outcomes**

1. Analyze and design AC circuits, including ideal op-amps, using concepts of voltage, current, power, Kirchhoff's laws, and network theorems.
2. Design simple systems involving AC circuits.

**E T 190. Applied Circuits****4 Credits (3+2P)**

Application of Ohm's law, Kirchhoff's laws, and Thevenin's theorems to the analysis of AC and DC passive circuits. Electronic circuit topics are introduced. Embedded lab. May be repeated up to 4 credits.

**Prerequisite/Corequisite:** MATH 1250G or higher.

**Learning Outcomes**

1. Analyze and design DC and AC circuits, including ideal op-amps, using concepts of voltage, current, power, Kirchhoff's laws, and network theorems.
2. Design simple systems involving DC and AC circuits.

**E T 191. Applied Circuits Laboratory****1 Credit (2P)**

Applied Circuits Lab

**E T 200. Special Topics****1-3 Credits**

Directed study or project. May be repeated for a maximum of 6 credits.

**Prerequisite:** consent of department head.

**E T 210. Advanced 3-D Modeling (Solid Works)****3 Credits (3)**

Advanced 3-D modeling techniques to prepare for the Certification of SolidWorks Associate (CSWA) exam.

**Prerequisite:** A grade of C- or better in ENGR 110.

**Learning Outcomes**

1. Properly operate a CAD system in the most efficient manner.
2. Generate and easily update Part models.
3. Ability to create complex assembly models.
4. Create usable production drawings from Three-Dimensional CAD models.
5. Understand the basic fundamentals of available add-in software compatible with SolidWorks (FEA, CAM, PDM).
6. Work in a group and operate effectively on a team.
7. Use creative and technical thinking skills in design.

**E T 217. Manufacturing Processes****3 Credits (2+3P)**

Introduction to manufacturing and processing, including: casting, forming, and machining. Emphasis on creating products with the appropriate techniques. Crosslisted with: I E 217.

**Prerequisite(s):** A grade of C- or better in either E T 110 or ENGR 110 and C- or better in MATH 1220G.

**Learning Outcomes**

1. Identify the different manufacturing processes and their applications.
2. Use, set up, and calibrate measuring tools.
3. Apply geometric tolerances to engineering drawings.
4. Demonstrate basic knowledge of materials and material properties.
5. Demonstrate basic knowledge of GM codes and their application.
6. Proficiently use CAM packages such as SolidWorks CAM.
7. Identify different tooling, their use, and manufacturing application.

**E T 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

**E T 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.

#### **E T 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.

#### **E T 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:** A grade of C- or better in either E T 240 or ENGR 233.

**Prerequisite/Corequisite:** (MATH 1440 or MATH 1521G or MATH 1521H).

##### **Learning Outcomes**

1. Various

#### **E T 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:** A grade of C- or better in one of the following: E T 190 or E T 183 or ENGR 120.

**Prerequisite/Corequisite:** E T 184 or ENGR 230.

##### **Learning Outcomes**

1. Describe semiconductor devices and their properties.
2. Apply the characteristics of diodes to analyze diode rectifier and regulator circuits.
3. Apply the characteristics of bipolar junction transistors (BJTs) to analyze BJT amplifier circuits.
4. Apply the characteristics of metal-oxide-semiconductor field-effect transistors (MOSFETs) to analyze MOSFET amplifier circuits.
5. Describe and analyze complementary MOS (CMOS) digital circuits.
6. Learn to solder and layout printed-circuit boards (PCBs).
7. Design, simulate, and test diode and transistor-amplifier circuits.

#### **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.
2. Use the Linux filesystem.
3. Install, administer, and manage a Linux system.
4. Utilize Linux user/group management.
5. Install software packages.
6. 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. May be repeated up to 3 credits.

##### **Learning Outcomes**

1. Define the fundamentals of aggregates and their use in construction including concrete and asphalt.
2. Define the types of concrete and their uses.
3. Prepare and test concrete mix designs.
4. Executing tests for AASHTO Certification.

#### **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.
2. Plan the Linux Filesystem to match system requirements.
3. Design BASH scripts to optimize common Linux operations.
4. Interpret Linux performance data to solve hardware and software issues.
5. Students will demonstrate the Core Linux System Administration.
6. Students will be able to link the use of shell commands to managing Linux server daemons and software.
7. Students will apply these concepts to build application servers running Linux, Apache, MySQL, and PHP (LAMP); Tomcat, CUPS print servers; and create backup solutions.
8. Students will apply problem analysis, object-oriented structured logic, and development concepts.
9. 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 262. 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
2. Analyze existing code
3. Employ effective use of basic programming and basic troubleshooting
4. Write, debug and test code given software requirements
5. Apply testing and documentation best practices
6. 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:** A grade of C- or better in E T 246.

#### **Learning Outcomes**

1. Design ideal operational amplifier (opamp) circuits.
2. Determine the frequency response of BJT and MOSFET amplifier circuits.
3. Predict the impact of non-ideal properties of opamps on opamp circuits.
4. Design opamp integrator and differentiator circuits.
5. Implement electronic wave-generating and wave-shaping circuits.
6. Solder and layout surface-mount printed-circuit boards (PCBs).
7. Simulate and test opamp and transistor-amplifier circuits.

#### **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.
2. Explain the benefits of cloud virtualization and cloud computing.
3. Explain the purpose of network segmentation and describe how VLANs work and how they are used.
4. Identify basic concepts of network risk management and configure devices for increased security.
5. Identify network design security features and discuss options in network access control.
6. Use tools to evaluate network performance and discuss best practices for incident response and disaster recovery.
7. 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 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**

1. Create multiple frontend development micro-components.
2. Create single and multi-page websites.
3. Use flexbox, grid, and media queries and different design patterns.
4. Employ effective use of web development and basic troubleshooting.
5. Build small web site projects.

#### **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.

#### **E T 283. Hardware PC Maintenance**

##### **3 Credits (3+1P)**

Installing, configuring, troubleshooting, and maintaining personal computer hardware components.

**Prerequisite(s):** E T 120 or E T 122.

#### **E T 284. Software PC Maintenance**

##### **3 Credits (3+1P)**

Installing, configuring, troubleshooting, and maintaining personal computer operating systems.

**Prerequisite(s):** E T 120 or E T 122.

#### **E T 285. Advanced Information Security**

##### **3 Credits (3)**

The course covers detailed analysis of network security, including security operations and policy adherence; internal and external vulnerabilities; methods of identifying, controlling and managing system access, and the protection of system information.

**Prerequisite(s)/Corequisite(s):** E T 283. Prerequisite(s): E T 156.

#### **E T 286. Information Security Certification Preparation**

##### **4 Credits (4)**

The course covers the examination objectives and detailed preparation for a certification in information security.

**Prerequisite(s):** E T 285.

#### **E T 291. PC Forensics and Investigation**

##### **3 Credits (3)**

Introduction to computer forensics and investigative fundamentals. Topics include understanding computer forensic and investigation law and requirements, processing crime and incident scenes, and the extraction, preservation, analysis and presentation of computer-related evidence.

**Prerequisite(s):** E T 120 or E T 122.

## **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. May be repeated up to 3 credits.

#### **Learning Outcomes**

1. Incorporate understanding of developmental stages, processes, and theories of growth, development, and learning into developmentally appropriate practice. A.one
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.two
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.three

5. Demonstrate knowledge of the similarities between children who are developing typically and those with diverse abilities. A.four
6. Demonstrate knowledge of the many functions that language serves in the cognitive, social, and emotional aspects of development in the formative years. A.seven
7. Demonstrate knowledge of the developmental sequence of language and literacy, including the influence of culture and home factors. A.eight
8. Demonstrate knowledge of how children acquire and use verbal, non-verbal, and alternative means of communication. A.nine
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.ten 1
10. Use appropriate guidance to support the development of self-regulatory capacities in young children. A.eleven

### **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. May be repeated up to 2 credits.

#### **Learning Outcomes**

1. Recognize and respond to each child's physical health, intellectual and emotional well-being, and nutritional and safety needs. B.one
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.two
3. Use appropriate health appraisal and management procedures and makes referrals when necessary. B.three
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.four
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.five
6. Provide a consistent daily schedule for rest/sleep, as developmentally appropriate. B.six
7. Implement health care and educational activities for children and families based on health and a.nutritional information that is responsive to diverse cultures. B.seven
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.eight

### **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. May be repeated up to 3 credits.

#### **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.six
2. Demonstrate knowledge of the many functions that language serves in the cognitive, social, and emotional aspects of development in the formative years. A.seven
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.ten
4. Use appropriate guidance to support the development of self-regulatory capacities in young children. A.eleven
5. Recognize and respond to each child's physical health, intellectual and emotional well-being, and nutritional and safety needs. B.one
6. Demonstrate knowledge and skill in building positive, reciprocal relationships with families. C.one
7. Demonstrate knowledge of and respect for variations across cultures, in terms of family strengths, expectations, values, and child-rearing practices. C.four
8. Demonstrate the ability to incorporate the families' desires and goals for their children into classroom or intervention strategies. C.seven
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.three 1
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.seven 1
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. May be repeated up to 3 credits.

**Prerequisite:** 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.one

2. Demonstrate knowledge of maintaining appropriate records of children's development and behavior that safeguard confidentiality and privacy. F.two
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.three
4. Demonstrate understanding of the influences of environmental factors, cultural/linguistic differences, and diverse ways of learning on assessment outcomes. F.four
5. 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.five
6. Articulate an understanding of the distinctions and definitions of assessment concepts (e.g., screening, diagnostic assessment, standardized, testing, accountability assessment). F.six
7. 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.seven
8. 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.eight
9. Demonstrate knowledge of assessment techniques, interpretation of assessment information in the Application of this data to curriculum development and/or intervention planning. F.nine 1
10. Demonstrate knowledge of a variety of techniques and procedures to evaluate and modify program goals for young children and their families. F.ten 1
11. Demonstrate knowledge and use of program evaluation to ensure comprehensive quality of the total Environment for children, families, and the community. F.eleven 1
12. Use both self and collaborative evaluations as part of ongoing program evaluations. F.twelve
6. Demonstrate understanding of the importance of families as the primary educator of their child. C.six
7. Involve families and community members in contributing to the learning environment. C.nine
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.eleven
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.twelve 1
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.thirteen 1
11. Demonstrate effective written and oral communication skills when working with children, families, and early care, education, and family support professionals. E.fourteen 1
12. Demonstrate a commitment to leadership and advocacy for excellence in programs and services for young children and their families. G.six

#### **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. May be repeated up to 2 credits.

##### **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.four
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.eleven
3. Use both self and collaborative evaluations as part of ongoing program evaluations. F.twelve
4. Demonstrate ability to adhere to early childhood professional codes of ethical conduct and issues of confidentiality. G.one
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.two
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.three
7. Demonstrate critical reflection of one's own professional and educational practices from community, state, national, and global perspectives. G.four
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.five

#### **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 establish collaborative relationships with families in early childhood settings is discussed. Families' goals and desires for their children will be supported through culturally responsive strategies. May be repeated up to 3 credits.

**Prerequisite:** 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.one
2. Articulate an understanding of a safe and welcoming environment for families and community members. C.two
3. Develop and maintain ongoing contact with families through a variety of communication strategies. C.three
4. Demonstrate knowledge of and respect for variations across cultures, in terms of family strengths, expectations, values, and child-rearing practices. C.four
5. Articulate understanding of the complexity and dynamics of family systems. C.five

- Demonstrate knowledge in technology resources to engage in ongoing professional development. G.seven

**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. May be repeated up to 3 credits.

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

**Learning Outcomes**

- Demonstrate knowledge of the many functions that language serves in the cognitive, social, and emotional aspects of development in the formative years. A.seven
- Demonstrate knowledge of the developmental sequence of language and literacy, including the influence of culture and home factors. A.eight
- Demonstrate knowledge of how children acquire and use verbal, non-verbal, and alternative means of communication. A.nine
- Develop partnerships with family members to promote early literacy in the home. C.eight
- Establish partnerships with community members in promoting literacy. C.ten
- Demonstrate knowledge of the reading and writing components of emergent literacy at each developmental level. D.four
- Provide and use anti-bias materials/literature and experiences in all content areas of the curriculum. D.seven
- Create and manage a literacy-rich environment that is responsive to each child's unique path of development. E.nine
- Use a variety of strategies during adult-child and child-child interactions and facilitate communication and dialogue of expressive language and thought. E.ten 1
- Demonstrate a variety of developmentally appropriate instructional strategies that facilitate the development of literacy skills. E.eleven

**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. May be repeated up to 3 credits.

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

**Corequisite:** ECED 2121.

**Learning Outcomes**

- Use appropriate guidance to support the development of self-regulatory capacities in young children. A.eleven
- 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 years of age. D.one
- 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.two
- 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.six
- Demonstrate knowledge of varying program models and learning environments that meet the individual needs of all young children, including those with diverse abilities. E.one
- 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.two
- 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.four
- Demonstrate understanding that each child's creative expression is unique and can be encouraged through diverse ways, including creative play. E.five
- Plan blocks of uninterrupted time for children to persist at self-chosen activities, both indoors and outdoors. E.six 1
- 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.seven 1
- 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.eight 1
- Demonstrate a variety of developmentally appropriate instructional strategies that facilitate the development of emergent literacy skills. E.eleven 1
- Demonstrate knowledge of assessment techniques, interpretation of assessment information in the application of this data to curriculum development of intervention planning. F.

**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. May be repeated up to 2 credits.

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

**Corequisite:** 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.five
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.five
3. Provides and uses anti-bias materials and literature, and experiences in all content areas of the curriculum. D.seven
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.four
5. Demonstrate understanding that each child's creative expression is unique and can be encouraged through diverse ways, including creative play. E.five
6. Plan blocks of uninterrupted time for children to persist at self-chosen activities, both indoors and outdoors. E.six
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.seven
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.eight
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.Six
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.One
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.Two
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.Four
9. Demonstrate understanding that each child's creative expression is unique and can be encouraged through diverse ways, including creative play. E.Five 1
10. Plan blocks of uninterrupted time for children to persist at self-chosen activities, both indoors and outdoors. E.Six 1
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.Seven 1
12. Demonstrate knowledge of developmentally appropriate uses of technology, including assistive technology. E.Twelve 1
13. Demonstrate knowledge of assessment techniques, interpretation of assessment information in the application of this data to curriculum development of intervention planning. F.Nine

#### **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. May be repeated up to 3 credits.

**Prerequisite:** ECED 1110, ECED 2120 and ECED 2121 (ENGL 1110G or ENGL 1110H or ENGL 1110M).

**Corequisite:** ECED 2131.

#### **Learning Outcomes**

1. Use appropriate guidance to support the development of self-regulatory capacities in young children. A.Eleven
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.Two
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.Three
4. Demonstrate knowledge of the language, reading and writing components of emergent literacy at each developmental level. D.Four

#### **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. May be repeated up to 2 credits.

**Prerequisite:** ECED 1110 (ENGL 1110G or ENGL 1110H or ENGL 1110M), ECED 2120, and ECED 2121.

**Corequisite:** ECED 2130.

#### **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.Five
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.Five
3. Provides and uses anti-bias materials and literature, and experiences in all content areas of the curriculum. D.Seven
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.Four

5. Demonstrate understanding that each child's creative expression is unique and can be encouraged through diverse ways, including creative play. E.Five
6. Plan blocks of uninterrupted time for children to persist at self-chosen activities, both indoors and outdoors. E.Six
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.Seven
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.Eight

#### **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. May be repeated up to 3 credits.

##### **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. May be repeated up to 2 credits.

**Corequisite:** 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. May be repeated up to 3 credits.

##### **Learning Outcomes**

1. Develop a comprehensive program philosophy.
2. Demonstrate the ability to develop systems that are effective for quality program operation.
3. Create a program budget and understand the Income and Expense sides and what affects each part.
4. Model best practices that integrate various leadership styles.

#### **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. May be repeated up to 3 credits.

**Corequisite:** 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 technologies which may be used in an early childhood setting.
4. 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 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.

### ECON 2120H. Principles of Microeconomics Honors

#### 3 Credits (3)

Microeconomic theory and public policy: supply and demand, theory of the firm, market allocation of resources, income distribution, competition and monopoly, governmental regulation of businesses and unions. Must be a Crimson Scholar.

**Prerequisite(s):** MATH 1220G.

**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.

**Prerequisite:** ENGL 1110G.

**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. May be repeated up to 1 credit.

**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- The bilingual teacher: (a) Recognizes the importance of parental and community involvement for

facilitating the learner's successful integration to his/her school environment. (b) Demonstrates knowledge of the teaching and learning patterns of the students' home environment and incorporates these into the instructional areas of program.

4. Assessment- The bilingual teacher: (a) Assesses oral and written language proficiency in academic areas in both languages utilizing the results for instructional placement, prescription, and evaluation. (b) Evaluates the growth of the learner's native and second language in the context of the curriculum. (c) 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. May be repeated up to 2 credits.

**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. May be repeated up to 3 credits.

**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. May be repeated up to 3 credits.

**Prerequisite:** 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.

- Students will demonstrate understanding of recent research in methods of teaching mathematics.
- Students will demonstrate understanding of early childhood theories as they relate to the teaching of mathematics.
- 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**

- Articulate the attributes of an education professional entering the field.
- Differentiate and summarize the major educational philosophies and historical events that have influenced the progression of educational practice.
- Describe the role of law in education with emphasis on the rights and responsibilities of teachers and learners.
- Develop a preliminary personal philosophy of teaching and learning.
- Discuss the characteristics and roles of the teacher, the student, and the school in today's education.
- Identify effective teaching methods, instructional strategies and learning styles.
- Evaluate the Lesson Planning Process using various lesson planning templates, formats, and rubrics.
- Explain classroom management techniques.
- Identify different types of diversity in the classroom environment, particularly in high-needs schools. 1
- Describe how learning differences are manifested in schools, particularly in high-needs schools. 1
- Describe how teachers use multiple methods of assessment to engage learners in their own growth, to monitor learner progress. 1
- Describe how teachers use multiple methods of assessment to modify instruction and inform decision making. 1
- Identify the role of Standards and High Stakes Testing in the life of an educational professional. 1
- Complete 24 hours internship in a classroom, preferably a bilingual classroom in a high-needs school. 1
- Document and reflect on your observations throughout your internship. 1
- 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. May be repeated up to 1 credit.

**Learning Outcomes**

- Demonstrate an understanding of personal attitudes and motivations for entering the field of education.
- Identify effective teaching strategies that enhance student learning outcomes.
- Identify classroom management techniques and learning styles.
- Develop observational skills and reflective thinking skills.

- 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 up to 9 credits.

**Learning Outcomes**

- Varies

**EDUC 1998. Internship I**

**3 Credits (3)**

Supervised experience in elementary education settings. May be repeated up to 3 credits.

**Learning Outcomes**

- 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. May be repeated up to 6 credits.

**Learning Outcomes**

- Investigate the process and requirements of the Teacher Education Program
- Read critically about teacher's experiences and write brief reactions
- Discuss philosophies of education and draft a written personal philosophy of education
- Discuss the nature of education for students with diverse languages, cultures and abilities
- 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. May be repeated up to 3 credits.

**Prerequisite:** must be a co-op student.

**Learning Outcomes**

- 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. May be repeated up to 3 credits.

**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. May be repeated up to 3 credits.

**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.

**ELAD 2996. Special Topics in Educational Leadership  
1-3 Credits (1-3)**

Special topics course in education for undergraduate students. Course will be identified by a subtitle. May be repeated up to 12 credits.

**Learning Outcomes**

1. Students will be able to engage in systems thinking which aids in seeing how individual situations are shaped by a broader contexts
2. Students will be able to understand how to apply theoretical frameworks for understanding social problems.
3. Students will be able to help develop leadership capacity in others.
4. Students will be able to gain an understanding of cultural competence, which recognizes that diverse perspectives strengthen the dialogue and approaches to solving social problems.

# 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  
3 Credits (2+2P)**

Fundamentals of electricity and electronics, basic circuit devices, meters, transistors, integrated circuits and other solid state devices, computers, fiber optics, and industrial application topics. Minimum math proficiency of CCDM 103 or CCDM 104 required or math placement into CCDM 114 or higher. Restricted to: Community Colleges only. Crosslisted with: AERT 111 May be repeated up to 3 credits.

**Learning Outcomes**

1. Recall and state Ohm's Law and its components (current, resistance, voltage).
2. Demonstrate an understanding of the distinctions between formulas, equations, and expressions, and identify appropriate usage for each in different situations.
3. Apply knowledge and skills to solve problems in series and parallel electronic circuits.
4. Analyze graphs related to electronic circuits and evaluate values derived from those graphs.
5. Evaluate basic principles, formulas, the superposition theorem, and the Thevenin theorem to solve simple problems in electronics and general engineering.
6. Synthesize knowledge and skills to design and develop solutions for complex problems in electronics and engineering, incorporating the principles and theorems learned.

**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.

**Learning Outcomes**

1. Describe Ohm's Law and its components (current, resistance, voltage).
2. Cite the differences between formulas, equations, and expressions, and determine appropriate usage for each in various situations.
3. Apply acquired knowledge and skills to solve problems involving series and parallel electronic circuits.
4. Evaluate fundamental principles, formulas, the superposition theorem, and the Thevenin theorem to solve straightforward problems in electronics and general engineering.
5. Analyze graphs pertaining to electronic circuits and interpret values obtained from those graphs.
6. Integrate knowledge and skills to design and develop solutions for intricate problems in electronics and engineering, incorporating learned principles and theorems.
7. Apply acquired knowledge and skills to solve problems involving series and parallel electronic circuits.

**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

#### **Learning Outcomes**

1. Calculate and find solutions for linear and quadratic equations.
2. Evaluate logarithmic and exponential functions to solve problems in electronics and general engineering.
3. Analyze given trigonometric problems and determine which trigonometric function is appropriate to solve them.
4. Demonstrate an understanding of the distinctions between formulas, equations, and expressions, and will work through examples of each type to determine their appropriate usage in different situations.
5. Solve problems pertaining to both series and parallel electronic circuits.

#### **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, photoelectric effects, gates and timing circuits. Restricted to Community College Campuses Only. May be repeated up to 4 credits.

**Prerequisite:** A grade of C- or better in ELT 110 and ELT 120.

#### **Learning Outcomes**

1. Identify and solve alternating current and voltage circuits and do analysis of AC circuits.
2. Demonstrate by drawing series and parallel RC circuits, measure power in RC circuits, and trouble shoot for applications.
3. Recognize types of inductors, inductors in series and parallel, inductors in DC and AC circuits and select correct inductors for their applications.
4. Measure voltages, currents in series and parallel RL circuits, power in RL circuits, and find troubleshooting faults for basic applications.
5. Test RLC circuits for series and parallel designs and solve RLC resonance circuits and filters and their applications.
6. Identify self and mutual inductance; recognize types of transformers and their characteristics, test loading a transformer, do impedance matching in transformer applications and troubleshooting.
7. Apply, identify and solve time response of RC and RL integrators and differentiators for wave pulses, troubleshooting and applications.

#### **ELT 155. 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.

#### **Learning Outcomes**

1. Design and develop a schematic using the specified software.
2. Generate a schematic symbol for a component.
3. Develop a PCB footprint for a component.
4. Produce a board outline based on given design guidelines.
5. Create a netlist from a schematic.

#### **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 College Campuses Only. May be repeated up to 4 credits.

**Prerequisite:** A grade of C- or better in ELT 110 and (ELT 120 or MATH 1215).

#### **Learning Outcomes**

1. Explain why the binary, binary-coded decimal (BCD), and hexadecimal number systems are used in electronics.
2. Convert between the decimal, binary, binary-coded decimal (BCD), and hexadecimal number systems.
3. Identify each of the six basic logic gating symbols, their truth tables, and their logic expressions.
4. Construct a truth table and logic expression for each of the six basic gating symbols.
5. Draw a parallel adder circuit and solve for the binary outputs when given binary input values.
6. Formulate using Boolean algebra, Demorgan's theorem or Karnaugh Mapping to minimize a digital logic circuit.
7. Design, Construct and test simple logic gate circuits.
8. Construct and test a simple R-S (Latch) and "D" type flip-flop.

#### **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. May be repeated up to 3 credits.

#### **Learning Outcomes**

1. Demonstrate the correct techniques for tinning and maintaining a soldering iron.
2. Compare and contrast the advantages and disadvantages of different proper soldering techniques.
3. Define the different types of mechanical strippers and how they should be used.
4. Install a wire into a turret terminal, a cup terminal, and a pierced tab terminal in accordance with established criteria.
5. Express three types of terminations used for surface mount components.
6. Describe the types of terminations normally used for making repairs.

#### **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 College Campuses Only. May be repeated up to 4 credits.

**Prerequisite:** A grade of C- or better in ELT 110 and ELT 135.

#### **Learning Outcomes**

1. Explain the conditions which exist at the PN junction of an unbiased diode, a forward-biased diode, and reverse biased diode.
2. Diagram a half-wave, full-wave, and bridge rectifier circuits and explain how they function.
3. Define the characteristics of amplifiers, including classes of operation and efficiencies.
4. Describe several JFET and MOSFET applications.
5. Explain the difference between passive and active filters.
6. Practice a positive attitude and the soft skills necessary for successful employment in the electronics industry.

**ELT 215. Microprocessor Applications I****4 Credits (3+2P)**

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. Restricted to Community College Campuses Only. May be repeated up to 4 credits.

**Prerequisite:** A grade of C- or better in ELT 135.

**Prerequisite/Corequisite:** ELT 205.

**Learning Outcomes**

1. Analyze the relationship between current, resistance, and voltage to compute values for filters and filter gains.
2. Demonstrate an understanding of the distinctions between formulas, equations, and expressions, and their respective applications in different situations.
3. Employ the necessary skills to solve problems modulation/demodulation processes and circuits.
4. Evaluate the effectiveness and efficiency of communication circuits.
5. Apply fundamental principles and formulas to solve straightforward problems in communication.

**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. May be repeated up to 3 credits.

**Learning Outcomes**

1. Evaluate network security measures, identify potential vulnerabilities, and reflect on the importance of implementing appropriate security protocols to protect network systems from unauthorized access and potential threats.
2. Design and configure network infrastructures that meet specific requirements and performance criteria.
3. Identify and interpret network management and administration principles, troubleshoot network issues, and provide appropriate support to ensure the smooth operation of computer networks.
4. Evaluate and compare different network protocols, IP addressing schemes, and network reference models and standards, and synthesize this information to design efficient and secure network systems.
5. Apply their knowledge of computer hardware, software applications, operating systems, high-level programming languages, and networking systems to solve practical problems and analyze different network topologies and technologies.

6. Define and explain the fundamental concepts 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 IC s, multiplexers, timers, encoders/decoders, arithmetic circuits, pulse shaping, and memory devices.

Restricted to: Community Colleges only. May be repeated up to 3 credits.

**Prerequisite:** A grade of C- for better in ELT 160.

**Learning Outcomes**

1. Describe the operations of different types of Flip-Flops and data registers, and explain the practical timing limitations of sequential logic circuits.
2. Produce timing measurements and apply practical circuits to solve switch debouncing and noise issues.
3. Analyze timing waveforms using test equipment and draw digital timing diagrams. They will also understand how multivibrators and oscillators function as timing sources, and be able to interface common devices to digital systems for control and data acquisition.
4. Describe the major types of memory devices and storage media, and recognize the fundamental use of microprocessors and microcontrollers.
5. Illustrate how multivibrators and oscillators function as timing sources, and interface common devices to digital systems for control and data acquisition.
6. Develop positive work habits necessary for success in the workplace.

**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. May be repeated up to 4 credits.

**Prerequisite:** A C- or better in ELT 135 or consent of instructor.

**Learning Outcomes**

1. Analyze different scenarios and effectively apply appropriate techniques and methodologies to address challenges in fiber optic communication.
2. Express the differences between light detectors used in fiber optic communication compared to detectors used in electronics communication.
3. Interpret and solve problems related to signal attenuation, gain, and noise using logarithmic and exponential functions.
4. Evaluate and compare various types of detectors used in fiber optic communication systems.
5. Classify the characteristics and advantages of different detectors and make informed decisions on selecting the best detectors for specific applications.

**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.
2. Students will explain the principles of Moving Target Indication, Pulse Doppler, Phased Array, and Synthetic Aperture Radars, and their advantages and disadvantages.
3. Students will analyze and calculate the effects of clutter and environmental noise, earth surface scattering, and atmospheric attenuation, diffraction, and refraction on radar propagation.
4. Students will analyze the performance of supporting radar subsystems, including transmitters, receivers, antennas, tracking servos, and signal processing.
5. 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.
6. Students will explain the use of telemetry, and correlate test radar and telemetry measurements.
7. 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. May be repeated up to 2 credits.

**Learning Outcomes**

1. Develop an understanding of the fundamental concepts and principles related to measurement, conversions, and control temperature as it relates to strain, pressure, motion, and power.
2. Interpret and analyze electrical instrumentation circuits and systems, as well as the principles and methodologies involved in process control.
3. Analyze the characteristics and advantages of different control systems and synthesize their understanding to select the most suitable control system for a given application.
4. Correlate different scenarios and select appropriate measurement and control techniques to address engineering challenges.

**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.

## ELTR-ELECTRICAL

**ELTR 1115. National Electric Code**

**3 Credits (3)**

Provides students with a basic understanding of the National Electrical Codes and how they apply to residential, commercial, and renewable energy systems such as photovoltaic electrical generating systems. How the NEC Codes apply to a Industrial Setting.

**Prerequisite:** ELTR 1120.

**Learning Outcomes**

1. Be able to navigate and interpret the various Sections and Articles found within the National Electric Code.
2. Demonstrate the NEC in the system design of the code.
3. Demonstrate how to apply the NEC Code to Solar Installations.
4. Demonstrate how to load wiring calculations to comply with NEC regulations for both Commercial and Residential.
5. Apply knowledge of the NEC Codes to commercial and industrial applications.

**ELTR 1120. Electrical Theory I**

**4 Credits (3+3P)**

Covers the basic concepts of DC and AC theory with emphasis on electron theory, units of electrical measurement, NEC terminology, and selection of branch circuit conductors. Upon successful completion of this course the student will define the following concepts and demonstrate her/his ability to apply them to the electrical trade by means of written examinations and assignments, with a minimum accuracy of 71%.

**Learning Outcomes**

1. Describe the components of an electrical circuit, electron theory, structure of an atom, properties of conductors, semiconductors, and insulators, sources of electricity, and the conversion of electrical energy.
2. Demonstrate and identify the characteristics of DC circuits, units of electrical measurement, characteristics of current, resistance, and voltage in a circuit, characteristics of a combination circuit, electrical components.
3. Apply the National Electrical Code, definitions and division of articles in the NEC.
4. Interpret NEC applications to residential wiring and the NEC enforcement on electrical codes, selection and calculation of conductor maximum ampacity including correction for ambient temperature of Branch circuit conductors, production of a sinusoidal wave.
5. Know key differences between AC and DC current, applications and theory of electrical components such as inductors, capacitors and transformers.

**ELTR 1130. Introduction to Electrical Power Systems**

**2 Credits (2)**

An overview of electrical power systems, equipment, safety practices, first aid and CPR. Students must be accepted into the electrical lineworker program before enrolling in this course. Restricted to: OEET majors.

**Corequisite:** ELTR 1120.

**Learning Outcomes**

1. List and discuss the major components of the electrical power grid and their operating functions.
2. Work as a team member with strong work ethics and a commitment to quality.
3. Adhere to OSHA ANSI working safety standards.

**ELTR 1140. Basic Motor Controls**

**5 Credits (2+6P)**

Developing schematics and wiring simple manual and electromechanical control devices.

**Prerequisite:** ELTR 1120 or consent of instructor.

**Learning Outcomes**

1. Describe the results of problems solving either orally or in writing.
2. Memorize and recall facts, procedures, and vocabulary pertaining to a motor and its characteristics.
3. Solve application problems using the appropriate design approach as a tool.
4. Express symbols and schematics designs as quantities in meaningful circuit analysis.
5. Evaluate current flow from a variety of electrical systems, utilizing rules for ladder diagrams.
6. Estimate the circuit response; compare estimated and actual responses for consistency.
7. Simplify, solve, evaluate and design various circuits and utilize needed learned interpretations.
8. Describe the results of problems solving either orally or in writing.
9. Explain sequential logic processes. 1
10. Simplify, solve, evaluate and graph various types of AC/DC electrical motor design circuits. 1
11. Simplify, solve, evaluate and programs various electrical installations. 1
12. Describe the results of problems solving either orally or in writing. 1
13. Explain sequential analysis processes as they relate to electrical systems and installation of motors. 1
14. Integrate various strategies and techniques from different areas of motor controls to application problems. 1
15. Express ladder diagrams in meaningful design interpretation.

**ELTR 1160. 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. Students must be accepted into the electrical lineworker program before enrolling in this course. Restricted to: OEET majors.

**Corequisite:** ELTR 1120.

**Learning Outcomes**

1. List and discuss the major components of the electrical power grid and their operating functions.
2. Work as a team member with strong work ethics and a commitment to quality.
3. Adhere to OSHA ANSI working safety standards.

**ELTR 1165. 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. Students must be accepted into the electrical lineworker program before enrolling in this course. Restricted to: OEET majors.

**Learning Outcomes**

1. Professionally communicate in oral and written forms.
2. Work effectively in a team-based environment.
3. Accurately perform electrical related calculations and interpret results for the purpose of repair or installation of electrical power systems.

4. Demonstrate the use of current industry techniques and equipment to diagnose electrical power systems and perform appropriate repairs.
5. Demonstrate the use of current industry techniques and equipment to perform the service and maintenance of electrical power and systems.
6. Demonstrate the use of current industry techniques and equipment in the installation of electrical power lines and associated equipment.
7. Demonstrate understanding of basic electrical principals as they relate to the installation and maintenance of electrical power systems.
8. Determine the appropriate ethical action that should occur in a given circumstance.
9. Demonstrate the ability to perform lineworker duties in a safe manner.

**ELTR 1220. Introduction to Wiring Lab**

**3 Credits (2+3P)**

Covers safety, tools, materials, single pole switches, receptacles, overcurrent protection, three- and four-way switches, pilot switches, door chimes, dryer and range receptacles and swamp coolers. Analyze Blueprint applications as it applies to electrical installations. NEC requirements for light commercial applications.

**Learning Outcomes**

1. Demonstrate and describe jobsite safety procedures.
2. Demonstrate the ability to install electrical circuits such as single-pole, three and four way lighting circuits, heating and cooling system circuits, door chime circuits, and residential and light commercial branch-circuits.
3. Demonstrate and/or describe the function of Overcurrent Protection in an electrical system.
4. Demonstrate the ability to analyze blueprint applications as it applies to electrical installations.
5. Demonstrate the ability to analyze the National Electrical Code as it applies to electrical installations.

**ELTR 1230. 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.

**Prerequisite:** C- or better in ELTR 1220.

**Learning Outcomes**

1. Demonstrate Hand Bending.
2. Demonstrate Raceway and fittings.
3. Identify Conductors and Cables.
4. Interpret Basic Electrical Construction Drawings.
5. Define Residential Electrical Services.
6. Demonstrate Electrical Test Equipment.

**ELTR 1996. Topics in Electricity**

**1-6 Credits**

Varies. May be repeated up to 6 credits.

**Learning Outcomes**

1. Varies.

**ELTR 2120. Electrical Power Systems II**

**3 Credits (2)**

Theory of power generation and distribution with emphasis on three phase systems to include transformers, voltage regulators, surge arrestors. Includes troubleshooting. Students must be accepted into the



electrical lineworker program before enrolling in this course. Restricted to: OEET majors.

**Learning Outcomes**

1. Professionally communicate in oral and written forms.
2. Work effectively in a team-based environment.
3. Accurately perform electrical related calculations and interpret results for the purpose of repair or installation of electrical power systems.
4. Demonstrate the use of current industry techniques and equipment to diagnose electrical power systems and perform appropriate repairs.
5. Demonstrate the use of current industry techniques and equipment to perform the service and maintenance of electrical power and systems.
6. Demonstrate the use of current industry techniques and equipment in the installation of electrical power lines and associated equipment.
7. Demonstrate understanding of basic electrical principals as they relate to the installation and maintenance of electrical power systems.
8. Determine the appropriate ethical action that should occur in a given circumstance.
9. Demonstrate the ability to perform lineworker duties in a safe manner.

**ELTR 2891. 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.

**Learning Outcomes**

1. Varies.

**ELTR 2892. 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.

**Prerequisite:** ELTR 2891 and consent of instructor.

**Learning Outcomes**

1. Varies.

**ELTR 2893. 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.

**Prerequisite:** ELTR 2892 and consent of instructor.

**Learning Outcomes**

1. Varies.

**ELTR 2894. Electrical Apprenticeship VIII**

**6 Credits (6)**

Miscellaneous topics for the journeyman electrician to include power distribution/transmission, solid state controls and relays, photoelectric and proximity controls and programmable controllers.

**Prerequisite:** ELTR 2893.

**Learning Outcomes**

1. Varies.

**ELTR 2995. Electrical Cooperative Experience**

**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.

**Learning Outcomes**

1. Varies.

## ENGL-ENGLISH (ENGL)

**ENGL 1105M. Introduction to Academic Writing for Multilingual Students**  
**3 Credits (3)**

This course is offered to international and domestic multilingual students. The purpose of this course is to provide students with review and practice opportunities to develop writing fluency and coherence, grammar awareness, and academic vocabulary necessary to be successful in ENGL 1110M and/or ENGL 471M.

**Prerequisite:** Placement in ENGL 1105M through NMSU's English Language Placement Test (ELPT), or an ACT score of 13-15, or placement with an academic advisor using the English Self-Placement Canvas Course, or consent of instructor.

**Learning Outcomes**

1. Create well-organized, coherent paragraphs alone or in essay format.
2. Integrate a variety of sentence structures in connected discourse.
3. Portray, with general mastery, basic grammatical forms with very few errors.
4. Summarize or paraphrase information from source readings correctly.
5. Analyze readings for meaning and main ideas through annotation.
6. Integrate APA style format for in-text citations and references into their writing.

**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. May be repeated up to 4 credits.

**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 a C- or higher in either CCDE 110N or CCDS 119N.

**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.

**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. May be repeated up to 4 credits.

**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 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 and 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 the equivalent.

**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 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. 1
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. May be repeated up to 3 credits.

**Prerequisite:** C- or better in 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. write a scene in the professional script format
4. deliver a professional verbal and visual presentation of a story idea to an audience
5. the ability to conceive, illustrate and plan a visual project
6. 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,
2. Symbolism and point of view
3. Develop these building blocks into a cohesive narrative within a written document
4. Effectively communicate in different written formats
5. Create design documents for varied genres of media: narrative short, documentary, 6 Animation, commercial/industrial video, computer game
6. 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.

**Prerequisites:** C- or better in ENGL 1110G or ENGL 1110H or ENGL 1110M.

##### **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 1
10. Become familiar with common and influential scholarly, critical, and aesthetic ways of reading Biblical texts from a contemporary perspective 1
11. Understand the cultural influence of the Bible and its relevance for other areas of scholarly and artistic work

**ENGL 2610G. 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 2620G. 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 2630G. 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 2640G. 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 2675. Transatlantic Literatures****3 Credits (3)**

This course tracks the production, circulation, and reception of literary works in transatlantic contexts over at least 150 years. Students examine a variety of documents to map transformations in form, genre, and medium across historical and geographic contexts. Students consider

how colonization, exile, displacement, and migration have track the production, circulation, and reception of literary works in transatlantic contexts over at least 150 years reinforced or contested national literary traditions.

#### Learning Outcomes

1. Track the production, circulation, and reception of literary works in transatlantic contexts over at least 150 years
2. Identify and analyze a variety of documents to map transformations in form, genre, and medium across historical and geographic contexts
3. Explain how colonization, exile, displacement, and migration have reinforced or contested national literary traditions.

#### ENGL 2996. Special Topics

##### 1-3 Credits

Emphasis on a literary and/or writing subject chosen for the semester. Repeatable for a 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)

An introduction to DC circuit analysis using Ohm's law, Kirchoff's laws, and Thevenin's theorem. Topics include delta-wye and source transformations, node-voltage and mesh-current analysis, and superposition.

**Prerequisite/Corequisite:** MATH 1250G.

#### Learning Outcomes

1. Convert decimal numbers to engineering notation using metric prefixes and units.
2. Describe and relate electric charge, current, resistance, voltage, energy, and power.
3. Analyze circuits with voltage and current sources, ideal and real, independent and dependent.
4. Apply Ohm's Law and Kirchoff's Laws to DC circuits.
5. Create equivalent circuits using series/parallel combinations, delta-wye and source transformations, and Thevenin's Theorem.

6. Apply the node voltage and mesh current methods and superposition to analyze circuits.
7. Design and proto-type DC circuits and measure voltages and currents.

**ENGR 130. Digital Logic****4 Credits (3+3P)**

An introduction to logic design and the basic building blocks of digital systems. Topics include numbering systems, Boolean algebra, digital logic theory, combinational logic, sequential logic, and applications such as adders, multiplexers, encoders, counters, and registers. Includes hands-on laboratory.

**Prerequisite:** A grade of C- or better in MATH 1220G or higher.

**Learning Outcomes**

1. Explain the behavior of the six logic gates using the truth table (AND, OR, NOT, NAND, NOR, XOR, XNOR).
2. Create the truth tables for any logic gate or Boolean function.
3. Apply Boolean Algebra rules OR K-maps to any logic function expression to simplify it.
4. Create complete circuit designs using combinational logic functions and sequential logic functions.
5. Convert numerical values to the commonly used digital representations.
6. Apply arithmetic operations using different numbering systems.
7. Build digital circuits using breadboard and Integrated circuits.

**ENGR 140. Introduction to Programming and Embedded Systems****4 Credits (3+3P)**

An introduction to programming and to the field of embedded systems. Starting from the basic concepts of programming, this course uses microcontrollers, sensors, motors, and other peripheral devices to support the learning and application of the problem-solving process through embedded systems. This course focuses on reading, writing, debugging, testing, and documenting computer programs.

**Prerequisite/Corequisite:** E T 182 or ENGR 130.

**Learning Outcomes**

1. Set up and use a rich programming environment for programming
2. Employ effective use of the problem-solving process
3. Analyze existing code
4. Write, debug and test code given software requirements
5. Apply testing and documentation best practices
6. Transfer and apply programming knowledge to an Arduino-based environment

**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:** A grade of C- or better in MATH 1250G or higher.

**Learning Outcomes**

1. Ability to solve systems of linear equations by use of matrices
2. Ability to use complex numbers and periodic function to solve engineering problems
3. Ability to solve problems using various coordinate system
4. Write and Solve problems with 2-D 3D vectors

5. Write and Solve problems with derivatives

6. 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 217. Manufacturing Processes****3 Credits (3)**

An introduction to modern manufacturing processes and their application. Students will be introduced to manufacturing concepts such as traditional and non-traditional machining operations, tooling, material selection, thermal joining, geometric dimensioning & tolerancing, metrology, additive manufacturing, assembly and inspection, g-code, and automated manufacturing using CAM packages.

**Prerequisite:** A grade of C- or better in both, ENGR 110 and (MATH 1220G or higher).

**Learning Outcomes**

1. Identify the different manufacturing processes and their applications
2. Use, set up, and calibrate measuring tools.
3. Apply geometric tolerances to engineering drawings
4. Demonstrate basic knowledge of materials and material properties
5. Demonstrate basic knowledge of GM codes and their application
6. Proficiently use CAM packages such as SolidWorks CAM
7. Identify different tooling, their use, and manufacturing application

**ENGR 217 L. Manufacturing Processes Lab****1 Credit (3P)**

A hands-on application of the concepts introduced in ENGR 217. This lab will expose the students to hands-on exercises and manufacturing methods used in industry.

**Corequisite:** ENGR 217.

**Learning Outcomes**

1. Understand how a product goes from design to being manufactured
2. Gain knowledge of industry tools and technology
3. Learn how to design for manufacturing
4. Engage students in critical thinking and the design process
5. Gain an appreciation for, and skills for effective communication, teamwork, ethics
6. Increase student knowledge of Geometric Dimensioning and Tolerancing (GDT)
7. Use of other tools such as drawing software, mathematics, economics, etc. knowledge of dimensions, length, time, mass, force, temperature, electric current, energy and power, and related parameters in engineering
8. Understand industry and NMSU safety practices and apply them whenever applicable.

**ENGR 230. AC Circuit Analysis****4 Credits (3+3P)**

An introduction to AC circuit analysis techniques, RC/RL and RLC transients, phasors, complex power, filter response, and operational amplifiers.

**Prerequisite:** A grade of C- or better in both, ENGR 120 and (MATH 1440 or MATH 1521G or higher) or ENGR 190)).

**Learning Outcomes**

1. Apply Ohm's Law and Kirchoff's Laws to AC circuits.
2. Determine transient responses of RL/RC and RLC circuits.
3. Use phasor techniques to analyze AC circuits.
4. Compute RMS quantities and complex power.
5. Analyze and design Op-Amp circuits.
6. Design and proto-type AC circuits and measure AC voltages and currents.

**ENGR 233. Engineering Mechanics I****3 Credits (3)**

Engineering mechanics using vector methods. Force systems, resultants, equilibrium, distributed forces, area moments, and friction.

**Prerequisite:** A grade of C- or better in ENGR 190 or MATH 1521G.

**Prerequisite/Corequisite:** PHYS 1310G or PHYS 1230G.

**Learning Outcomes**

1. Have an understanding of the force systems, resultants, equilibrium, distributed forces, area moments, and friction.
2. 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:** A grade of C- or better in M E 236 or 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.
2. 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. May be repeated up to 3 credits.

**Prerequisite:** 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)
2. To learn to apply engineering and scientific solutions to water quality problems
3. 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 1110G. 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.

**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. 1
10. Give examples of ways to evaluate learner growth.1
11. Present a FCS content-based lesson effectively to learners using PowerPoint presentation software and a selected teaching method. 1
12. Evaluate one's own teaching and the teaching of others. 1
13. Exhibit increased confidence in one's abilities as a teacher/educator.1
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-FAMILY AND CHILD STUDIES

**FCST 1130. Interpersonal Skills in Intimate Relationships****3 Credits (3)**

Developing social skills within friendships, dating relationships, marriage, parenting, and families.

**Learning Outcomes**

1. To understand several theories that explain why some people have healthy interpersonal relationships while others do not.
2. To gain insight about one's self.
3. To learn and improve upon selected relationship skills that improve quality of life.
4. To learn skills that improve interpersonal relationships

**FCST 2110. Infancy Through Middle Childhood in the Family****3 Credits (3)**

This course discusses research and theory relevant to prenatal development and the physical, mental, and socio-emotional development of the child from birth through age 12. This developmental period will be examined across different cultures and in real world contexts. Attitudes, knowledge, and skills needed for working with young children and their families will be introduced. Restricted to Las Cruces campus only.

**Learning Outcomes**

1. Evaluate how genes and the environment interact to impact human development from prenatal stages through age twelve.
2. Assess the effects of environmental influences on the developing fetus.
3. Discuss the capacities of newborn development through age twelve.
4. Evaluate how individuals and couples change during the transition to parenthood.
5. Analyze the physical, cognitive, and social-emotional development of the child from birth through age twelve.

**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.

**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. 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.

**Learning Outcomes**

1. Contrast theories of adult development and aging and apply theories to adult behavior.
2. Hypothesize how physical, emotional, cognitive, and psychosocial aspects of adult development change over time.
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 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 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. May be repeated up to 3 credits.

**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.
6. Present original animations to instructor and classmates for critique.
7. 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 1
9. Apply adjustment layers 1
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.

**Learning Outcomes**

1. Analyze the historical development of video games from early arcade machines to modern consoles and mobile platforms.
2. Evaluate the impact of technological advancements on video game design, graphics, and gameplay mechanics.
3. Identify key milestones, influential games, creators, and major companies that shaped the video game industry.
4. Examine how video games have influenced and been influenced by other forms of media and popular culture.
5. Assess the social, cultural, and economic impacts of video games as they evolved into a mainstream form of entertainment.
6. Discuss current trends and predict future directions in video game development and the gaming industry.

**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 1
10. Prepare image for use in another program 1
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 1
10. Apply design principles to Screen Print Projects 1
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 Compositing & FX****3 Credits (3)**

This course will familiarize students with the process of compositing and creating special effects for animation using industry standard software. Students will learn how to assemble an animated scene and use advanced 3D lighting, spacing, and digital effects to achieve a dynamic, professionally rendered look.

**Prerequisite:** FDMA 2710.

**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 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 2144. Pre-production Management**

##### **3 Credits (2+2P)**

Pre-production planning paperwork breakdowns, budgeting, and scheduling; taking a project from start to finish from a producers standpoint.

**Prerequisite(s):** FDMA 1210.

#### **Learning Outcomes**

1. Demonstrate proficiency in various areas of pre-production
2. Create a script breakdown, budget, production and post-production schedule, and management plan and timeline that are technically sound.
3. Use features of pre-production and project management software, to foresee and plan the pre-production, production, and post-production stages of a project
4. Demonstrate understanding of the processes of supporting and managing a project, through the pre-production, production, and post-production stages to completion
5. Work collaboratively and communicate effectively with the pre-production and management teams to produce the desired finished 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.

- Skill of each individual utilizing the usage of high-end camera equipment such as dollies, cranes and Steadicam.
- 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**

- 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**

- Demonstrate competency in the use of InDesign software.
- Create appropriate visual solutions based on target marketing information.
- Demonstrate competency in the design and production of advertising and promotional materials.
- Present ideas and concepts effectively and competently.
- 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**

- Gain a greater appreciation for the history of cinema
- Develop knowledge of the key eras in the history of U.S. cinema
- Learn the characteristics of major movements in international cinema
- Understand the various elements that go into telling a story in cinema: screenplay, narrative devices, director, producer, talent, production design, cinematography, editing, sound design
- Learn how major genres in U.S. cinema have evolved in the past 100+ years
- Gain a basic understanding of the operations and organization of the Hollywood film industry, from the studio system until today
- Gain an awareness of the shifts in the film industry that present new opportunities for independent filmmakers

- Understand the importance of learning about the history of cinema to the process of becoming a filmmaker
- 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**

- To expand your knowledge of the history of animation and its evolution to the modern day.
- 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.
- 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**

- Introduction to visual communication: Defines design media; Discuss universal design principles and strengthen student basic design skills.
- 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
- 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**

- Create effects using advanced blending techniques
- Effectively utilize advanced masking techniques
- Refine Selections with advanced techniques
- Assess Adjust color in an image
- Utilize advanced photo enhancement techniques
- Alter images using Photoshop painting techniques
- Create brush presets
- Create vector elements with paths
- Add manipulate type on a path 1
- Create advanced special effects 1
- Apply vanishing point warping 1

12. Create a video clip 1
13. 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 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. May be repeated up to 6 credits.

**Prerequisite:** FDMA 1410.

#### **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 Techniques**

##### **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. 3D 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 and creating 3D effects. Topics include, keyframe and curve animation, kinematics, cycle animation, camera animation, deformers, dynamics and constraints.



**Prerequisite:** 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 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:** FDMA 1510 OR 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 up to 6 credits.

**Learning Outcomes**

1. Develop a comprehensive game design document that adheres to industry standards, incorporating elements such as gameplay mechanics, narrative structure, and user interface design.
2. Critically analyze existing game design documents to identify strengths, weaknesses, and areas for improvement.
3. Apply advanced game design techniques to create innovative and engaging game concepts.
4. Evaluate the ethical and cultural implications of game design choices and their impact on diverse audiences.
5. Collaborate effectively in a team setting to produce a cohesive and well-documented game design project.

6. Present and defend game design concepts and documents to peers and industry professionals, demonstrating clear communication and critical thinking skills.

#### **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 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/Corequisite:** FIRE 115, FIRE 252, OEEM 103. Restricted to Dona Ana campus only.

##### **Learning Outcomes**

1. Describe basic fire department organizational structure and operating procedures.
2. Recognize probable fire behaviors and how to manage them appropriately.
3. Identify and manage hazardous materials.
4. Identify characteristics of building construction; recognize signs of building collapse.
5. Demonstrate the safe use, cleaning, refilling, inspecting, and storing of SCBA bottles.
6. Identify and properly use portable fire extinguishers.
7. Identify and properly tie knots used in the fire service; use and maintain various types of rope used in the fire service.
8. Conduct search and rescue drills as a member of Fire Company.
9. Identify and appropriately use techniques for forcible entry tools. 1
10. Identify and demonstrate knowledge and techniques used with fire service ground and aerial ladders. 1
11. Apply ventilation practices to effectively ventilate buildings. 1
12. Learning fundamentals of water supply and securing water sources. 1
13. Demonstrate coupling, loading, and rolling fire hose. 1
14. Demonstrate hydrant connections using various lays and connections. 1
15. Identify and operate nozzles and smooth bore tips for fire streams. 1
16. Become familiar with strategies and tactics in fire extinguishment. 1

17. Become familiar with use and operation of fire sprinklers. 1
18. Perform salvage and overhaul operations. 1
19. Identify and use various fire service communications systems. 2
20. Define the types of special rescues encountered by fire fighters. 2
21. Describe the steps of a special rescue. 2
22. Describe the general procedures at a special rescue scene. 2
23. Describe how to safely approach and assist at a vehicle or machinery rescue incident. 2
24. Describe how to safely approach and assist at a confined space rescue incident. 2
25. Describe how to safely approach and assist at a rope rescue incident.

#### **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.

##### **Learning Outcomes**

1. Illustrate and explain the history and culture of the fire service.
2. Differentiate between fire service training and education and explain the value of higher education to the professionalization of the fire service.
3. List and describe the major organizations that provide emergency response service and illustrate how they interrelate.
4. Identify fire protection and emergency service careers in both the public and private sectors.
5. Define the role of national, state, and local support organizations in fire and emergency services.
6. Discuss and describe the scope, purpose, and organizational structure of fire and emergency services.
7. Describe the common types of fire and emergency service facilities, equipment, and apparatus.
8. Compare and contrast effective management concepts for various emergency situations.
9. Identify and explain the components of fire prevention including code enforcement, public information, and public and private fire protection systems. 1
10. Recognize the components of career preparation and goal setting. 1
11. Describe the importance of wellness and fitness as it relates to emergency services.

#### **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.

##### **Learning Outcomes**

1. Identify physical properties or the three states of matter.
2. Categorize the components of fire.
3. Explain the physical and chemical properties of fire.
4. Describe and apply the process of burning.
5. Define and use basic terms and concepts associated with the chemistry and dynamics of fire.
6. Discuss various materials and their relationship to fires as fuel.

7. Demonstrate knowledge of the characteristics of water as a fire suppression agent.
8. Explain types of suppression agents and strategies.
9. Compare and contrast differing methods and techniques of fire extinguishments.

#### **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 29 CFR 1910.120. Hazardous Materials Awareness and Operations certification issued through the New Mexico Firefighter's Training Academy upon successful completion (IFSAC accredited).

##### **Learning Outcomes**

1. Identify the definition of hazardous materials (or dangerous goods, in Canada) and WMD.
2. Identify typical container shapes that can indicate hazardous materials/WMD.
3. Identify the UN/DOT hazard classes and divisions of hazardous materials and identify common examples of materials in each hazard class or division.
4. Identify the difference between hazardous materials/WMD incidents and other incidents.
5. Identify typical occupancies and locations in the community where hazardous materials/WMD are manufactured, transported, stored, used, or disposed of.
6. Identify facility and transportation markings and colors that indicate hazardous materials/WMD.
7. Identify sources of information for determining the correct mass decontamination procedures and identify how to access those resources in a hazardous material/WMD incident.
8. Identify the supplies and equipment required to set up and implement technical decontamination operations.
9. Identify procedures, equipment, and safety precautions for communicating with crowds and crowd management techniques that can be used at incidents where a large number of people might potentially be contaminated. 1
10. Describe products potentially encountered in the incident associated with WMD suspicious letter, package, illicit laboratory, WMD agent and environmental crimes. 1
11. Describe the procedures for maintaining the evidentiary integrity of any item removed from the crime scene. 1
12. Select the personal protective equipment required to support evidence preservation and sampling at hazardous materials/WMD incidents based upon local procedures. 1
13. Select the personal protective equipment required to support victim rescue and recovery at hazardous materials/WMD incidents based on local procedures.

#### **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/Corequisite:** FIRE 128.

#### **Learning Outcomes**

1. Define and explain hydraulic applications within the fire service.
2. Analyze the chemical and physical properties of water including latent heat and specific heat.
3. Examine the use of water as an extinguishing agent and how it relates to BUT's absorbed and generated steam.
4. Calculate pressure, force an area using hydraulic formulas.
5. Explain the six principles of pressure as they apply to water.
6. Discuss the use of basic fireground formulas to estimate effective pump operations.
7. Explain and apply the formulas used by the fire service, determining: Gallons per minute, nozzle pressure, friction loss, and pump discharge pressure.
8. Identify the pumps used by the fire service and demonstrate their operations.
9. Discuss the importance of understanding pump operating principles and construction. 1
10. Analyze the laws of physics that permit drafting operations. 1
11. Explain and apply the formulas used by the fire service for determining: vertical and horizontal range of fire streams, nozzle reaction, back pressure, and relay operations. 1
12. Identify the source of water used for firefighting. 1
13. Evaluate other fire ground formulas used for the proper operation of sprinkler systems, standpipes, and hydrants. 1
14. List and discuss the role of hose, nozzles, and appliances used during pump operations. 1
15. Distinguish among types of foam used in the fire service. 1
16. Identify foam application techniques. 1
17. Install and operate an inline foam eductor. 1
18. Evaluate the relationship of flow, pressure, shape, and nozzle reaction in the design and operation of a nozzle.

#### **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.

#### **Learning Outcomes**

1. Define the national fire problem and the role of fire prevention.
2. Identify and describe fire prevention organizations and associations.
3. Define laws, rules, regulations, and codes and identify those relevant to fire prevention of the authority having jurisdiction.
4. Define the functions of a fire prevention bureau.
5. Describe inspection practices and procedures.
6. Identify and describe the standards for professional qualifications for Fire Marshal, Plan examine, Fire Inspector, Fire and Life Safety Educator, and Fire Investigator.

7. List opportunities in professional development for fire prevention personnel.
8. Describe the history and philosophy of fire prevention.

#### **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 specification. 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 possess 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.

#### **Learning Outcomes**

1. Identify the pumps used by the fire service and demonstrate their operations.
2. Discuss the importance of understanding pump operating principles and construction.
3. Identify the sources of water used for firefighting.
4. Assess the basic attributes of a good driver and how basic vehicle operations, defensive driving, speed, and environmental conditions affect safe driving.
5. Explain the importance of preventive maintenance and its documentation.
6. Describe features and capacities of various fire department apparatus.
7. Identify the considerations taken when selecting qualified driver/operators.
8. Safely drive fire apparatus and successfully complete the NFPA obstacle course.
9. Describe apparatus positioning as it applies to different types of apparatus. 1
10. Describe the characteristics of water. 1
11. Summarize facts about performance testing of fire pumps. 1
12. Distinguish among performance tests for puming apparatus.

#### **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.

#### **Learning Outcomes**

1. Define cultural change.
2. Evaluate methods for enhancing accountability.
3. Apply risk management techniques.
4. List steps for eliminating unsafe acts.
5. Identify training and certification standards.
6. identify medical and fitness standards.
7. Explain how using available technology enhances safety.
8. Identify the NIOSH top five and apply them to case studies in evaluating prevention measures.
9. Describe the importance of establishing response standards. 1

10. Evaluate considerations for response to violent incidents. 1
11. Evaluate methods for providing emotional support.

**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 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.

**Learning Outcomes**

1. Acknowledge career development opportunities and strategies for success.
2. Recognize the need for effective communication skills both written and verbal.
3. Identify and explain the concept of span and control, effective delegation, and division of labor.
4. Select and implement the appropriate disciplinary action based upon an employee's conduct.
5. Explain the history of management and supervision methods and procedures.
6. Discuss the various levels of leadership, roles, and responsibilities within the organization.
7. Describe the traits of effective versus ineffective management styles.
8. Identify the importance of ethics as it relates to fire and emergency services.
9. Identify the roles of the National Incident Management System (NIMS) and Incident Management System (ICS).

**FIRE 210. Building Construction for Fire Protection****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.

**Learning Outcomes**

1. Describe building construction as it relates to firefighter safety, building codes, fire prevention, code inspection, firefighting strategy, and tactics.
2. Classify major types of building construction in accordance with a local/model building code.
3. Analyze the hazards and tactical considerations associated with the various types of building construction.

4. Explain the different loads and stresses that are placed on a building and their interrelationships.
5. Identify the function of each principle structural component in typical building design.
6. Differentiate between fire resistance, flame spread, and describe the testing procedures used to establish ratings for each.
7. Classify occupancy designations of the building code.
8. Identify the indicators of potential structural failure as they relate to firefighter safety.
9. Identify the role of GIS as it relates to building construction.

**FIRE 214. Hazardous Materials Technician****3 Credits (3)**

Knowledge and skills about hazardous materials mitigation needed to certify as a Hazardous Materials Technician Level III. Meets or exceeds NFPA 471, 472, 473 standards, and OSHA 1910.102 part Q, and New Mexico HMER plan. May be repeated up to 3 credits. Restricted to: Community Colleges only.

**Prerequisite:** FIRE 115.

**Learning Outcomes**

1. Acquire the skills and knowledge required to perform the functions of a firefighter.
2. Apply the appropriate critical thinking skills necessary to develop an incident action plan using appropriate strategies and tactics to safely manage incidents.

**FIRE 216. Hazardous Materials Chemistry****3 Credits (3)**

This course provides basic chemistry relating to the categories of hazardous materials including recognition, identification, reactivity, and health hazards encountered by emergency services. Restricted to: Community colleges only. May be repeated up to 3 credits.

**Learning Outcomes**

1. Acquire the skills and knowledge required to perform the functions of a firefighter.

**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.

**Learning Outcomes**

1. The student will be able to understand fire science, fire chemistry, thermodynamics, fire dynamics, and exploding of dynamics.
2. The student will be able to understand fire investigations, fire investigations methodology, fire investigation technology, and fire analysis.
3. The student will be able to understand evidence documentation, collection, and preservation.
4. The student will be able to understand computer fire modeling, failure analysis and analytical tools, fire protection systems, electricity and electrical systems, and hazardous materials.

**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.

**Learning Outcomes**

1. Explain the importance of a fire ground commander.
2. Explain the importance of having standard operating procedures during fire ground operations.
3. Analyze fires by their classification and identify what constitutes a fuel.
4. Describe heat transfer and identify their distinct characteristics.
5. Describe the phases that a fire progresses through and their specific approach to extinguishment.
6. Describe the methods for making proper assumptions in fire situations.
7. Identify and list unique building construction techniques, and their specific approach to extinguishment.
8. Identify the principles behind reduce, fire control, and fire stream operations.
9. Evaluate fire scenarios and apply the appropriate tactics and strategies.

**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.

**Learning Outcomes**

1. The student shall be able to summarize professional responsibilities of the fire and emergency services instructor.
2. The student shall be able to discuss characteristics of adult learning and describe the different learning domains and learning styles.

3. The student shall be able discuss instructional preparation as it relates to training aid selection, class continuity, and class consistency.
4. The student shall be able discuss instructional materials and equipment and how they are used in the classroom and training environments.
5. The student shall be able discuss the classroom and training ground environments.
6. The student shall be able to discuss skills-based training and safely.

**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 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.

**Learning Outcomes**

1. Define extrication, disentanglement, and rescue.
2. Identify organizations relevant to extrication operations.
3. Describe the roles performed by organizations relevant to extrication operations.
4. Identify the responsibilities of the rescue organizations.

## 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.

- Students can understand familiar words, phrases, and sentences within short and simple texts related to everyday life.
- Students can sometimes understand the main idea of what they have read.
- Students can identify beliefs, behaviors and cultural artifacts of the French-speaking world.
- 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 I, 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. May be repeated up to 4 credits.

**Learning Outcomes**

- Students can participate in conversations on a number of familiar topics using simple sentences.
- Students can handle short social interactions in everyday situations by asking and answering simple questions.
- Students can write briefly about most familiar topics and present information using a series of simple sentences.
- Students can understand the main idea in short, simple messages and presentations on familiar topics.
- Students can understand the main idea of simple conversations that they overhear.
- Students can understand the main idea of short and simple texts when the topic is familiar.
- Students can describe and make comparisons between decisions about beliefs, behaviors and cultural artifacts of the French-speaking world.
- 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. May be repeated up to 3 credits.

**Learning Outcomes**

- Students can participate in conversations on familiar topics using sentences and series of sentences.
- 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.

- Students can write on a wide variety of familiar topics using connected sentences.
- Students can understand the main idea in messages and presentations on a variety of topics related to everyday life and personal interests and studies.
- Students can understand the main idea of conversations that they overhear.
- Students can understand the main idea of texts related to everyday life and personal interests or studies.
- 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.
- Students will engage with social issues confronting the French-speaking world to continue to develop their sense of personal and social responsibility

**FREN 2120G. 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. May be repeated up to 3 credits.

**Learning Outcomes**

- 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.
- Students can handle social interactions in everyday situations, sometimes even when there is an unexpected complication.
- 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.
- 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.
- 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.
- 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.
- 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.
- Students demonstrate the essential skills of Critical Thinking, Personal and Social Responsibility, and Information and Digital Literacy, as per the New Mexico General Education Curriculum

**FREN 2135G. Frontiers and Border Crossings in the French-Speaking World****3 Credits (3)**

An exploration of frontiers and borders in the French-speaking world: geographical, linguistic, cultural, and symbolic

**Learning Outcomes**

1. Articulate the diversity of boundaries (geographical, literal, gender, cultural, symbolic) and the role they play in negotiating cultural identities in the Francophone world.
2. Critically analyze and communicate orally and in writing the nuances of frontiers, border crossings, and their expressions in the course texts.
3. Describe, through the study of French and Francophone borders and frontiers, how cultural contexts and human practices influence individuals and societies.
4. Apply the knowledge and skills gained through the study of boundaries in the francophone world to analogous settings and to students' personal academic goals.
5. Demonstrate information literacy and technological skills in researching and presenting themes related to the readings and to the films screened
6. Reflect on the effects of geographical, social, linguistic, and symbolic boundaries and crossings as expressed in the course content on individuals.

**FSTE-FOOD SCIENCE & TECHNOLOGY (FSTE)****FSTE 1120. ACES in the Hole Foods I****4 Credits (4)**

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 Restricted to Las Cruces campus only. Students enrolled in this class must possess A Food Handler Card

**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 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. Articulate 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 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-FIRST YEAR EXPERIENCE

**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 1
10. Explain the basics of saving and planning for the financial future 1
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.

- Identify and demonstrate listening skills.
- Identify effective study and note taking skills.
- Identify and demonstrate effective test-taking skills.
- Identify critical thinking skills used in nursing.
- 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**

- Comprehended the foundation related to singing in a gospel choir setting
- Demonstrate an understanding of the difference between the musical treble and bass clef
- Expand vocabulary and reading comprehension of gospel music terminology.
- Improve the speed and accuracy of music sheet and sight reading

**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**

- Varies

**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**

- produce writing that is focused on a main point
- produce writing that is organized
- produce writing follows task-specific conventions of paragraphing, sentence boundaries, usage, agreement, punctuation and spelling
- deliver effective speeches
- organize and present information with a purpose
- 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**

- To give the students a historical perspective on the field of genetics.
- To familiarize the students to introductory concepts and vocabulary to the field of genetics.

- Introduce experimental systems within the field of genetics and to give perspective to current genetic research.
- 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**

- Define, describe, illustrate, distinguish among or explain the use of maps, map scale, globes, map projections, and remote sensing.
- 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.
- 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]).
- 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.
- 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.
- 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.
- 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).
- Define, describe, illustrate, distinguish among or explain specific impacts by humans on weather, climate, and on the ecosystem at large.
- 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. 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. 1
- Recognize and discuss the effect of human activity on climate, climate change, the greenhouse effect, and on landforms at large. 1
- Synthesize information from external, current sources and personal observations and discuss their relationships to class material.

**GEOG 1115G. Maps and GIScience****3 Credits (3+3P)**

Explore the principles of Geographic Information Science (GIScience) and its applications in solving human, natural, and socio-environmental challenges. Learn to evaluate geospatial data and technologies; analyze their significance, implications, and applications; and communicate insights effectively. Topics include map use, spatial data analysis, Geographic Information Systems (GIS), remote sensing, and Global Navigation Satellite Systems (GNSS).

**Co-requisite:** GEOG 1115L.

**Learning Outcomes**

1. Explain key concepts and methods of geographic information science (GIScience).
2. Articulate the significance of geographic information in decision-making processes that address human, natural, and socio-environmental challenges.
3. Evaluate the ethical, socio-environmental, and legal implications of geospatial data, technologies, and applications.
4. Evaluate spatial and aspatial data to assess human, natural, and socio-environmental problems, as well as potential solutions.
5. Communicate effectively in written and oral formats.

**GEOG 1115L. Maps and GIScience Laboratory****1 Credit (1P)**

Gain hands-on field and laboratory experience with geospatial tools, including Geographic Information Systems (GIS), remote sensing, and Global Navigation Satellite Systems (GNSS). Manage, collect, analyze, interpret, and visualize spatial data to solve real-world problem, and develop your own GIScience research report. Corequisite: GEOG 1115G

**Corequisite:** GEOG 1115G.

**Learning Outcomes**

1. Collect spatial and aspatial data using various web and mobile apps.
2. Apply spatial and aspatial quantitative methods for data management, visualization, analysis, interpretation, and spatial problem-solving.
3. Create functional and aesthetically pleasing maps.
4. Develop a GIScience research report.
5. Communicate effectively in written and oral formats.

**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. 1
10. Collect data to analyze or classify the region various historical developments and trends relating to globalization 1
11. Apply critical thinking skills in predicting future developments and impacts in economics, cultural diversity, and political stability globally. 1
12. Recognize and discuss current political "hot-spots," their causes, and potential results with regards to globalization. 1
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 1150G. Introduction to Environmental Studies****3 Credits**

This course provides an introduction to core environmental issues and how these have been debated over time. In the process, it is intended to help you read critically, write effectively, and to reflect on your own environmental concerns in relation to the analytical as well as the cultural, social, and political perspectives that have been brought to bear on environmental issues over time. Through extensive exposure to environmental issues, solutions, and institutions, the course will help prepare you for a professional career relating to environmental management and policy.

#### Learning Outcomes

1. Survey the major environmental issues facing humankind.
2. Assess the conflicts or perceived conflicts between society and the environment.
3. Evaluate the relationships between the environment and the economy.
4. Analyze potential solutions.
5. Develop clear and effective communicators skills.

#### 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.

#### 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 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-GENDER AND SEXUALITY 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. May be repeated up to 3 credits.

#### **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.

- Students can understand the main idea of short and simple texts when the topic is familiar.
- 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.
- 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**

- Students can participate in conversations on familiar topics using sentences and series of sentences.
- 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.
- Students can write on a wide variety of familiar topics using connected sentences.
- Students can understand the main idea in messages and presentations on a variety of topics related to everyday life and personal interests and studies.
- Students can understand the main idea of conversations that they overhear.
- Students can understand the main idea of texts related to everyday life and personal interests or studies.
- 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.
- 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 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**

- 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

- 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
- Students will summarize and appraise different historical interpretations and evidence in order to construct past events. Bloom Taxonomy's Cognitive Process: Understand, Evaluate, Apply
- 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
- Students will create well-supported historical arguments and narratives that demonstrate an awareness of audience. Bloom Taxonomy's Cognitive Process: Create, Apply 8
- 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 9

**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**

- 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
- 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
- Students will summarize and appraise different historical interpretations and evidence in order to construct past events. Bloom Taxonomy's Cognitive Process: Understand, Evaluate, Apply
- 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
- Students will create well-supported historical arguments and narratives that demonstrate an awareness of audience. Bloom Taxonomy's Cognitive Process: Create, Apply
- 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 10 11

**HIST 1130G. World History I****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. May be repeated up to 3 credits.

**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 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. May be repeated up to 3 credits.

**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 14

**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



- Students will create well-supported historical arguments and narratives that demonstrate an awareness of audience. Bloom Taxonomy's Cognitive Process: Create, Apply
- 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 1170G. 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**

- 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. Bloom Taxonomy's Cognitive Process: Remember and Understand.
- 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.
- Students will summarize and appraise different historical interpretations and evidence in order to construct past events. Bloom Taxonomy's Cognitive Process: understand, evaluate, apply.
- 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.
- Students will create well-supported historical arguments and narratives that demonstrate an awareness of audience. Bloom Taxonomy's Cognitive Process: create, apply.
- 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 1180. 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**

- 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. Bloom Taxonomy's Cognitive Process: Remember and Understand
- 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

- Students will summarize and appraise different historical interpretations and evidence in order to construct past events. Bloom Taxonomy's Cognitive Process: understand, evaluate, apply
- 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
- Students will create well-supported historical arguments and narratives that demonstrate an awareness of audience. Bloom Taxonomy's Cognitive Process: create, apply
- 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 1180G. 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**

- 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. Bloom Taxonomy's Cognitive Process: Remember and Understand.
- 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.
- Students will summarize and appraise different historical interpretations and evidence in order to construct past events. Bloom Taxonomy's Cognitive Process: understand, evaluate, apply.
- 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.
- Students will create well-supported historical arguments and narratives that demonstrate an awareness of audience. Bloom Taxonomy's Cognitive Process: create and apply.
- 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 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**

- 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 16

#### **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.

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.

##### **Learning Outcomes**

1. Define the concept of an electronic health record.
2. Describe key issues related to privacy and security of EHRs.
3. Set up new patients, edit patient information, and export patient lists.
4. Set up new insurance companies.

5. Set up, edit, and print addresses in the physician, employee, pharmacy, and testing facility categories.
6. Add patients and notes to the schedule.
7. Use the Patient Tracker to track and locate a patient with the medical setting.
8. Describe the layout of an electric chart.
9. Create office visit notes. 1
10. Describe how to order lab, imaging, and medical tests.

**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. Crosslisted with: NURS 120. Restricted to Community Colleges campuses only.

**Learning Outcomes**

1. List and define the major pharmacological drugs and common generics used in healthcare.
2. Distinguish between local, systemic, therapeutic, allergic, and side effects of the drugs.
3. Describe the pharmacological action of common drugs and drug categories used to treat each body system, including usage, dosage, adverse effects, contraindications, indications, and key client education information.
4. Identify basic laws and ethics associated with pharmacological preparation and distribution.
5. Describe the principle mechanisms of actions, usage, dosage, adverse effects, contraindications, indications, and key client education information for drug classifications affecting multiple body systems. List several routes of drug administration and describe their advantages and disadvantages.

**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.

**Learning Outcomes**

1. Describe the organization and general plan of the body.
2. Explain the basic structure and function of cells, tissues, and membranes.
3. Identify the structure and functions of the nervous system as part of the body as a whole.
4. Identify the structure and functions of the cardiovascular system as part of the body as a whole.
5. Identify the structure and functions of the respiratory system as part of the body as a whole.
6. Identify the structure and functions of the urinary system as part of the body as a whole.
7. Identify the structure and functions of the digestive system as part of the body as a whole.
8. Identify the structure and functions of the reproductive system as part of the body as a whole.
9. Identify the structure and functions of the skeletal system as part of the body as a whole. 1
10. Identify the structure and functions of the muscular system as part of the body as a whole. 1

11. Identify the structure and functions of the endocrine system as part of the body as a whole. 1
12. Identify the structure and functions of the lymph system as part of the body as a whole. 1
13. Identify the structure and functions of the integumentary system as part of the body as a whole. 1
14. Identify the structure and functions of the sensory system as part of the body as a whole.

**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.

**Learning Outcomes**

1. Classify common diseases and pathologies as they relate to the body systems.
2. Explain causation, pathophysiologic causation, and clinical manifestations of diseases.
3. Describe the etiology, pathology, physical signs, symptoms, complications, and prognosis, as well as the diagnostic procedures and treatment modalities for the major disorders of each body system.

**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. Crosslisted with: OATS 150. Restricted to Community Colleges campuses only.

**Learning Outcomes**

1. Identify and define medical word roots, prefixes, and suffixes and abbreviations.
2. Examine and correctly spell medical terms using the basic elements of medical words.
3. Recall and properly pronounce common medical terms and the terminology related to the body's major organ systems.
4. Identify the primary medical terms used in various medical specialties.
5. Read a medical document and interpret the terminology efficiently and correctly.
6. Write a medical document with proper medical terminology and comprehension.

**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:** HIT 150 or AHS 120.

**Learning Outcomes**

1. Identify and define medical word roots, prefixes, and suffixes and abbreviations.
2. Examine and correctly spell medical terms using the basic elements of medical words.
3. Recall and properly pronounce common medical terms and the terminology related to the body's major organ systems.
4. Identify the primary medical terms used in various medical specialties.
5. Read a medical document and interpret the terminology efficiently and correctly.
6. Write a medical document with proper medical terminology and comprehension.

**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: OAT and HIT majors. Restricted to Community Colleges campuses.

**Learning Outcomes**

1. Apply decision-making and problem-solving skills by setting goals and objectives, self-reflection, and self-assessment.
2. Model soft skills appropriate for a professional business workplace.
3. Determine effective communication in various workplace relationships.
4. Develop career planning skills that include conducting a job search, collecting references, building a resume creating a cover letter, and interviewing techniques.

**HIT 228. Medical Insurance Billing****3 Credits (3)**

Comprehensive overview of the insurance specialist's roll 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. May be repeated up to 3 credits.

**Prerequisite:** 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.

**Learning Outcomes**

1. Distinguish between primary and secondary data, between patient-identifiable and aggregate data, among healthcare databases in terms of purpose and content, and identify the internal and external users and uses of primary and secondary data.
2. Identify the utilization-related activities conducted by quality improvement organizations and explain performance improvement principles and the various ways statistics are used in healthcare.
3. Identify the major ethical principles that guide health information management decision-making and health information leadership roles.

4. Analyze data to identify trends in quality, safety, and outcomes of care.

**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. Restricted to Community Colleges campuses only.

**Prerequisite:** OATS 228.

**Learning Outcomes**

1. Demonstrate the ability to interpret inpatient/outpatient record documentation to identify diagnosis and services/procedures including assessing and managing patient records, and reimbursement and legal issues.
2. Identify and demonstrate and understanding of the information pertinent to accurate insurance coding and reimbursement issues by appropriately applying regulatory agency guidelines.
3. Analyze patient records in order to define diagnoses to properly determine and assign diagnostic codes.

**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. Restricted to Community Colleges campuses only.

**Prerequisite:** HIT 248.

**Learning Outcomes**

1. Demonstrate the ability to interpret inpatient/outpatient record documentation to identify diagnoses and services/procedures including assessing and managing patient records, and reimbursement and legal issues.
2. Define the skills and abilities needed to successfully function as an allied health care professional in various health care settings.
3. Identify and demonstrate an understanding of the information pertinent to accurate insurance coding and reimbursement issues by appropriately applying regulatory agency guidelines.
4. Demonstrate the ability to evaluate documentation to support diagnoses, procedures, tests, and treatment modalities.
5. Demonstrate the ability to monitor the quality of facility coding and abstracting.
6. Identify issues of fraud and abuse by reviewing inpatient and outpatient cases.
7. Demonstrate computer literacy and the ability to use the information processing and fiscal management programs utilized in various medical office environments.
8. Describe and identify why and how professionalism, using good judgment/decision-making skills, and developing the

communications skills for good interpersonal relationships are necessary to achieve success as a medical insurance specialist.

### **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.

#### **Learning Outcomes**

1. Explain the role of the health information manager; as well as the content, function, structure, and uses of health information.
2. Identify the ethical issues associated with health information management and the development of health informatics standards.
3. Distinguish between the major types of information system applications and their general functions as used in healthcare organizations and explain the role of the health information technician (HIT) in information systems planning and development.
4. Analyze the differences among the terms, confidentiality, privacy, and security; identify and describe the greatest threats to the security of health information, the elements of a data security program, and the methods used for minimizing threats to data security.

## **HMRT-HUMAN RIGHTS**

### **HMRT 2110G. Introduction to Human Rights**

#### **3 Credits (3)**

The course provides a basic introduction to international human rights including conceptual foundations and key theoretical debates with attention paid to current events that are shaping justice and human rights. It provides a variety of disciplinary perspectives on human rights including philosophy, socio-legal studies, political science, law, and criminology. The combination of understanding the conceptual foundations, key theoretical debates, and thematic areas in human rights will enable students to understand the evolution of human rights regimes and their influence in society today. The course is broken into four parts. The first part provides an understanding of the historical underpinnings of international human rights and their evolution in society and law. It examines foundational texts on justice and human rights that have shaped our concepts of rights and justice today. The second part focuses on global and regional mechanisms within human rights. Examining these mechanisms helps us understand the legal application and enforcement of human rights globally. The third section focuses on thematic areas in human rights. These thematic areas include: environmental law, international criminal law, refugee, migrants and asylum seekers, international women's rights, economic, social & cultural rights, and transitional justice. The course concludes by focusing on critical perspectives and local issues on human rights.

#### **Learning Outcomes**

1. Understand key theoretical debates on human rights.
2. Describe historical underpinnings of international human rights.
3. Identify different foundational texts in the evolution of justice and human rights.
4. Understand how social and historical contexts have impacted beliefs on justice, rights, and human dignity.
5. Explain thematic areas in international human rights.
6. Understand regional and global multilateral mechanisms in human rights law.
7. Critically examine the efficacy of international human rights.

8. Understand the social, political, economic and other factors that have molded human rights.
9. Gain a better understanding of your own worldviews and opinions towards justice and human rights.

### **HMRT 2125. International Rights of Children**

#### **3 Credits (3)**

This course examines the history, sources and role of international rights of children in the protection of children worldwide. It provides an understanding of the international legal regulatory framework implemented to address the rights of children. The course is broken into two parts. The first part covers the history and development of international rights of children and explores key concepts from children's rights theory. This section also covers current international legal mechanisms in place to protect children worldwide. The second section covers issues in the protection of children's rights. Issues covered include (but not limited to): child labor, child trafficking, armed conflict, war, the right to truth. Lastly the course covers the future of international rights of children.

#### **Learning Outcomes**

1. Understand the history and origins of child protection in international human rights law.
2. Identify key concepts of children's rights theory in international human rights law.
3. Describe major international human rights law established for the protection of children.
4. Understand how international rights of children addresses issues in child exploitation and abuse related to child labor and child trafficking.
5. Explain the rights of children during armed conflict and war.
6. Identify the rights of children to the right to truth.
7. Critically examine the what the future of international rights of children entails when incorporating an understanding of human rights law.
8. Gain a better understanding of your own worldviews and opinions towards the international rights of children.

### **HMRT 2175G. Border Justice & Human Rights**

#### **3 Credits (3)**

This course examines the human rights implications of border practices, migration/refugee patterns, and environmental degradation set amidst increasingly contentious territorial politics, complex population movements, and record-shattering climate change events. Additionally, the course provides context to justice along the U.S./Mexico border as seen through a human rights lens. It examines issues of border conflict around the world. It also explores the history of the U.S.-Mexico border and examines historical and contemporary human rights issues impacting the region. The course is broken into three parts. The first part provides an introduction to the history of the U.S.-Mexico border region. This includes exploring the history of border drawing and its impact on populations living along the border. The second section examines the long history of violence along borders. It examines how border identities develop over time in the midst of violence, community building, and the contested spaces of borders. It also explores how drugs, immigration, and free trade has impacted border regions. Lastly after understanding the history and issues of violence along borders, the last section explores human rights issues of border regions. This section examines how social movements and human rights advocacy have impacted the protection of rights of communities living along borders.

**Learning Outcomes**

1. Explain the historical evolution of border drawing along the U.S.-Mexico border and throughout the world.
2. Identify how colonization impacted the development of border regions.
3. Understand how identity is informed by migration and belonging in the U.S.-Mexico border region.
4. Describe how increased border enforcement and immigrant criminalization has impacted the U.S.-Mexico border region.
5. Understand how drug wars, human trafficking and gendered violence impacts the U.S.-Mexico border.
6. Describe past and current human rights violations taking place along the U.S.-Mexico border and at other borders throughout the world.
7. Understand how transnational advocacy groups and other social movements advocating for human rights have impacted border regions.
8. Gain a better understanding of your own worldviews and opinions towards the U.S.-Mexico border and human rights.

**HMRT 3996. Issues in Human Rights****3 Credits (3)**

The course provides an opportunity to discuss contemporary issues in international human rights, including current events that are shaping justice and human rights. It provides a variety of disciplinary perspectives on human rights including philosophy, socio-legal studies, political science, law, and criminology. The combination of understanding the conceptual foundations, key theoretical debates, and thematic areas in human rights will enable students to understand the evolution of human rights regimes and their influence in society today. It will be taught as a Seminar on problems and conflicts encountered in major human rights issues.

**Learning Outcomes**

1. Understand key theoretical debates on human rights.
2. Describe historical underpinnings of international human rights.
3. Identify different foundational texts in the evolution of justice and human rights.
4. Understand how social and historical contexts have impacted beliefs on justice, rights, and human dignity.
5. Explain thematic areas in international human rights.
6. Understand regional and global multilateral mechanisms in human rights law.
7. Explain issues and approaches in human rights enforcement and policy.
8. Critically examine the efficacy of international human rights.
9. Understand the social, political, economic and other factors that have molded human rights. 1
10. Gain a better understanding of your own worldviews and opinions towards justice and human rights.

**HMRT 4550V. Skills & Ethics for Human Rights Work****3 Credits (3)**

Course topics will vary, but each will cover a specific skill that is important for doing contemporary human rights work. Topics might include: grant writing and fundraising, specific statistical techniques or research methods, forensics and human rights, interviewing of marginalized communities, creating documentary media, or the optimum use of social media. The course is broken into three parts. The first part provides an introduction to the topic of human rights and examines current issues faced by people working in the human rights field. The

second section focuses on development of practical human rights skills. The last section explores ethical dilemmas faced when conducting human rights work

**Learning Outcomes**

1. Explain the practice of human rights work.
2. Identify differences between human rights activism and advocacy.
3. Explain differences between human right and other rights.
4. Understand the nature and practice of human rights data collection.
5. Describe the different research methods used in human rights work.
6. Understand grant writing and fundraising strategies for human rights work.
7. Identify the impact journalism, documentaries, and social media has on human rights work.
8. Understand how decolonizing human rights practices impact human rights work along the U.S.-Mexico border.
9. Critically examine the role human rights work has globally. 1
10. Gain a better understanding of your own worldviews and opinions towards the skills and ethics of human rights work.

**HMRT 4580V. International Environmental Law and Justice****3 Credits (3)**

This course will provide a general introduction to the basic concepts and mechanisms of international environmental law. The course is aimed at providing a foundation of the current international legal framework and principles that govern and regulate environmental law. It explores the root causes of environmental problems and investigates the ways society manages environmental issues via the law that transcend international boundaries and resultantly fall beyond the authority of a single nation. The course is broken into four parts. The first part provides an introduction to the topic and examines current issues impacting environmental law and justice. The section also examines the history and evolution of international environmental law. The second section analyzes the causes associated with environmental problems and describes current norms and policies. The third section explores the roles of governmental and intergovernmental actors and actors beyond the state that participate in international environmental law. The course concludes by examining environmental justice and questions whether environmental law is effective and what are the shortcomings and areas needed for improvement to protect the environment. This section also examines how social movements impact the protection and implementation of environmental law.

**Learning Outcomes**

1. Explain the historical evolution of international environmental law.
2. Identify root causes of environmental problems.
3. Understand the nature and practice of environmental law.
4. Describe the different types of environmental norms.
5. Identify the legal structure of courts and regulators for environmental law.
6. Understand the different jurisdictional spaces and actors for environmental law.
7. Explain the complexities of international environmental governance and regulation.
8. Describe the interconnections of environmental law with other areas of international law, including human rights, humanitarian law, trade and foreign investment.
9. Critically examine the influence of politics on the protection of the environment and establishment of international environmental law. 1

10. Gain a better understanding of your own worldviews and opinions towards the environmental protection and the law.

### **HMRT 4720V. Space Law & Human Rights**

#### **3 Credits (3)**

This course examines the history, sources and role of space law shaping contemporary governance of space activities including weapons in space, freedom of exploration, militarization, surveillance, and corporate accountability. It provides an understanding of international resolutions, principles, regulations and private international and national space laws and policies. The course is broken into two parts. The first part provides an introduction the space law and human rights and examines the evolution of space law. This section also provides understanding on current space law treaties and principles. The second section covers substantive legal issues in outer space law and how human rights intersects with these issues. Issues covered include: weapons in space, corporate responsibility, national security, militarization, and environmental issues.

#### **Learning Outcomes**

1. Understand the history and development of space law.
2. Identify main tenets of space law.
3. Explain key space law treaties and principles.
4. Describe how space law intersects with human rights law.
5. Understand contemporary legal issues in space law and the protection of human rights and the environment.
6. Critically examine the what the future of space law entails when incorporating an understanding of human rights law.
7. Gain a better understanding of your own worldviews and opinions towards the outer space law and human rights.

## **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. May be repeated up to 3 credits.

**Prerequisite:** 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 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.
2. Explain how key concepts and principles serve as the foundation for the Honors College mission and values.
3. 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.

**Prerequisite:** High School GPA of 3.75; or a NMSU cumulative GPA of 3.5 or higher.

**Corequisite:** HNRS 1135L.

#### **Learning Outcomes**

1. Summarize the basic principles of evolution and recognize how they apply to the human species.
2. Recognize the biological and behavioral continuity of humans with all life, and especially other modern primate species.
3. Identify ways in which the human species is biologically and behaviorally unique.
4. Summarize fossil evidence for human evolution.
5. Distinguish the major Paleolithic industries and outline the behavioral and cognitive changes indicated by the fossil and archeological evidence.
6. Critically evaluate popular accounts of human variation and human evolution.
7. Interpret modern human dilemmas (e.g., overpopulation, co-evolution of disease, and genetic engineering) from an evolutionary perspective.
8. 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.
2. Employ principles of Mendelian genetics to determine genotype and phenotype probabilities, and calculate gene, genotype, and phenotype frequencies using the Hardy-Weinberg Equilibrium formula.
3. Demonstrate an understanding of cell structure and functions.
4. Use common lab and anthropometric equipment such as a compound microscope and calipers.
5. Discuss primate evolution, and compare and contrast members of the Primate order in terms of structure, behavior, and phylogeny.
6. 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.
7. Locate and describe the major bones of the human skeleton, and identify characteristics of human skeletons or skulls such as gender, age, and ancestry.
8. Discuss current research in genome analysis of various hominid populations.

#### **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.

**Prerequisite(s):** High School GPA of 3.75; or a NMSU cumulative GPA of 3.5 or higher.

#### **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 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.

**Prerequisite:** A High School GPA of 3.75; or a NMSU cumulative GPA of 3.5 or higher.

#### **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 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. May be repeated up to 4 credits.

**Prerequisite:** A High School GPA of 3.75; or a NMSU cumulative GPA of 3.5 or higher.

#### **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 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.

**Prerequisite:** A High School GPA of 3.75; or a NMSU cumulative GPA of 3.5 or higher.

#### **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 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;
2. Engage with questions of personal and social responsibility as explored in Shakespeare's plays and modern film adaptations;
3. 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:** A High School GPA of 3.75; or a NMSU cumulative GPA of 3.5 or higher.

##### **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:** A High School GPA of 3.75; or a NMSU cumulative GPA of 3.5 or higher.

##### **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.

**Prerequisite(s):** A High School GPA of 3.75; or a NMSU cumulative GPA of 3.5 or higher.

##### **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.

**Prerequisite:** A High School GPA of 3.75; or a NMSU cumulative GPA of 3.5 or higher.

##### **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 2165G. Introduction to Humanities in the 21st Century**

##### **3 Credits (3)**

An exploration of the global humanities according to its various manifestations: environmental, public, digital, and applied.

**Learning Outcomes**

1. Articulate what the humanities are and what role they have played in education throughout the ages
2. Critically analyze and communicate orally and in writing various humanities concepts and global interconnections among peoples and cultures.
3. Describe, through the study of the global humanities, how cultural contexts and human practices influence individuals and societies.
4. Apply the knowledge and skills gained through the study of the global humanities to explore their majors, their career goals, and the responsibilities of individuals in their communities.
5. Demonstrate information literacy and technological skills in researching and presenting themes related to the global humanities.
6. Reflect on the effects of the global humanities on individuals.

**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 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.

**Prerequisite:** A High School GPA of 3.75; or a NMSU cumulative GPA of 3.5 or higher.

**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 2175G. Introduction to Communication Honors****3 Credits (3)**

Study and practice of interpersonal, small group, and presentational skills essential to effective social, business, and professional interaction. May be repeated up to 3 credits.

**Prerequisite:** A High School GPA of 3.75; or a NMSU cumulative GPA of 3.5 or higher.

**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 discourse while recognizing the distinctions among opinions, facts, and inferences.

**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. May be repeated up to 3 credits.

**Prerequisite:** A High School GPA of 3.75; or a NMSU cumulative GPA of 3.5 or higher.

**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.

**Prerequisite:** A High School GPA of 3.75; or a NMSU cumulative GPA of 3.5 or higher.

**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 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.

**Prerequisite:** A High School GPA of 3.75; or a NMSU cumulative GPA of 3.5 or higher.

**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. Students will experience multiple topics by different professors and departments.

## 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. Identify landscape plants by scientific names, including family, genus and specific epithet.
2. Use scientific terminology to accurately describe landscape plant morphology.
3. Illustrate plant family relationships at the family and genus level.

4. Apply landscape design principles and knowledge of plant requirements to arrange plants in a landscape.

**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. Identify landscape plants by scientific names, including family, genus and specific epithet.
2. Use scientific terminology to accurately describe landscape plant morphology.
3. Illustrate plant family relationships at the family and genus level.
4. Apply landscape design principles and knowledge of plant requirements to arrange plants in a landscape.

**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.

**Learning Outcomes**

1. Analyze the interrelationship between lodging, food beverage operations, and the travel and tourism industry.
2. Evaluate the scope of the travel and tourism industry and assess its economic impact at the local, national, and international levels.
3. Investigate and propose opportunities for education, training, and career development in the hospitality industry.
4. Analyze the effects of globalization on the hospitality industry and predict future trends.
5. Critically examine and discuss major factors, developments, and trends that have affected lodging and food service operations in recent years and anticipate their future impact on the industry.
6. Analyze the effects of franchising, management contracts, referral organizations, independent and chain ownership, and condominium growth on the industry, and develop a comparative analysis of their implications.
7. Classify hotels based on their general characteristics and evaluate the distinctive features of each classification.
8. Identify and describe the common divisions or functional areas of hotel organization (rooms, food beverage, engineering, marketing and sales, accounting, human resources, and security), and analyze the interdependence and collaboration among these divisions in achieving organizational goals.

**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.

**Learning Outcomes**

1. Analyze and differentiate the responsibilities for each job description in the front office.
2. Evaluate the significance of important factors in the day-to-day operation of the front office and propose strategies for optimal performance.
3. Explain front office technology and assess its impact on operational efficiency and guest satisfaction.

4. Develop and implement operational procedures/tasks that are critical to the registration process.
5. Demonstrate effective techniques for handling guest complaints and create a set of best practices for complaint resolution.
6. Analyze the key points regarding front office security functions and develop a comprehensive security plan.
7. Define and explain key terms in front office accounting and apply them to real-world scenarios.
8. Analyze the functions and tasks involved in the night audit processes and develop a step-by-step guide for conducting a successful night audit.

**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.

**Learning Outcomes**

1. Explain the concept of "control" and analyze its importance in the management system.
2. Analyze the purposes and applications of standard costs and evaluate the uses of standard cost tools.
3. Evaluate the role of budget standards in planning and control and create cost-volume-profit analysis models for food and beverage operations.
4. Analyze and compare methods for estimating allowable food and beverage costs based on forecasted sales levels.
5. Evaluate subjective and objective menu pricing methods and create menu prices that incorporate profit requirements.
6. Apply principles and procedures important in controlling the purchasing and receiving processes and analyze the need to incorporate quality requirements in purchasing and receiving activities.
7. Analyze sales history records and time series data to create accurate production forecasts.
8. Evaluate the importance of standard recipes (including computerized standard recipes) as production tools and create a plan for incorporating production planning time.
9. Apply the basic formula for calculating cost of sales and analyze sources of information for each component of the formula. 1
10. Analyze the role of analysis, corrective action, and evaluation in the control process, and create a plan for implementing these steps effectively.

**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.

**Learning Outcomes**

1. Analyze the distinctive aspects of marketing within service industries in relation to the intangibility of services, service encounters, service chains, and service quality.
2. Create an appropriate marketing mix to meet guest needs and achieve company goals.
3. Evaluate several methods of segmenting and targeting markets and apply market segmentation criteria effectively.

4. Analyze the kinds of marketing data needed for effective marketing efforts, apply the marketing research process to solve marketing problems, and create marketing information, systems that meet a hospitality company's real marketing needs.
5. Design a product/service mix (or product offer) that meets guest and company needs.
6. Develop and implement a distribution mix of hospitality networks to deliver hospitality products and services effectively and efficiently.
7. Evaluate and apply pricing mix strategies and tactics as an active and critical component of the overall marketing plan.
8. Analyze the components and interrelationships of the communications mix.
9. Evaluate and apply advertising, public relations, personal selling, merchandising, and promotion to better achieve company goals and objectives.

#### **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.

##### **Learning Outcomes**

1. Analyze and differentiate various positions and job descriptions within the housekeeping, maintenance, and security departments.
2. Apply and evaluate various scheduling methods to optimize departmental efficiency.
3. Evaluate the role of the Maintenance department in the success of the operation and propose strategies for effective collaboration with other departments.
4. Identify and classify various types of floor, wall, and ceiling coverings and develop a comprehensive care and maintenance plan for each type.
5. Analyze the sanitation responsibilities of the Housekeeping department and develop a detailed sanitation protocol.
6. Evaluate the importance of an effective security program and design a comprehensive security plan for a hospitality establishment.
7. Investigate and recommend innovative technologies and practices that can enhance the efficiency and effectiveness of housekeeping, maintenance, and security operations.
8. Develop and implement training programs for housekeeping, maintenance, and security staff to ensure consistent quality and adherence to industry standards.
9. Analyze the impact of sustainable practices in housekeeping, maintenance, and security operations and develop a sustainability plan for these departments. 1
10. Evaluate the role of effective communication and collaboration among housekeeping, maintenance, security, and other departments in ensuring guest satisfaction and operational success.

#### **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.

##### **Learning Outcomes**

1. Analyze the economic importance of travel and its impact on local, national, and global economies.

2. Evaluate the historical evolution of travel and its influence on contemporary tourism practices.
3. Identify and explain the roles of various travel and tourism organizations in promoting and regulating the industry.
4. Compare and contrast various modes of transportation, assessing their strengths, weaknesses, and suitability for different types of travel.
5. Investigate and categorize barriers to tourism, proposing strategies to mitigate their impact on the industry.
6. Develop a comprehensive understanding of the global tourism landscape, including popular destinations, emerging markets, and niche travel segments.
7. Analyze the social, cultural, and environmental impacts of tourism on host communities and propose sustainable tourism practices.
8. Evaluate the role of technology in shaping the travel and tourism industry, including its influence on booking systems, customer experiences, and destination marketing.
9. Create a hypothetical travel itinerary that showcases an understanding of transportation logistics, destination management, and customer preferences. 1
10. Assess the importance of customer service in the travel and tourism industry and develop strategies for delivering exceptional experiences to travelers.

#### **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.

##### **Learning Outcomes**

1. Apply the management process to business activities, analyzing its effectiveness in achieving organizational goals.
2. Evaluate the importance of the communication process in relation to productivity and morale and develop strategies for effective communication within the organization.
3. Analyze and select appropriate recruitment channels and apply interviewing and screening skills to identify and hire the most qualified employment candidates.
4. Develop and implement effective orientation and training programs to prepare employees for their roles and responsibilities.
5. Integrate standard operating procedures into performance evaluation processes and utilize coaching and ongoing training techniques to support employee development.
6. Evaluate and apply motivational tools to maximize productivity levels while implementing labor cost reduction strategies.
7. Analyze special management concerns, including EEO policy, sexual harassment, safety and security, ethics, substance abuse, and unions, and develop policies and procedures to address these issues effectively.
8. Apply conflict management, communication, and motivational skills to build and lead effective work teams.
9. Evaluate professional development needs and future trends and create strategies for managing change within the organization. 1
10. Design and implement a performance management system that aligns with organizational objectives, incorporates employee feedback, and supports continuous improvement.

**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.

**Learning Outcomes**

1. Identify and analyze the types of caterers and customer markets, evaluating their unique characteristics and needs.
2. Evaluate and apply various marketing methods used in catering to effectively reach target audiences and promote catering services.
3. Analyze the process of client negotiation and problem resolution and develop strategies for effective communication and conflict management in catering.
4. Apply knowledge of menu planning, truth-in-menu guidelines, pricing, and types of meal functions to create and execute successful catering events.
5. Evaluate beverage service considerations, including pricing, types of beverage functions, liquor laws, and third-party liability, and develop strategies for responsible and profitable beverage service in catering.
6. Analyze special set up considerations, such as space requirements, cleaning and maintenance, equipment, and client services (audiovisual, entertainment, and lighting), and create comprehensive event plans that address these factors.
7. Evaluate recruitment, orientation, training, and compensation practices in catering, and develop strategies for building and managing effective catering teams.
8. Apply understanding of the banquet event order, contract, change order, and other related reports to effectively manage catering events and maintain accurate documentation.
9. Analyze payroll cost control techniques, credit management, and food and beverage cost control methods, and apply these concepts to optimize profitability in catering operations. 1
10. Develop and implement a comprehensive risk management plan for catering operations, addressing issues such as food safety, liability, and emergency preparedness.

**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.

**Prerequisite:** HOST 203.

**Learning Outcomes**

1. Analyze and apply government and industry standards and specifications to ensure compliance and maintain quality in food service operations.
2. Create detailed specifications for a product or service, taking into account operational requirements, quality standards, and cost considerations.
3. Evaluate the appropriateness of bid purchasing programs for various operational types, considering factors such as volume, frequency, and supplier relationships.
4. Analyze and select the most cost-effective bids by compiling and calculating relevant data, such as price, quality, and delivery terms.
5. Identify and assess the benefits of labor-saving equipment in kitchen operations, and develop strategies for their effective implementation and use.
6. Design and implement a procedural method for improving kitchen efficiency, considering factors such as workflow, ergonomics, and resource optimization.

7. Analyze the inherent dangers found in kitchens and develop a comprehensive safety plan to mitigate risks and protect staff and customers.
8. Identify the major microbial causes of Food Borne Illnesses (FBI), and evaluate their origins, transmission methods, and potential impacts on public health.
9. Apply food safety principles and develop a comprehensive food safety management system to minimize hazards in kitchen environments. 1
10. Evaluate the role of state and local health departments, CDC, WHO, and the HACCP model in controlling Food Borne Illnesses, and incorporate their guidelines and best practices into kitchen operations.

**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.

**Learning Outcomes**

1. Identify and analyze the major requirements for successful event production, including organizational, financial, and operational factors.
2. Create a marketing plan for an event, incorporating strategies for target audience segmentation, promotional activities, and ROI measurement.
3. Demonstrate and apply effective customer service techniques and negotiating skills in the context of event planning and implementation.
4. Design and optimize the layout and functional space for an event, considering factors such as guest flow, accessibility, and aesthetic appeal.
5. Analyze the importance of financial contracts and controls in event planning, and develop strategies for budgeting, cost management, and revenue generation.
6. Evaluate the legal responsibilities of event planners and develop a risk management plan to mitigate potential liabilities and ensure compliance with relevant regulations.
7. Assess and select appropriate vendors and suppliers for events, considering factors such as quality, reliability, and cost-effectiveness.
8. Develop and implement a comprehensive project management plan for an event, including timelines, milestones, and contingency plans.
9. Analyze post-event data and feedback to identify areas for improvement and develop strategies for enhancing future event outcomes. 1
10. Evaluate the sustainability and environmental impact of events and develop strategies for incorporating Eco-friendly practices into event planning and execution.

**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.

#### **Learning Outcomes**

1. Analyze the steps of the HACCP process and evaluate the significance of each in ensuring food safety in hospitality operations.
2. Design an effective accident prevention program for a hospitality operation, incorporating strategies for hazard identification, risk assessment, and employee training.
3. Evaluate how equipment and facility design impacts employee and guest safety and propose improvements to enhance safety in hospitality settings.
4. Develop and implement loss control/theft prevention policies, considering factors such as asset protection, inventory management, and employee accountability.
5. Create a comprehensive emergency response procedure for hotels and restaurants, including protocols for evacuation, communication, and coordination with local authorities.
6. Analyze the impact of 9/11 on security in the hospitality industry and evaluate the effectiveness of subsequent security measures and policies.
7. Assess the importance of cyber-security in the hospitality industry, and develop strategies for protecting sensitive data, preventing breaches, and responding to cyber incidents.
8. Apply principles of risk management to identify and mitigate potential safety and security threats in hospitality operations.
9. Evaluate the role of technology in enhancing safety and security in the hospitality industry, and propose the adoption of innovative solutions, such as biometrics and AI-based surveillance. 1
10. Analyze the legal and ethical implications of safety and security practices in the hospitality industry and develop policies that prioritize guest and employee well-being while complying with relevant regulations.

#### **HOST 220. Experiential Travel**

##### **1-3 Credits (1-3)**

Course provides an opportunity for students to plan, prepare for and experience travel to destinations they might not otherwise have visited. Students experience local culture and peoples. Restricted to Community Colleges campuses only. May be repeated up to 9 credits.

**Prerequisite:** HOST 201 or consent of instructor.

#### **Learning Outcomes**

1. Evaluate the marketing and promotional material used by the destination service providers to determine the target market demographics.
2. Recognize and discuss the cultural variations of the host venue and their impact on tourism.
3. Develop plans for cost effective utilization of the services of transportation, activity and lodging providers.
4. Prepare a detailed itinerary for the planned travel to manage time maximizing traveler's experiences.
5. Discuss the economic, cultural and political issues in the destination country and their impact on the tourism industry.
6. Describe customer service strengths and weaknesses experienced at the destination during the travel event.

#### **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.

#### **Learning Outcomes**

1. Demonstrate proficiency in performing assigned tasks and responsibilities and contribute meaningfully to the internship host company's operations.
2. Evaluate personal strengths, weaknesses, and areas for improvement based on feedback received during the internship and develop a professional development plan.
3. Create a portfolio showcasing the skills, knowledge, and experiences gained during the internship, and reflect on how these align with career goals and industry expectations.
4. Develop a professional network within the hospitality industry, and leverage internship experiences to explore career opportunities and pathways.
5. Evaluate the internship experience holistically and provide constructive feedback and recommendations to the internship host company and the academic program for continuous improvement.

#### **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.

#### **Learning Outcomes**

1. Analyze the historical evolution of hotels and evaluate how they have developed into their current form.
2. Describe and explain the basic operational structure of lodging operations.
3. Analyze the different divisions in hotels and evaluate how they interact and contribute to the overall success of the property.
4. Evaluate the functions of the Front Office area and assess its impact on other departments and overall guest experience.
5. Analyze the various functions of the housekeeping department and develop strategies for optimizing its efficiency and effectiveness.
6. Evaluate the role of the sales and marketing department in driving occupancy and revenue.
7. Identify and explain the duties of the Human Resources department in a lodging operation and propose strategies for effective talent management and employee engagement.
8. Analyze the operation of a Food Beverage department in a lodging property, and develop strategies for enhancing its profitability and guest satisfaction.
9. Evaluate the importance of safety and security in a hotel operation and design a comprehensive risk management plan that addresses potential threats and emergencies. 1
10. Compare and contrast the various types of properties in the specialty hotel/lodging market, and analyze their unique characteristics, target markets, and operational requirements.

#### **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.
2. Identify and explain the role of the elements of the destination mix.
3. Identify the potential socio-cultural, economic and environmental impacts of tourism.
4. Identify and describe the role of key governmental and nongovernmental organizations in tourism.
5. Describe basic tourism planning and development principles.
6. Discuss the unique challenges of tourism marketing and standard marketing methods.
7. Describe the components of the tourism distribution system.
8. Demonstrate a basic understanding of traveler behavior including motivations and barriers to travel.
9. Identify major factors that influence traveler flows. 1
10. Describe the role of major modes of transportation in the tourism system. 1
11. Identify and describe the three pillars of sustainable tourism development. 1
12. Explain personal and social responsibility as it relates to sustainable tourism development. 1
13. 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. 1

10. Identify and solve managerial problems 1

11. Manage a diverse workforce and develop positive employee relations to reduce turnover.

#### **HRTM 1310. 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.

##### **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.
6. Also meets KRDNs for the Accreditation Council for Education in Nutrition and Dietetics (ACEND).

#### **HRTM 1320. 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 1310 before enrolling in the course must have proof of valid ServSafe Food Protection Manager certificate. May be repeated up to 3 credits.

**Prerequisite:** HRTM 1130 or FSTE 2110G.

**Prerequisite/Corequisite:** HRTM 1310.

##### **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 1
10. Demonstrate how to provide dining room service with proper etiquette 1
11. Demonstrate safe work habits, identify safety hazards, and employ preventative safety measures. 1



12. Maintain positive relations with fellow students and faculty through teamwork. 1
13. Exhibit appropriate work habits and attitudes; demonstrate a willingness to compromise. 1
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 1105. Introduction to Fundamentals of Refrigeration****4 Credits (3+2P)**

Demonstrate the ability to perform HVAC/R Technician duties in a safe manner. Accurately perform HVAC/R related calculations and interpret results for the purpose of diagnosis, repair, or installation of HVAC/R equipment and systems. Professionally communicate in oral and written forms. Demonstrate the use of current industry techniques including tools, testing equipment, manufacturers' apps. Determine the appropriate ethical action that should occur in a given circumstance. Work effectively in a team-based environment. Possess a mastery of the refrigeration cycle and its components.

**Learning Outcomes**

1. Demonstrate working knowledge of heat theory, safety, and temperature/pressure/volume gas laws as they relate to the refrigeration cycle.

2. Identify and demonstrate heat transfer by conduction, convection, and radiation and describe their effects on temperature change using latent and sensible heat transfer.
3. Safely demonstrate the refrigeration process using system components such as compressors, condensers, evaporators, metering (expansion) devices and accessories.
4. Demonstrate a knowledge of industry standards for system installation of equipment and tubing and safely demonstrate tubing operations including cutting, reaming, flaring, swaging, and brazing.

**HVAC 1110. Introduction to Fundamentals of Electricity****4 Credits (3+2P)**

Introduces the student to electrical theory, generation and distribution, OHM's Law, series and parallel circuits, A/C / D/C, practical applications and electrical safety.

**Learning Outcomes**

1. Demonstrate the use of industry practices: safety, use of lockout/tagout, diagnosing, repairing, and installing electrical components in HVAC/R equipment and systems; use of test instruments both digital and analog, comprehension of wiring diagrams, proper use of tools specific to the industry, mastery of electrical theory and circuits, single-phase and three-phase applications; use of symbols and terminology, and the ability to communicate professionally in oral and written forms.

**HVAC 1111. 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.

**Learning Outcomes**

1. Use oral communication effectively, use written communication effectively.
2. Accurately perform calculations related to refrigeration.
3. Accurately perform calculations related to refrigeration.
4. Accurately perform calculations related to air conditioning.
5. Accurately perform conversions between various units.

**HVAC 1125. 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.

**Prerequisite:** HVAC 1105 and HVAC 1110, or consent of instructor.

**Learning Outcomes**

1. Use oral communication and written communication effectively.
2. Determine the appropriate ethical action that should occur in a given circumstance.
3. Perform technician duties safely.
4. Service refrigeration systems, repair refrigeration systems, maintain refrigeration systems.
5. Accurately perform calculations related to refrigeration.
6. Work effectively as a team.
7. Troubleshoot refrigeration systems.
8. Accurately perform conversions between various units.

**HVAC 1233. 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.

#### Learning Outcomes

1. Professionally communicate in oral and written forms.
2. Work effectively in a team-based environment.
3. Demonstrate the ability to perform HVAC/R Technician duties in a safe manner.

#### HVAC 1238. Introduction to Sheet Metal Fabrication

##### 4 Credits (3+3P)

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.

#### Learning Outcomes

1. Professionally communicate in oral and written forms.
2. Demonstrate the ability to perform HVAC/R Technician duties in a safe manner.
3. Demonstrate sheet metal design and layout techniques to fabricate ducting and associated fittings accurately.
4. Determine the appropriate ethical action that should occur in a given circumstance.
5. Accurately perform HVAC/R related calculations and interpret results for the purpose of diagnosis, repair, or installation of HVAC/R equipment and systems.

#### HVAC 1243. 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 1125 or consent of instructor.

#### Learning Outcomes

1. Use oral and written communication effectively.
2. Work effectively as a team.
3. Determine the appropriate ethical action that should occur in a given circumstance.
4. Troubleshoot heating systems accurately perform conversions between various units, accurately perform calculations related to heating systems.

#### HVAC 1245. Gas Heating Furnaces

##### 4 Credits (3+2P)

The study and application of gas furnaces including installation, operation, service, maintenance and controls. The students will learn about natural gas, and electric heating systems used for residential and/or light commercial heating systems including furnace and boiler package systems and alternative heating sources. Highlights electrical and electronic trouble shooting, service, maintenance, repair and replacement of residential and light commercial heating systems. The course will include service, maintenance and troubleshooting.

#### Learning Outcomes

1. Identify the components and describe the sequence of operation of gas furnaces.
2. Use proper procedures to troubleshoot gas furnaces.
3. Describe and demonstrate proper procedures for conducting service calls and delivering customer service.
4. Demonstrate the use of proper procedures for preventative maintenance of gas furnaces.

5. Describe how gas pressure is measured, what unit of measurement is used and what is the purpose of a water manometer, gas combustion, four means of proof flame, why there is a fan-on and fan-off delay, flue gas venting systems, gas piping adjacent to the gas valve, calculate the correct orifice size, derate sea level input for altitude, calculate the correct gas pipe sizing for a one-story building with several gas appliances.

#### HVAC 1250. Heat Pump Systems

##### 4 Credits (3+2P)

The student will acquire the knowledge to identify heat pump components, explain the sequence of operation, and develop troubleshooting skills for both mechanical and electrical issues associated with reverse cycle refrigeration systems used in comfort heating and cooling, a while utilizing the proper tools and equipment.

#### Learning Outcomes

1. Professionally communicate in oral and written forms.
2. Work effectively in a team-based environment.
3. Accurately perform HVAC/R related calculations and interpret results for the purpose of diagnosis, repair, or installation of HVAC/R equipment and systems.
4. Demonstrate the use of current industry techniques and equipment to diagnose HVAC/R systems and perform appropriate repairs.
5. Demonstrate the use of current industry techniques and equipment to perform the service and maintenance of HVAC/R equipment and systems.
6. Demonstrate the use of current industry techniques and equipment in the installation of HVAC/R equipment and systems.
7. Determine the appropriate ethical action that should occur in each circumstance.

#### HVAC 1410. Commercial Refrigeration Systems

##### 4 Credits (3+2P)

This course covers the installation, service, and maintenance of a wide range of refrigeration equipment, including reach-in and walk-in coolers, ice machines, ice cream machines, as well as mechanical and electrical troubleshooting of refrigeration systems. Encompassing the service and maintenance of commercial refrigeration equipment, which involves procedures for evacuation and charging, understanding electrical diagrams, and handling compressors and related accessories.

**Prerequisite:** HVAC 1125 or consent of instructor.

#### Learning Outcomes

1. Read and interpret model numbers, nomenclature, and component capacities.
2. Use industry techniques and equipment for diagnosing and repairing HVAC/R systems.
3. Perform service and maintenance on HVAC/R equipment and systems.
4. Determine ethical actions in given circumstances.
5. Demonstrate safe HVAC/R Technician duties.
6. Work effectively in a team-based environment.
7. Accurately perform HVAC/R calculations and interpret results.
8. Communicate professionally, both orally and in writing.
9. Perform leak checks, repairs, recovery, evacuation, and recharging of refrigeration systems. 1
10. Identify components and troubleshoot parallel refrigeration systems. 1
11. Start up, troubleshoot, and explain Lab Systems.1
12. Address various refrigeration accessories. 1

13. Assemble, pipe, pressure test, and operate systems. 1
14. Troubleshoot refrigeration defrost timer systems. 1
15. Calculate heat gain and specify refrigeration systems. 1
16. Understand the use of water and brines as secondary refrigerants. 1
17. Diagnose and repair refrigerant side problems. 1
18. Set controls for temperature regulation. 1
19. Locate information in reference sources. 2
20. Evaluate system performance using data. 2
21. Size and assemble refrigeration systems to meet customer needs. 2
22. Handle refrigerant, including recovery, recycling, and reclamation. 2
23. Identify and troubleshoot various safety controls. 2
24. Troubleshoot line voltage thermostats and compressor contactors. 2
25. Diagnose and repair air side problems. 2
26. Troubleshoot electrical problems using schematics. 2
27. Use pressure/enthalpy charts and understand the refrigeration cycle.

#### **HVAC 2098. Heating, Ventilating, Air Conditioning, and Refrigeration Field Experience**

##### **1 Credit (1)**

The course will provide students with actual hands-on exposure to HVAC/R fieldwork, offering insights into the expectations of field technicians as they shadow experienced HVAC/R professionals. Students will gain practical experience through supervised training at an approved Heating, Ventilation, Air Conditioning, and Refrigeration workplace.

##### **Learning Outcomes**

1. Effectively utilize verbal and written communication, collaborate efficiently within a team, diagnose issues in refrigeration systems, precisely execute unit conversions, accurately conduct refrigeration-related calculations, identify the ethical course of action in specific situations, safely execute technician responsibilities, provide maintenance for refrigeration systems, conduct repairs on refrigeration systems, and service refrigeration systems.

#### **HVAC 2210. 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. HVAC 1125 or consent of instructor.

**Prerequisite:** HVAC 1125 or consent of instructor.

##### **Learning Outcomes**

1. Professionally communicate in oral and written forms.
2. Determine the appropriate ethical action that should occur in a given circumstance.
3. Demonstrate the ability to perform HVAC/R Technician duties in a safe manner.
4. Demonstrate the use of current industry techniques and equipment in the installation of HVAC/R equipment and systems.
5. Demonstrate the use of current industry techniques and equipment to perform the service and maintenance of HVAC/R equipment and systems.
6. Accurately perform HVAC/R related calculations and interpret results for the purpose of diagnosis, repair, or installation of HVAC/R equipment and systems.
7. Demonstrate the use of current industry techniques and equipment to diagnose HVAC/R systems and perform appropriate repairs.
8. Work effectively in a team-based environment.

#### **HVAC 2990. Practicum**

##### **3 Credits (3)**

Working in the field with journeymen service technicians. Develop and apply job skills.

##### **Learning Outcomes**

1. Varies.

#### **HVAC 2996. Special Topics**

##### **1-6 Credits**

Topics to be announced in the Schedule of Classes. May be repeated up to 12 credits.

##### **Learning Outcomes**

1. Varies.

## **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. May be repeated up to 3 credits.

**Prerequisite:** MATH 1220G.

##### **Learning Outcomes**

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.

#### **I E 200. Special Problems-Sophomore**

##### **1-3 Credits**

Directed individual projects. May be repeated up to 3 credits.

##### **Learning Outcomes**

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. An ability to communicate effectively with a range of audiences.

#### **I E 217. Manufacturing Processes**

##### **3 Credits (2+3P)**

Introduction to manufacturing and processing, including: casting, forming, and machining. Emphasis on creating products with the appropriate techniques. Crosslisted with: E T 217.

**Prerequisite(s):** A grade of C- or better in either E T 110 or ENGR 110 and C- or better in MATH 1220G.

##### **Learning Outcomes**

1. Identify the different manufacturing processes and their applications.
2. Use, set up, and calibrate measuring tools.
3. Apply geometric tolerances to engineering drawings.
4. Demonstrate basic knowledge of materials and material properties.
5. Demonstrate basic knowledge of GM codes and their application.
6. Proficiently use CAM packages such as SolidWorks CAM.
7. Identify different tooling, their use, and manufacturing application.

# 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, agricultural, 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, maintain and repair 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, maintain 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, peristaltic, 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 demensioning and tolerancing will 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.

## **INST-INSTRUMENT & CONT TECH**

#### **INST 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: Instrumentation and Control Technology majors. Restricted to Carlsbad campus only.

##### **Learning Outcomes**

1. Explain the different pieces of equipment used in moving fluids through a process plant such as piping, valves, pumps, compressors, motors, engines, turbines, and power transmission devices. Explain the purpose of each component. Understand the applications for the different types of equipment in each classification and their operating principles.
2. Explain the different types of heat exchangers and cooling towers used in the Process Industry as well as their components. Describe their operating principles and the operator's role in their operation.
3. Explain the different types of boilers and furnaces as well as their components. Describe their operating principles and the operator's role in their operation.
4. Explain the function of filters and dryers along with their principles of operation and the operator's role in their operation.
5. Explain the different types of vessels used in the process industry and well as their components and auxiliary systems. Define what happens internally in the different vessels.
6. Demonstrate reading Process Flow Diagrams and Piping and Instrumentation Diagrams.
7. Apply terms used when describing the various pieces of equipment

#### **INST 165. Equipment Processes** **4 Credits (4)**

This course introduces Thermal Energy and Mechanical alignment in equipment and machinery components. Students will learn the operation, maintenance, and troubleshooting of these types of equipment. Consent of Instructor required. Restricted to: Instrumentation and Control majors. Restricted to Carlsbad campus only.

##### **Learning Outcomes**

1. Explain how Thermal Process System works.
2. Identify parts of Thermal System and Steam machines.

3. Identify troubleshooting of thermal machine.
4. Explain the steps of how to operate the Thermal Systems

#### **INST 205. Programmable Logic Controllers and Applications** **4 Credits (4)**

This learning system is set up in a self-directed format where students can proceed forward at their own pace. The directions are provided in a series of Learning Activity Packets (LAPs), which include text and lab activity directions. LAPs book will be handed out at the start of every class day and must be returned before the class day begins. This learning system can be used as a stand-alone teaching learning system within any class to give hands-on experience in electrical systems. Computer Literacy and internet literacy is required to enroll in this course. Restricted to: Instrumentation and Control Technology majors. Restricted to Carlsbad campus only.

##### **Learning Outcomes**

1. Explain the basics of PLCs.
2. Describe how PLCs are used in industrial environments.
3. Demonstrate ability to program a PLC unit to solve a problem

#### **INST 251. Instrumentation and Measurement** **5 Credits (5)**

The overall aim of this course is to present the students with the basic principles and techniques required for the design and analysis of measurement systems. The course introduces the theory of measurement as well as the sensors and instruments typically used for measuring various physical quantities. Restricted to: Instrumentation and Control Technology majors. Restricted to Carlsbad campus only.

##### **Learning Outcomes**

1. Understand measurement principles and apply them within measurement systems
2. Select and specify suitable instrumentation for measurement of physical quantities
3. Analyze and interpret experimental data
4. Perform analog and digital signal processing
5. Identify various sensor technologies and their use in measurement systems

## **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.

- Identify patterns of cultural behavior or customs in Japan, including gestures, greetings, and body language.
- 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**

- Understand and utilize in more depth the sound system of the Japanese language.
- Gain a greater understanding of Japanese scripts.
- Utilize expanded vocabulary in conversation.
- Converse and write on topics related to personal, social, geographical, and political life.
- Comprehend both artificial and authentic written and aural texts of longer, but still brief length, such as personal letters, messages, journals, and narrative accounts.
- Comprehend and use essential and more complex grammatical concepts.
- Continue to develop a sense of culturally appropriate conduct.
- 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**

- Participate in conversations on familiar topics, such as applying part-time job, gift giving/receiving, planning a trip, lost and found, using sentences and short series of sentences.
- Handle short social interactions in everyday situations by asking and answering a variety of questions.
- Usually say what they want to say about themselves and their everyday life.
- Write on a variety of familiar topics in Japanese characters using connected sentences.
- Understand the main idea in messages and presentations in Japanese on a variety of topics related to everyday life and personal interests and studies.
- Sometimes understand the main idea of conversations that they overhear.
- Understand the main idea of texts in Japanese characters related to everyday life and personal interests or studies.

- 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**

- 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.
- Usually describe people, places, and things, and talk about events and experiences in various time frames.
- Handle social interactions in everyday situations, sometimes even when there is an unexpected complication.
- Write about topics related to school, work, and community in a generally organized way in Japanese characters.
- Write some simple paragraphs in Japanese characters about events and experiences in various time frames.
- Easily understand the main idea in messages and presentations on a variety of topics related to everyday life and personal interests and studies.
- Usually understand a few details of what they overhear in conversations, even when something unexpected is expressed.
- Sometimes follow what they hear about events and experiences in various time frames.
- 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. 1
- Describe and make comparisons between cultures about beliefs, behaviors and cultural artifact in Japan. 1
- 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.

#### **JAPN 320. Oral Practicum in Japanese**

##### **1-3 Credits**

Service training for facilitators leading informal conversation groups in Japanese. May be repeated up to 4 credits.

**Prerequisite:** fluency in Japanese and consent of instructor.

#### **JAPN 453. Independent Studies in Japanese**

##### **1-3 Credits (1-3)**

Individualized, self-paced projects for advanced students. May be repeated up to 6 credits.

## **JOUR-JOURNALISM (JOUR)**

#### **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. Media Writing I**

##### **3 Credits (2+2P)**

Introduction to media writing basics including news writing for print and web, feature writing, sports writing and writing for public relations. Course emphasizes fundamental news values, journalism ethics and Associated Press style. Restricted to all Campuses. May be repeated up to 3 credits.

##### **Learning Outcomes**

1. Know and put into practice news writing basics including the five W's, inverted pyramid, basic news leads, quotations, interviews, attributions and cutlines.
2. Know how to cover scheduled and breaking news events, and put knowledge into practice.
3. Know how to write for different media, including print, web and broadcast, and put knowledge into practice.
4. Know fundamentals of writing news stories, features, editorials, obituaries, and press releases, and put knowledge of each into practice.
5. Develop and practice basic copy editing skills.

#### **JOUR 201. Introduction to Multimedia Journalism**

##### **3 Credits (2+2P)**

Introduction to journalistic storytelling using text, photos, audio, video and infographics. Students produce their own multimedia stories in intensive, hands-on environment using digital cameras and audio recorders, mobile phones, external microphones and digital editing software applications including Adobe Premiere Pro, Audition and Photoshop. May be repeated up to 3 credits.

##### **Learning Outcomes**

1. Learn how to recognize and accurately define multimedia journalism.
2. Improve visual literacy by viewing and analyzing a variety of work produced by professional multimedia journalists.
3. Know the basic requirements and parts of a story, and know how to map and structure a story.
4. Know and put into practice news writing basics including the five W's.
5. Know what makes a good image, and put into practice composing and framing photographs and videos.
6. Understand and put into practice still photography, video and audio capture and editing fundamentals using a variety of tools.
7. Know how to combine different media to create a logical and effective story.

#### **JOUR 210. Copyediting**

##### **3 Credits (2+2P)**

Introduction to various aspects of copyediting with an emphasis on accuracy and style. Includes hands-on, directed practice in editing for Associated Press style, punctuation and grammar. Includes headline and outline writing. May be repeated up to 3 credits.

**Prerequisite:** JOUR 110.

##### **Learning Outcomes**

1. Know and put into practice news writing basics including the five W's, inverted pyramid, basic news leads, quotations, interviews and attributions.
2. Know fundamentals of writing news stories, sports stories, features and editorials, and put knowledge of each into practice.
3. Know how to write for different media, including print, web and social media, and put knowledge into practice.

4. Develop and practice basic copy editing skills.
5. Understand fundamentals of media law and ethics, and know basic press rights.
6. Understand basic math principles used by reporters.
7. Practice and understand the importance of meeting deadlines.
8. Develop a habit of consuming news and monitoring daily headlines.

## **L SC-LIBRARY SCIENCE (L SC)**

#### **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 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 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 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 Grading (S/U, Audit). Restricted to Dona Ana campus only.  
**Prerequisite(s):** Consent of instructor.

#### **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 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. 1
10. 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. K) 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.

#### Learning Outcomes

1. Explain the foundations of today's juvenile justice system - including the history and philosophy behind contemporary practices.
2. Identify and explain theories of juvenile offending and victimization.
3. Communicate what risk and protective factors contribute to juvenile victimization and offending.
4. Describe juvenile involvement with police, courts, and corrections.
5. Compare and contrast the effectiveness of interventions that can prevent delinquency or decrease recidivism rates.
6. Articulate and analyze potential avenues for reforming the juvenile justice system.
7. Exhibit familiarity and comfort with original source materials in the field of juvenile delinquency.

8. Demonstrate competency in writing about juvenile delinquency, utilizing original source materials.

### 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.

#### Learning Outcomes

1. Define and discuss the definition of police patrol and operations including their significance within the criminal justice system.
2. Identify and discuss the special proceedings in the criminal law process including detention, arrest, as well as search and seizure.
3. Explain and discuss the exceptions to search warrant requirements including stop and frisk, search incident to arrest, consent searches, plain view doctrine, search and seizure of vehicles, and containers, as well as abandoned property.
4. Identify and explain the police patrol functions and responsibilities and the need for building credibility by maintaining ethics and integrity in the application of law.
5. Identify and discuss the most frequent incidents encountered by the law enforcement officer and the suggested method for handling.
6. List and discuss the methods, modes and techniques of conducting police patrol including goals of crime detection, keeping the peace, maintenance of equipment, and their impact on the community.
7. Review and discuss the New Mexico Uniform Traffic Laws including apprehension methods of citation, and traffic investigations.

### 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.

#### 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 affecting the decision-making process.
9. Analyze and discuss the role of effective communications in a police organization including negotiations and conflict resolution. 1
10. Explain and analyze the role of Human Resources in the organization including their role in the recruitment and selection process, training, performance and evaluations, promotions, and assessment centers. 1
11. Discuss the role of police unions and explain their significance in labor relations.



**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.

**Learning Outcomes**

1. Describe the rationale for the creation of the Department of Homeland Security.
2. Analyze the purpose of the DHS, its component agencies, and their specific function and role.
3. Understand and discuss the politico-social ramifications of DHS, including legal complications and issues.
4. Discuss terrorist organizations - their rationale, motivation, methodology, and its impact on DHS.
5. Discuss intelligence efforts, to include counter-intelligence, both within the United States and internationally.
6. Describe and analyze the creation of the United States Department of Homeland Security in its proper historical context.
7. Describe and analyze methodologies utilized by DHS to achieve its goals.
8. Describe and analyze the impact of security measures on American politics, culture, and international relations.

**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.

**Learning Outcomes**

1. Students will analyze the application of the constitutional case studies and their relationships to due process.
2. Students will analyze the relationship between ethics and morality in relation to Criminal Justice and Law Enforcement practices.
3. Students will demonstrate how to conduct a traffic stop and felony stop.
4. Students will be able to perform a standardized field sobriety test.
5. Students will demonstrate how to take measurements at a crash scene and draw a field sketch.
6. Students will research online for medi and department of motor vehicle documents and present to the class.
7. Students will complete a FEMA online class.

**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.

**Learning Outcomes**

1. Explain what constitutes evidence, including rules of evidence and role of the prosecution and defense.
2. Analyze the sequence of events in a typical criminal trial, from arrest through pretrial including the use of witnesses and types of questioning allowed during trial.
3. Identify and explain the basic concepts of evidence used in the American legal system.

4. Explain the general concepts involving witnesses' competency and privileged communications.
5. Analyze the basic elements including credibility and impeachment as it relates to serving as both a lay and expert witness.
6. Explain the rules and exceptions to hearsay testimony.
7. Discuss and explain the law of evidence as it relates to statements including admissions and confessions made by the accused in a criminal case.
8. Analyze the Fourth Amendment as it relates to the law of search and seizure, and the exclusionary rule as it relates to lineups and other identification procedures.
9. Discuss and explain the rules surrounding circumstantial evidence and admissibility of other crimes, acts, or wrongs.

**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 an overview in types of harm, explosive weapons, chemical weapons, biological weapons and radiological weapons. Restricted to: Community Colleges only.

**Learning Outcomes**

1. Define Terrorism.
2. Explain the various harm threats that pose a significant risk to response personnel.
3. Define the response challenges terrorism acts pose to response personnel.
4. Explain the management of terrorism incidents.
5. Describe the various materials used in criminal/terrorist acts.
6. Explain the importance of developing in-depth response plans.
7. Explain the importance of preparing for terrorist acts.
8. Describe the various locations that may be subject to terrorist acts.
9. Describe the warning signs that may indicate a terrorist attack. 1
10. Explain the consideration that responders face during crime scene management. 1
11. Discuss the self-protective measures used by response personnel. 1
12. Explain the decontamination process involving weapons of mass destruction.

**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.
2. Competence in the legal elements of constitutional, criminal, and substantive law, rules of evidence, search and seizure, and the role of the courts in the adjudication of the law in 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.

### **LAWE 298. Independent Study**

#### **3 Credits (3)**

Individual studies directed by the consenting faculty with prior approval of the department chair. 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

**Prerequisite(s):** Sophomore standing with a 3.0 or better GPA.

#### **Learning Outcomes**

1. Obtaining foundational skills in the administration of justice by differentiating the role of police and corrections in contemporary America.
2. Competence in the legal elements of constitutional, criminal, and substantive law, rules of evidence, search and seizure, and the role of the courts in the adjudication of the law in 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 21 st 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.
7. Effective communication, orally and in writing, using appropriate references and technologies.
8. Analytical and critical thinking skills when solving complex issues in criminology and the criminal justice system.
9. Competence using and applying appropriate criminological theories on crime causation. 1
10. Competence in understanding and describing how gender, race, ethnicity, age, social class, and sexuality contribute to differing experiences in the criminal justice system. 1
11. Competence in understanding how the inter-dependence of the major components of the criminal justice system (i.e., police, courts, correctional agencies) affect victims, offenders, justice professionals, and society. 1
12. Competence in understanding and applying the fundamental elements of both criminal and constitutional law. 1
13. Competence in the legal foundation of criminal justice and the importance of due process.

## **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.

## **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 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. May be repeated up to 3 credits.

**Prerequisite:** C- or better grade in MATH 1521G or MATH 1521H or ENGR 190.

#### **Learning Outcomes**

1. Ability to define an electronic system and its primary elements.
2. Ability to exercise a computational model of electric circuits and evaluate the system response.

- Ability to design and demonstrate a functional physical device that solve a practical problem while meets system requirements.

**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. May be repeated up to 3 credits.

**Prerequisite:** C- or better grades in MATH 2530G.

**Learning Outcomes**

- An ability to derive differential equation models of phenomena relevant to mechanical and aerospace engineering.
- An ability to use basic methods for solution of these ordinary and partial differential equations.
- An ability to apply the solutions to simple analysis and design situations.

**M E 234. Mechanics-Dynamics****3 Credits (3)**

Kinematics and dynamic behavior of solid bodies utilizing vector methods. May be repeated up to 3 credits.

**Prerequisite:** A grade of C- or better grade in the following: C E 233 and PHYS 1310G and MATH 1521G or MATH 1521H.

**Learning Outcomes**

- Student will be able to apply concepts of kinematics and accelerated motion.

**M E 240. Thermodynamics****3 Credits (3)**

First and second laws of thermodynamics, irreversibility and availability, applications to pure substances and ideal gases.

**Prerequisite:** C- or better grades in PHYS 1310G.

**Learning Outcomes**

- An ability to apply the first law of thermodynamics to energy systems.
- Understanding and application of thermodynamic concepts and properties to analyze systems with pure substances and ideal gases.

**M E 261. Numerical Methods****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. May be repeated up to 3 credits.

**Prerequisite:** C- or better grades in MATH 1521G or MATH 1521H or ENGR 190.

**Learning Outcomes**

- Ability to use a variety of numerical methods in both basic and advanced engineering calculations.
- Ability to formulate algorithms and write programs to solve engineering problems.
- Ability to develop an appreciation for the hazards and limitations of numerical solutions, including accuracy, stability, and computer limitations of memory and speed.

# MAT-AUTOMATION & MANUFACTURING (MAT)

**MAT 101. General Industry Safety****1 Credit (1)**

Overview of general industry safety for entry-level individuals. Students will have the opportunity to earn a 10-hour general industry OSHA card. Restricted to Community Colleges campuses only.

**Learning Outcomes**

- Discuss the general history of OSHA.
- Discuss the general history of the U.S. safety movement.
- Utilize the OSHA web site as a basic safety resource.
- Recognize industry-related hazards.
- Identify industry-related hazards.
- Avoid industry-related hazards.
- Follow proper basic first aid procedures in an emergency.
- Avoid exposure to blood-borne pathogens in an emergency situation.
- Interpret hazard communication. 1
- Recognize proper lifting techniques. 1
- Recognize personal protective equipment.

**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.

**Learning Outcomes**

- Recognize fundamentals of shape descriptions.
- Recognize fundamentals of size description and annotations.
- Recognize industrial drawing types.
- Recognize Industrial drawing types.
- Understand basic geometric dimensioning and tolerances practices that applied to working drawings.
- Identify standard threads and fasteners callouts and specifications.

**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 CDDM 114 required or math placement into MATH 1215 or higher. Restricted to: Community Colleges only.

**Learning Outcomes**

- Classify Hazardous Materials.
- Perform an Electrical Lockout/Tagout.
- Locate and Interpret a Safety Data Sheet.
- Interpret a Hazardous Material Identification Label.

**MAT 106. Applied 3D Manufacturing Practices****3 Credits (2+2P)**

Introduction to part production and manufacturing utilizing 3D printing processes. Introduction to creating 3D solid models utilizing CAD software and the creation of 3d printed parts utilizing filament or resin style 3D printers. Students will learn how to make selected parts starting from drawings/prints to completed projects. Basic elements of quality control will be introduced.

**Learning Outcomes**

1. Produce 3D solid models in CAD Software.
2. Read 2D and 3D technical drawings.
3. Manage Electronic files.
4. Utilize slicing software to prepare 3D solid models for 3d printing.
5. Apply industry standard design practices to produce desired 3D printed parts.
6. Produce 3D printed parts.
7. Apply elements of quality control in the 3D printing process.

**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 machines, Rigid Tubing, and Flexible Lines. Maintenance and safety operation of industrial equipment will also be covered. Restricted to: Community Colleges only. Crosslisted with: AERT 115

**Learning Outcomes**

1. Identify and analyze potential hazards associated with the operation of machinery and equipment, and apply appropriate safety measures to mitigate risks.
2. Demonstrate proficiency in implementing safety protocols and procedures when operating machinery and equipment, adhering to industry standards and regulations.
3. Apply critical thinking and problem-solving skills to troubleshoot issues related to the operation and safety of machinery and equipment, fostering a proactive approach to maintenance and risk management.
4. Gain practical skills in the maintenance and upkeep of industrial equipment, ensuring optimal performance, reliability, and safety.
5. Foster a safety-oriented mindset by recognizing the importance of personal protective equipment (PPE), safe work practices, and the responsibility to create a secure working environment for oneself and others.
6. Gain a deep understanding of file management principles, including folder structures, naming conventions, and version control, to ensure easy accessibility and retrieval of files.

**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 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 up to 12 credits.

**Learning Outcomes**

1. Learning goals will vary with the special topic selected for the course.

## 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 ARSC 1120.

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:** 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.

**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,E ED,ECED majors.

**Prerequisite:** C- or better in ENGL 1110G; 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.

**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:** 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.

**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)**

Collaborative workshop for students enrolled in Intermediate Algebra.

**Corequisite:** MATH 1215.

**Learning Outcomes**

1. Intermediate Algebra Workshop provides time for students to work on problems from Intermediate Algebra under the guidance of their 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:** 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.

**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.

**Corequisite:** MATH 1220G.

**Learning Outcomes**

1. College Algebra Workshop provides time for students to work on problems from College Algebra under the guidance of their 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:** 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.

**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 o, 30 o, 45 o, 60 o, 90o) 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 to work with the trigonometric form of complex numbers, including using De Moivre's formula. 1
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. 1
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. 1
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. 1
13. (Pre-Calculus) Applications: Modeling with functions with an emphasis on exponential and logarithmic functions, growth and decay. 1
14. (Pre-Calculus) Sequences and series: Understand the concept and notation of a sequence; Understand the concept and notation of a series; Be able to find limits of basic sequences; Be able to find sums of basic series.

### **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:** 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.

**Prerequisite:** 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.

- 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).
- Perform implicit differentiation. Use implicit differentiation to solve related rate application problems.
- 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.
- 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.
- Find the antiderivative and indefinite integral functions to include integration by substitution. Apply the Fundamental Theorem of Calculus in computing definite integrals of functions.
- Approximate the area under the curve using Riemann sums.
- Use the integral to determine the area under a curve and to find the accumulated value of a function in context.
- 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. 1
- 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**

- Find limits algebraically and graphically, and use limits to analyze continuity.
- 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).
- Learn derivative rules for polynomial, exponential, logarithmic, trigonometric and inverse trigonometric functions.
- Perform implicit differentiation. Use implicit differentiation to solve related rate application problems.
- 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.
- Find partial derivatives and find maxima, minima in three dimensions.
- Find the linear approximation of a function.
- Find Maclaurin and Taylor series.
- Find limits via L'Hospital's rule. 1
- 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**

- Find definite and indefinite integrals using integration by parts, integral tables, and numerical integration.
- Analyze multivariable functions using partial derivatives and double integrals, and apply these techniques to applications such as optimization, least squares, and volumes.
- Solve differential equations graphically, numerically, and algebraically using separation of variables, and apply differential equations in context.
- 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:** 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.

**Learning Outcomes**

- 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.
- Overall, the goals are to illustrate the power of calculus as a tool for modeling situations arising in physics, science, engineering and other fields.
- 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 1511H. Calculus and Analytic Geometry I Honors****4 Credits (4)**

Limits and continuity, theory and computation of derivatives, applications of derivatives, extreme values, critical points, derivative tests, L'Hopital's Rule. This is an Honors version of MATH 1511G. It is taught with MATH 1511G with differentiated assignments.

**Prerequisite:** 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**

- 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.
- Overall, the goals are to illustrate the power of calculus as a tool for modeling situations arising in physics, science, engineering and other fields.
- 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.
- Gain a deeper understanding of the mathematics behind Limits and Derivatives and be able to use mathematical ideas (such as the Intermediate Value Theorem, the Mean Value Theorem, and the Extreme Value Theorem) in applied contexts.

**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:** 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. 1
10. Find a power series representation for a function and determine where it converges. 1
11. Identify and evaluate first order differential equations.

#### MATH 1521H. Calculus and Analytic Geometry II Honors

##### 4 Credits (4)

A more advanced treatment of the material of MATH 1521G with additional topics. Consent of Instructor required. Restricted to Las Cruces campus only.

#### 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. 1
10. Find a power series representation for a function and determine where it converges. 1
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 1531H. Introduction to Higher Mathematics Honors

##### 3 Credits (3)

Logic; sets, relations, and functions; introduction to mathematical proofs. A more advanced treatment of the material of MATH 1531 with additional topics and/or assignments. Consent of Instructor required. Restricted to Las Cruces campus only.

**Prerequisite:** 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.
4. Since this is an honors course, you should be able to understand higher-level properties of the mathematical objects and ideas arising in the class. You should also be able to write, edit, revise, and ultimately construct well-written proofs and mathematical arguments.

#### 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 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:** 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 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:** 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 AVOVA Table; Explain the significance of multiple comparisons. 1
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)**

Continuation of Calculus II including multivariate and vector calculus, level curves and surfaces, partial derivatives, gradient, directional derivatives, tangent planes, optimization, multiple integrals in Cartesian, cylindrical and spherical coordinate systems.

**Prerequisite:** Grade of C- or better in MATH 1521G or MATH 1521H.

**Learning Outcomes**

1. Use vector notation correctly.
2. Perform vector operations, including dot product, cross product, differentiation and integration, and demonstrate their geometric interpretations.
3. Perform operations on vector valued functions and functions of a parameter.
4. Identify and graph the equations of cylinders and quadratic surfaces in 3-dimensional space.
5. Determine the domain of continuity of a vector valued function and of a function of multiple variables.
6. Compute partial derivatives, generally and at a point, and sketch their graphical representation on a surface in space.
7. Recognize when the chain rule is needed when differentiating functions of multiple variables, parametric equations and vector valued functions, and be able to use the chain rule in these situations.
8. Compute curvature of a parameterized vector representation of a curve in 2- and 3-dimensional space and be able to explain its meaning.
9. Compute the unit tangent and unit normal vectors to a curve and be able to sketch them with the curve. 1

10. Computationally move among position vector, velocity vector, speed, and acceleration vectors; recognize and demonstrate their use as applied to motion in space. 1
11. Determine the equation of the tangent plane to a surface at a point. 1
12. Use the tangent plane to a surface to approximate values on the surface and estimate error in approximation using differentials 1
13. Compute directional derivatives and represent them graphically relative to the inherent surface. 1
14. Compute the gradient vector; represent it graphically relative to the inherent surface and use it to maximize or minimize rate of change of the function. 1
15. Locate local and global maxima and minima of a function. 1
16. Use Lagrange multipliers to maximize output with one or two constraints. 1
17. Compute arc length and be able to explain its derivation as a limit. 1
18. Calculate double and triple integrals independently and with their geometric representations as surfaces, areas and volumes. 1
19. Calculate iterated integrals in polar, cylindrical and spherical coordinate systems.

#### **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 1210. Advertising**

##### **3 Credits (3)**

A survey of currently available advertising media. A psychological approach to consumer persuasion; applied techniques in media selection, layout mechanics, production methods, and campaign structures.

**Prerequisite:** MKTG 2110.

##### **Learning Outcomes**

1. Define advertising and the relevant application of psychology in delivering the message.
2. Explain the importance of various advertising media in the marketing mix.
3. Identify and explain the social, ethical and legal issues advertisers must consider.
4. Describe the significance of the marketing function in business.
5. Explain the importance of advertising and other marketing communication tools.
6. Demonstrate application of the planning process as it applies to marketing and advertising.
7. Describe the factors that are weighted when considering the use of radio and television in the creative advertising mix.
8. Describe the relationship between market segment, consumer behavior and selection of advertising campaign types.
9. List the alternative means of reaching a target market and the technical challenges of each.

#### **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/Corequisite:** MKTG 2110.

##### **Learning Outcomes**

1. Explain the importance of creating and sustaining a positive public awareness and image.
2. Identify public relations practices as they relate to the management and marketing processes.
3. Define branding and discuss its importance for small business.
4. Describe the value of business event management and promotion for small business.
5. 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, Facility Management 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
2. Know how to define and distinguish between learning and performance
3. Understand how juniors learn golf knowledge and skills, and identify implications for teaching
4. Conduct a physical evaluation of a junior golfer and create developmentally appropriate exercise and training programs
5. Establish student/teacher relationships that promote greater student learning and enjoyment
6. Develop a communication style that fits the student and increases instructional effectiveness
7. Analyze student's instructional needs and set clear, purposeful learning and practice goals
8. Know the format for an effective golf lesson
9. Deliver effective explanations and demonstrations during a golf lesson 1
10. Engage in self-assessment of teaching skills and competencies 1
11. Recognize the appropriate clubhead path and clubface position information to improve a golfer's performance 1
12. Conduct appropriate assessments to determine the short game skill level of the golfer 1
13. Gain understanding of the short game elements to help lower scores and improve the player 1
14. 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 1
15. 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 6 credits.

**Prerequisite:** 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).
2. Describe the various methods of online display advertising.
3. Determine the appropriate key performance indicators (KPIs) for any type of website.
4. Describe and implement best practices in marketing to a database of current and potential customers via email.
5. Utilize knowledge of social media tactics to design an effective social media campaign.
6. Implement online reputation management tactics to improve the online reputation of a brand.
7. 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 Facility Management 1B (Business Planning A, Customer Relations A, Golf Car A, Merchandising A, Turfgrass A), Level 1 Checkpoint Exams, and the corresponding PGA Work Experience Activities. Students will also be required to provide an internship evaluation report. 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
2. Explain how students process information when learning golf skills
3. Identify and explain the principles of effective practice
4. Explain how juniors learn golf knowledge and skills, and identify the implications for teaching
5. Structure an effective golf lesson
6. Analyze student's instructional needs and set clear, purposeful learning and practice goals
7. Deliver effective explanations and demonstrations during a golf lesson
8. Engage in self-assessment of teaching skills and competencies
9. Recognize and apply the appropriate clubhead path and clubface position information to improve a golfer's performance 1
10. Conduct appropriate assessments to determine the skill level of the golfer 1

11. Demonstrate basic knowledge of anatomy and physiology, and conduct a physical observation to identify movement capabilities and limitations that may affect a golfer's performance 1
12. Define club performance terms and specifications, and describe their effect on ball flight and player performance

## MLSL-MILITARY SCIENCE

### MLSL 1110L. INTRO TO MILITARY SCIENCE LAB 1-3 Credits (1-3)

#### MLSL 2129. Foundations of Military Fitness I 2 Credits

This course provides a hands-on overview of the fitness requirements needed to serve in the U.S. Army. Students are introduced to, and expected to complete exercises and routines to build their individual strength, endurance, and speed to meet the demands of training and Soldier tasks.

#### Learning Outcomes

1. Summarize the physical requirements for service in the US Army.
2. Pass the Army Combat Fitness Test (ACFT).
3. Pass the Combat Water Survival Test (CWST).

#### MLSL 3129. Military Fitness III 2 Credits (2)

A general program that focuses on activities and principles that promote physical fitness, achieve and maintain athletic prowess, and accomplish related research and service goals. Includes instruction in human movement studies, motivation studies, rules and practice of specific sports, exercise and fitness principles and techniques, basic athletic injury prevention and treatment, and organizing and leading fitness and sports programs.

**Prerequisite:** MLSL 2229.

#### Learning Outcomes

1. Demonstrate an understanding of leadership theories and principles.
2. Work as a team to address challenges and enhance the ROTC program.
3. Collaborate effectively within the ROTC cadet cohort.
4. Identify strategies for continuous improvement in leadership skills.
5. Engage in reflective practice to assess personal growth and learning throughout the course.
6. Demonstrate the ability to adapt to constructive feedback and guidance.
7. Foster positive and open communication.
8. Develop effective communication skills to peers, cadre, and instructors.
9. Apply leadership skills in a real-world context Reflect on personal leadership strengths and areas for growth.

#### MLSL 3130. Remember Bataan 2 Credits (2)

This will be a history course that explores the impacts of WWII on the state of New Mexico, with a particular emphasis on the Battle of Bataan. This course will incorporate a few different approaches to achieve the desired learning objectives listed below. 1) Historical Approach: The traditional lecture-based approach to history will be utilized to cover some of the course content. Two texts will largely inform the discussion: Dorothy Cave's *Beyond Courage* and *It Told for New Mexico* by Eva Matson. 2) Living History: Examining living history artifacts that exist throughout the state; discussions with families of survivors; discussions about what the legacy of Bataan means to today's society. 3)

Service-based learning: This is an educational approach that integrates meaningful community service with academic learning. In a service-based learning course, students engage in hands-on experiences that address real community needs while reflecting on and applying academic concepts. The goal is to enhance students' understanding of course content, develop their civic responsibility, and foster a sense of social awareness. Only one module of the course will be devoted to this style of learning. Instructors will steer students towards volunteering with the Remember Bataan Foundation, volunteering at White Sands Missile Range to support the Bataan Memorial Death March, or designed and implementing their own community service initiative in close coordination with and incorporating guidance from the instructors if they decide to go this third route. May be repeated up to 8 credits.

#### Learning Outcomes

1. Understanding the Context of World War II: Define the key events and factors that led to the outbreak of World War II, explain the geopolitical and economic situation of New Mexico before the war.
2. Analyzing New Mexico's Role in the War Effort: Assess the contributions of New Mexico to the war effort, including the development of the Manhattan Project and the establishment of military bases.
3. Examining Social Changes on the Home Front: Describe the social and economic changes that occurred in New Mexico during World War II, analyze the impact of wartime policies on women, minorities, and everyday life in the state.
4. Exploring the Battle of Bataan: Summarize the key events and significance of the Battle of Bataan, evaluate the role of New Mexican units and individuals in the battle.
5. Examining the Experiences of POWs and Veterans: Explore the experiences of New Mexican soldiers as prisoners of war in Bataan, analyze the challenges faced by veterans upon their return to New Mexico and their integration into post-war society.
6. Assessing Economic and Technological Changes: Evaluate the economic boom in New Mexico after World War II, examine the technological advancements that occurred and their long-term effects on the state.
7. Analyzing the Legacy and Commemoration: Assess how the Battle of Bataan is memorialized in New Mexico, analyze the lasting impact of World War II on the state and its modern perspectives.
8. Research and Communication Skills: Conduct independent research on specific aspects of New Mexico's history during World War II, communicate findings effectively through written assignments and discussions.
9. Critical Thinking and Synthesis: Apply critical thinking skills to analyze historical sources and perspectives, synthesize information to form well-reasoned arguments about the impact of World War II on New Mexico. 1
10. Cultural Competency: Recognize and appreciate the diverse contributions of individuals from different backgrounds in New Mexico during World War II, understand the cultural implications of wartime experiences on various communities within the state.

#### MLSL 4129. Military Fitness IV 2 Credits (2)

A general program that focuses on activities and principles that promote physical fitness, achieve and maintain athletic prowess, and accomplish related research and service goals. Includes instruction in human movement studies, motivation studies, rules and practice of specific sports, exercise and fitness principles and techniques, basic athletic

injury prevention and treatment, and organizing and leading fitness and sports programs. May be repeated up to 6 credits.

**Prerequisite:** MLSL 3329.

**Learning Outcomes**

1. Proficiency in developing others (i.e. setting conditions, creating opportunity, providing feedback, and enhancing learning) across the institutional, operational, and self-development domains.
2. Proficiency in creating and sustaining an organizational climate of trust in which all individuals are treated with dignity and respect.
3. Proficiency as an Army professional who embraces the Army's culture of service, instills discipline, and lives the Army Values.
4. Proficiency in the Army leader attribute and competency categories described in the Leadership Requirements Model.

## MUSC-MUSIC

### 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

### 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, sing and notate musical elements including rhythm, melody, intervals and harmony Traditional Grading with RR. Restricted to Las Cruces campus only. May be repeated up to 1 credit.

**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, sing 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. May be repeated up to 3 credits.

**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 1
10. Correct posture and hand position 1
11. Musical issues such as phrasing, slurs and dynamics 1
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)

**MUSC 1992. Applied Music****1-2 Credits (1-2)**

Private or group instruction for non-music majors, secondary instruments, and music majors preparing for 2000-level applied music. May be taken for unlimited credit. May be repeated up to 99 credits.

**Learning Outcomes**

1. Development of Musical Abilities.
2. Development of Technical Abilities.

**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 24 credits.

**Prerequisite:** 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. May be repeated up to 3 credits.

**Prerequisite:** A grade of C- or better in MUSC 1450 and 1460.

**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.

**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 1460.

**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 1451.

**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 MUS 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 scales and sequences as 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. May be repeated up to 99 credits.

**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 2740. Pride Marching Band**

**1 Credit (1)**

The Pride Marching Band performs at all NMSU home football games and select away games. The marching band is open to all students at NMSU and supports both instrumental and visual units. May be repeated up to 8 credits.

**Learning Outcomes**

1. To cultivate within the student a value system that encourages community service.
2. To provide the performer with experiences that will enable them to communicate thoughts/ideas/emotions in a unique and personal manner using his/her instrument, body, and physical motion.
3. To instill in students a commitment to life-long learning.
4. To promote personal growth through the rehearsal and performance of music, choreography, and drill of high quality.



- To encourage students to continuously participate in and support artistic performances following graduation.

**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**

- Varies

**MUSC 2996. Special Topics I****1-3 Credits**

Emphasis on special areas of music; designed for highly motivated students. May be taken for unlimited credit.

**Learning Outcomes**

- Varies

## NA - NURSING ASSISTANT (NA)

**NA 101. Nursing Assistant Theory and Lab****5 Credits (4+2P)**

Nurse aide skills with emphasis on a bio-psychosocial-cultural approach to resident/patient/client care. Students will learn the nursing assistant roles, responsibilities, and scope of practice while learning, developing, and practicing clinical skills in the nursing laboratory. With successful completion of NA 101 and NA 201, the student meets the New Mexico Department of Health training requirements and is eligible to take the Nurse Aide Training & Competency Evaluation Program (NATCEP) nursing assistant certification exam. Students must have current Basic Life Support for Health Care Providers. Requires a C (80%) or better to pass. Restricted to Community Colleges campuses only.

**Corequisite:** NA 201.

**Learning Outcomes**

- 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****3 Credits (2+1P)**

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:** CCDE 110 N.

**Learning Outcomes**

- 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 CDR 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 CCDD 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 (3+3P)**

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 the course, student has the opportunity to test for National Health career Certification. Consent of Instructor required. Restricted to Community Colleges campuses only. Requires clearance from Program Director for clinical compliance.

**Prerequisite/Corequisite:** BIOL 1130G or BIOL 2225.

##### **Learning Outcomes**

1. Recognize how patient care is based on respect for patient's preferences, values, and needs.
2. Communicate with other members of the health care team, how medical assistants function effectively within the inter-professional team.
3. Compare different and current evidenced based practice methods that are integrated with a patient/family preference for delivery of optimal health care.
4. Demonstrate the use of data to monitor patient outcomes of care process.
5. Describe strategies to minimize risk of harm to patients and the health care team.
6. Describe information and technology to assist with providing patient care and support sound decision making.

#### **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 trouble shooting. 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 Healthcare 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.
2. Calculate a patient's heart rate and identify the heart rhythm from an ECG tracing.
3. Identify artifacts; waveform elements of the cardiac cycle, including variances related to ischemia, injury or infarction; as well as, major classifications of arrhythmias.

4. Prepare and monitor patient's for Holter monitoring and telemetry.
5. Prepare, conduct and monitor patients during stress testing.
6. Recognize factors that affect procedures and results, and take appropriate actions within predetermined limits when indicated, including patient compromise or complications.
7. Demonstrate professional conduct and interpersonal communication skills with patients, other health care professionals, and with the public.
8. Recognize the responsibilities of other health care personnel and interact with them with respect for their jobs and patient care.
9. Apply basic scientific principles in learning new techniques and procedures. 1
10. 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 114. Patient Care Fundamentals**

##### **4 Credits (3+1P)**

This course provides an introduction to patient care services, functions and responsibilities for allied healthcare providers. Ethical and legal considerations; introduction to disease processes; interdisciplinary communication; and patient safety concepts are discussed. Students will be instructed on patient intake procedures, infection control principles, safe body mechanics and patient transfer techniques.

**Prerequisite:** ENGL1110G.

##### **Learning Outcomes**

1. Upon successful completion of this course, students will be able to demonstrate knowledge of the healthcare delivery system and health occupations.
2. Upon successful completion of this course, students will be able to apply basic health care concepts and skills for a variety of settings and a diverse patient population.
3. Upon successful completion of this course, students will demonstrate the ability to communicate with an interdisciplinary team.

#### **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.
2. Recognize factors that affect procedures and results, and take appropriate actions within predetermined limits when corrections are indicated.
3. Monitor quality control within predetermined limits.

4. Perform preventative and corrective maintenance of equipment and instruments or refer to appropriate source for repairs.
5. Demonstrate professional conduct and interpersonal communication skills with patients, laboratory personnel, other health care professionals, and with the public.
6. Recognize the responsibilities of other laboratory and health care personnel and interact with them with respect for their jobs and patient care.
7. Apply basic scientific principles in learning new techniques and procedures.

**NA 201. Nursing Assistant Theory and Clinical  
1 Credit (2P)**

Nurse aide skills with emphasis on a bio-psychosocial-cultural approach to resident/client/patient care. Students will practice the nursing assistant roles, responsibilities, and recognize the scope of practice while learning, developing, and practicing clinical skills in the clinical setting. With successful completion of NA 101 and NA 201, the student meets the New Mexico Department of Health training requirements and is eligible to take the Nurse Aide Training & Competency Evaluation Program (NATCEP) nursing assistant certification exam. Students must have current Basic Life Support for Health Care Providers. Requires a C (80%) or better to pass. Restricted to Community College Campuses only.

**Corequisite:** NA 101.

**Learning Outcomes**

1. Apply theoretical knowledge associated with nursing assisting in providing basic healthcare services.
2. Perform essential clinical skills within the nursing assistant scope of practice in long-term, acute care, and ambulatory care settings.
3. Recognize factors that affect procedures and results, and take appropriate actions within predetermined limits when indicated, including resident/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 healthcare roles and resident/patient care.
6. Apply basic scientific principles and evidenced-based practice in learning new techniques and procedures.
7. Relate vital signs, point-of-care testing, and physical psychological findings to common disease processes.
8. Evaluate occupational exposures, environmental safety hazards, high risk situations, and emergency responses related to health care professions.
9. Demonstrate soft skills related to assisting with patient assessment, mobility, safety, nutrition, and care of the environment. 1
10. Demonstrate professionalism when interacting with patient populations across the lifespan; including patient education and emergent situations. 1
11. Explain legal and ethical considerations, including HIPAA and scope of practice related to healthcare settings.

**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 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.

**Prerequisite:** NA 110, NA 109, AHS 120, BIOL 1130, BOT 208, HIT 228, HIT 248.

**Learning Outcomes**

1. Utilize appropriate medical terminology.
2. Apply the concepts of patient safety measures.
3. Employ concepts of medical asepsis.
4. Demonstrate the use of available resources.
5. Demonstrate professional ethical concepts.
6. Demonstrate the ability to successfully pass a competency examination.

**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. Restricted to Dona Ana campus only.

**Prerequisite:** NA 105, NA 110, NA 109, AHS 120, BIOL 1130, BOT 208, HIT 228, HIT 248.

**Prerequisite/Corequisite:** NA 212.

**Learning Outcomes**

1. Students will utilize appropriate medical terminology.
2. Students will apply the concepts of patient and personal safety measures.
3. Students will employ concepts of medical asepsis and infection control.
4. Students will demonstrate use of available resources and equipment pertinent to the role of a medical assistant.
5. Students will demonstrate professional ethical concepts.
6. Students will effectively perform medical assistant skills.

- Students will demonstrate professional and appropriate communication.

## NATV-NATIVE AMERICAN STUDIES

### NATV 1150G. Introduction to Native American Studies

#### 3 Credits

This course surveys the significance of Native American Studies through an inter-disciplinary approach to two areas of academic concentration: Indigenous Learning Communities, and Leadership and Building Native Nations.

#### Learning Outcomes

- Students will develop a general understanding of the various concentration areas in Native American Studies throughout the United States.
- Students will identify the contributions of various academic disciplines to Native American Studies.
- Students will understand the intricacies and intersections of Indigenous scholarship in Native American Studies.
- Students will articulate the importance of Native American Studies as a stand-alone discipline in academia.
- Students will be able to connect community issues in both Native and Non-Native America to concepts taught in Native American Studies.

### NATV 2120. Native American Experience

#### 3 Credits (3)

Introductory survey of Native American History, culture and contemporary issues. Students read literature by and about Native Americans covering a variety of topics including tribal sovereignty, federal policy, activism, economic development, education and community life.

#### Learning Outcomes

- Apply cultural and historical context to text about Native Americans (by Natives and non-Natives).
- Analyze texts about Native Americans in relation to tribal sovereignty, federal policy, activism, economic development, education and community life.
- Evaluate texts by and about Native Americans from an NAS perspective.

## 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

- A basic knowledge about engine operation.
- Practice shop safety, ability to identify potential hazards, tool identification, proper rigging and crane operation.
- Ability to identify specific components of a natural gas engine and their function.
- Locate and identify various components on and off an engine.
- Safely start large stationary industrial natural gas engines.
- List the steps of preventive maintenance on natural gas engines.
- Completely disassemble a natural gas engine, clean and organize parts, and measure critical clearances using appropriate precision measuring tools.
- 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.

### NGEC 175. Natural Gas Compression Technology I

#### 4 Credits (4)

This course delivers an introduction to the theory, application, rotary, and centrifugal natural gas compressor including operating principles, maintenance, and repair of the reciprocating, identification of the component parts and their functions, methods of balancing, and lubrication systems, and design characteristics. This course will also include calculations of gas flow, compressor sizing, rod loads, compressor analysis charts and horsepower ratings. In addition, this course will cover safety, precision measurement, use of the manuals, use of tools, and proper adjustments will be included with overhaul exercises. Restricted to: Natural Gas Engine Compression majors. Restricted to Carlsbad campus only.

#### Learning Outcomes

- Identify and analyze the re-usability of basic compressor parts.
- Accurately diagnose failure of key core components of basic compressors.
- Identify basic preventive maintenance tasks on natural gas compressors.
- Identify the key concept of troubleshooting of natural gas compressors by applying failure analysis techniques to arrive at the root cause of the failure.
- Demonstrate safety procedures in the workshop and follow appropriate steps to work with the compressor.

### 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

- Identify specific components of a natural gas engine and their function.
- List the steps of preventive maintenance on natural gas engines.
- Know the fuel components and operation
- Locate and identify various components on and off an engine.
- 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 NGECE Program for this final project.

## NURS-NURSING (NURS)

### NURS 1110. 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.

#### Learning Outcomes

1. Develop strategies for transitioning to university life and a pathway to the nursing program, through evaluating knowledge, skill, and experience strengths and deficits.
2. Understand the role nurses and other interprofessional partners play in addressing issues regarding the patient experience across multiple healthcare settings.
3. Identify and examine cultural, professional and personal beliefs and values of nurses as they relate to patient care and working in multidisciplinary teams.
4. Begin to explore nursing careers in a variety of healthcare settings, across the nation.

### NURS 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. Crosslisted with: HIT 120. Restricted to Community Colleges campuses only.

#### Learning Outcomes

1. List and define the major pharmacological drugs and common generics used in healthcare.
2. Distinguish between local, systemic, therapeutic, allergic, and side effects of the drugs.
3. Describe the pharmacological action of common drugs and drug categories used to treat each body system, including usage, dosage, adverse effects, contraindications, indications, and key client education information.
4. Identify basic laws and ethics associated with pharmacological preparation and distribution.
5. Describe the principle mechanisms of actions, usage, dosage, adverse effects, contraindications, indications, and key client education information for drug classifications affecting multiple body systems. List several routes of drug administration and describe their advantages and disadvantages.

### NURS 127. Medication & Dosage Calculation

#### 2 Credits (2)

General principles of medication administration including computation of medication dosage, preparation, safe administration, and documentation of multiple forms of drugs. Includes instruction on various systems of measurement. Applies critical thinking in the administration of oral,

topical, enteral, and parenteral medications. Restricted to: Nursing and Medical Assisting Majors. May be repeated up to 2 credits.

#### Learning Outcomes

1. The student will demonstrate accurate dosage calculation; discuss the principles of medication administration, identify the classification of drugs used for various disorders of the systems, administration safety and identify the elements of accurate documentation of medication administration.

### NURS 130. Foundations of Pharmacology

#### 5 Credits (5)

This course provides the nursing student with an introduction to the foundations of pharmacology including: science of drug action, principles of medication administration, accurate calculation of drug doses, medication therapy across the lifespan, application of medications to treat health alterations, normal and adverse responses by the client to medication therapy, medication safety, medication regulation, national patient safety goals, and appropriate nursing interventions to achieve the desired goals of medication therapy. Students must be admitted into the Nursing Program to enroll in this course. Restricted to: Nursing Majors and Community Colleges only.

#### Learning Outcomes

1. Recognize personally held values and demonstrate assessment of the values held by diverse patients, as well as their preferences and expressed needs related to pharmacological therapy.
2. Communicate with other members of the healthcare team to establish a plan to meet the needs of individuals, including commonly related to adverse or side effects of pharmacological therapy throughout the lifespan.
3. Compare an individualized patient care plan utilizing an evidence-based approach for patient(s) across the lifespan to outcomes related to the administration of pharmacological therapy.
4. Demonstrate adherence to policies, procedures, and standards of care for the administration of pharmacological therapy in healthcare delivery systems.
5. Apply strategies to reduce the risk of harm to self or others while providing professional nursing care.
6. Utilize varied communication technologies, electronic healthcare databases, and electronic health records to plan nursing care for the administration of pharmacological therapy across the lifespan.

### NURS 134. Foundation of Nursing Skills and Assessment

#### 1 Credit (1)

This course provides nursing students with introductory nursing concepts related to implementation and evaluation 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. Students must be admitted into the Nursing Program to enroll in this course. Restricted to: Nursing Majors and Community Colleges only.

**Corequisite:** NURS 134L, NURS 136, NURS 136L.

#### Learning Outcomes

1. Describe personally held values, attitudes, and beliefs related to health and wellness.
2. Describe scopes of practice, roles and values of health care team members.
3. Describe an evidence-based practice approach to provision of patient care and professional nursing practice across the lifespan.
4. Identify policies, procedures, and standards of care related to the provision of professional nursing care.

- Describe strategies that reduce the risk of harm to self and others.
- Identify essential information that must be available in a common database to support patient care across the lifespan.

**NURS 134L. Foundation of Nursing Skills and Assessment Lab  
2 Credits (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. Students must be admitted into the Nursing Program to enroll in this course. Students must be admitted into the Nursing Program to enroll in this course. Restricted to: Nursing majors and Community Colleges only.

**Corequisite:** NURS 134, NURS 136, NURS 136L.

**Learning Outcomes**

- Describe personally held values, attitudes, and beliefs related to health and wellness.
- Describe scopes of practice, roles and values of health care team members.
- Describe an evidence-based practice approach to provision of patient care and professional nursing practice across the lifespan.
- Identify policies, procedures, and standards of care related to the provision of professional nursing care.
- Describe strategies that reduce the risk of harm to self and others.
- Identify essential information that must be available in a common database to support patient care across the lifespan.

**NURS 136. Foundations of Nursing Practice  
4 Credits (4)**

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. Students must be admitted into the Nursing Program to enroll in this course. Restricted to: Nursing Majors and Community Colleges only.

**Prerequisite/Corequisite:** NURS 134, NURS 134L, NURS 136L.

**Learning Outcomes**

- Describe personally held values, attitudes, and beliefs related to health and wellness.
- Describe scopes of practice, roles and values of health care team members.
- Describe an evidence-based practice approach to provision of patient care and professional nursing practice across the lifespan.
- Identify policies, procedures, and standards of care related to the provision of professional nursing care.
- Describe strategies that reduce the risk of harm to self and others.
- Identify essential information that must be available in a common database to support patient care across the lifespan.

**NURS 136L. Foundations of Nursing Practice Lab  
2 Credits (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. Students must be admitted into the Nursing Program to enroll in this course. Restricted to: Nursing Majors and Community Colleges only.

**Prerequisite/Corequisite:** NURS 134, NURS 134L, NURS 136.

**Learning Outcomes**

- Describe personally held values, attitudes, and beliefs related to health and wellness.
- Describe scopes of practice, roles and values of health care team members.
- Describe an evidence-based practice approach to provision of patient care and professional nursing practice across the lifespan.
- Identify policies, procedures, and standards of care related to the provision of professional nursing care.
- Describe strategies that reduce the risk of harm to self and others.
- Identify essential information that must be available in a common database to support patient care across the lifespan.

**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. Students must be admitted into the nursing program to enroll in this course. Restricted to: NURS majors. Restricted to Community Colleges campuses only. May be repeated up to 3 credits.

**Learning Outcomes**

- Recognize personally held values and demonstrate assessment of the values held by older adults related to chronic illness and age-related changes, as well as their preferences and expressed needs as measured by: a. Give examples of cultural, religious, socioeconomic, environmental, and internal influences on the health and illness of an older adult; b. Select health protection, health promotion, and disease prevention strategies related to care of older adults; c. Relate own beliefs and attitudes related to aging that might impact ability to provide care to the older adult.
- Communicate with other members of the healthcare team to establish a plan to meet the needs of older adults with commonly occurring chronic illness or age-related changes as measured by: a. Locate care delivery settings and sources for referral and coordination of healthcare needs for older adults.
- Compare an individualized patient care plan utilizing an evidence-based approach for older adults to outcomes related to the administration of pharmacological therapy as measured by: a. Describe sources of information regarding evidenced-based protocols for care of older adults; b. Use principles of ethical practice in delivery of care to the older adult.
- Demonstrate adherence to policies, procedures, and standards of care related to the provision of professional nursing care of older adults with chronic diseases as measured by: a. Give examples of healthcare policies and national standards of care related to the provision of care to older adults.

- Apply strategies to reduce the risk of harm to self or others while providing professional nursing care pertinent to the provision of care to older adults: a. Recognize potential and actual safety issues that are pertinent to the provision of care to older adults; b. Apply nursing interventions that reduce risk of harm to older adults.
- Utilize varied communication technologies, electronic healthcare databases, and electronic health records to plan nursing care to support care of older adults as measured by: a. Discuss issues with use of technology related to the care of older adults; b. Discuss essential information that needs to be in a common database relevant to care of the older adult.

**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.

**NURS 144. Pharmacology, Essentials of Medication Safety**  
**2 Credits (2)**

This course introduces the nursing student to pharmacological nursing practice across the lifespan. The student identifies the nurse's professional role related to pharmacotherapeutics in diverse populations. Safety issues and minimization of risk potential associated with pharmacotherapeutics, complementary, and alternative medicines are discussed. Health care system protocols, communication methods, and informatics related to pharmacotherapeutics are included in the course content. Common drug classes and the pharmacotherapeutics, pharmacodynamics, and pharmacotherapeutics associated with each class are included in this course. Restricted to NURS Majors.

**Prerequisite:** NURS 127.

**Learning Outcomes**

- Discuss drug classifications including the uses, actions, pharmacodynamics, indications, pharmacokinetics, contraindications, adverse effects, and nursing implications.
- Provide patient with education regarding a newly prescribed medication.

**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. Restricted to: NURSING majors. May be repeated up to 6 credits.

**Prerequisite:** (NURS 127 or NURS 153), NURS 156, NURS 154, NURS 157, and NURS 210 OR consent of program director.

**Learning Outcomes**

- Utilize critical thinking and systematic problem-solving process as a framework for providing care for adult patients in structured health care setting with complex health care needs.

- Utilize critical thinking and problem solving skills in prioritizing the management and coordination of all aspects of care.

**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. Students must be admitted into the Nursing Program to enroll in this course.

**Learning Outcomes**

- Recognize personally held values and demonstrate assessment of the values held by diverse patients, as well as their preferences and expressed needs related to health and wellness as measured by: a. Give examples of how personal values, values of patients, families, and medical personnel impacts the involvement of patients in their care related to selected course topics for adult clients with chronic and acute illness; b. Select health protection, health promotion, and disease prevention strategies related to selected course topics for adult clients; c. Relate the scope, risk factors, physiologic processes, attributes, and clinical management of chronic disease to selected course topics for adult clients.
- Communicate with other members of the healthcare team to establish a plan to meet the needs of individuals, including commonly occurring chronic and acute health care problems throughout the lifespan as measured by: a. Locate significant information to report to other disciplines; b. Select resources for continuity of patient care related to selected topics; c. Apply the principles of delegation to selected course topics.
- Compare an individualized patient care plan utilizing an evidence-based approach for patient(s) across the lifespan to outcomes for the patient(s) as measured by: a. Implement individualized patient care utilizing an evidence-based approach related to selected course topics; b. Use principles of ethical practice in the delivery of nursing care for patients with chronic or acute illness.
- Demonstrate adherence to policies, procedures, and standards of care for the provision of care in healthcare delivery systems as measured by: a. Give examples of policies, procedures, and standards of care related to selected course topics.
- Apply strategies to reduce the risk of harm to self or others while providing professional nursing care as measured by: a. Identify variations in physiologic integrity related to selected course topics; b. Apply nursing interventions to reduce risk of harm related to selected course topics.
- Utilize varied communication technologies, electronic healthcare databases, and electronic health records to plan nursing care for patients with chronic illnesses across the lifespan as measured by: a. Discuss available technology for delivery of nursing care related to selected topics.

**NURS 147L. Adult Health I Lab**  
**2 Credits (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 admitted into the Nursing Program to enroll in this course.

**Prerequisite:** NURS 134, NURS 134L, NURS 136, NURS 136L.

**Prerequisite/Corequisite:** NURS 130, NURS 147L.

#### **Learning Outcomes**

1. Patient Centered Care: Recognize personally held values and demonstrate assessment of the values held by diverse patients, as well as their preferences and expressed needs related to health and wellness.
2. Teamwork and Collaboration: Communicate with other members of the healthcare team to establish a plan to meet the needs of individuals, including commonly occurring chronic and acute health care problems throughout the lifespan.
3. Evidenced Based Practice: Prepare an individualized patient care plan utilizing an evidence-based approach for patient(s) across the lifespan to outcomes for the patient(s).
4. Quality Improvement: Demonstrate adherence to policies, procedures, and standards of care for the provision of care in healthcare delivery systems.
5. Safety: Apply strategies to reduce the risk of harm to self or others while providing professional nursing care.
6. Informatics: Utilize varied communication technologies, electronic healthcare databases, and electronic health records to plan nursing care for patients with chronic illnesses across the lifespan.

#### **NURS 149. Mental Health Nursing**

##### **3 Credits (3)**

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. Students must be admitted into the Nursing Program in order to enroll in the course. Restricted to: Nursing Majors and Community Colleges only.

**Prerequisite:** NURS 134, NURS 134L, NURS 136, NURS 136L.

**Prerequisite/Corequisite:** NURS 130, NURS 149L.

#### **Learning Outcomes**

1. Recognize personally held values and demonstrate assessment of the values held by diverse patients, as well as their preferences and expressed needs related to health and wellness.
2. Communicate with other members of the healthcare team to establish a plan to meet the needs of individuals, including commonly occurring chronic and acute health care problems throughout the lifespan.
3. Compare an individualized patient care plan utilizing an evidence-based approach for patient(s) across the lifespan to outcomes for the patient(s).
4. Demonstrate adherence to policies, procedures, and standards of care for the provision of care in healthcare delivery systems.
5. Apply strategies to reduce the risk of harm to self or others while providing professional nursing care.

6. Utilize varied communication technologies, electronic healthcare databases, and electronic health records to plan nursing care for patients with chronic illnesses across the lifespan.

#### **NURS 149L. Mental Health Nursing Lab**

##### **1 Credit (6P)**

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 admitted into the Nursing Program in order to enroll in the course. Restricted to: Nursing majors and Community Colleges only.

**Prerequisite:** NURS 134, NURS 134L, NURS 136, NURS 136L.

**Prerequisite/Corequisite:** NURS 130, NURS 149.

#### **Learning Outcomes**

1. Recognize personally held values and demonstrate assessment of the values held by diverse patients, as well as their preferences and expressed needs related to health and wellness.
2. Communicate with other members of the healthcare team to establish a plan to meet the needs of individuals, including commonly occurring chronic and acute health care problems throughout the lifespan.
3. Compare an individualized patient care plan utilizing an evidence-based approach for patient(s) across the lifespan to outcomes for the patient(s).
4. Demonstrate adherence to policies, procedures, and standards of care for the provision of care in healthcare delivery systems.
5. Apply strategies to reduce the risk of harm to self or others while providing professional nursing care.
6. Utilize varied communication technologies, electronic healthcare databases, and electronic health records to plan nursing care for patients with chronic illnesses across the lifespan.

#### **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.



Restricted to Nursing Majors. Restricted to Dona Ana Campus. May be repeated up to 2 credits.

**Prerequisite:** BIOL 1130 or BIOL 2210.

**Corequisite:** NURS 127, NURS 156.

#### **Learning Outcomes**

1. The student will demonstrate a systematic (head to toe) physical assessment to gather objective data
2. The student will explain the characteristics of growth and development of individuals throughout the lifespan
3. The student will obtain a thorough health history to gather subjective data

#### **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. Consent of Program Director requires. Restricted to: NURSING majors. Restricted to Dona Ana campus. May be repeated up to 6 credits.

**Corequisite:** NURS 154.

#### **Learning Outcomes**

1. Use evidence-based practice, critical thinking, and scientific rationales to plan safe care for adults who are experiencing alterations in health.
2. Utilize knowledge and concepts from the arts, sciences, and humanities to plan nursing care to enhance individual patient's health outcomes and quality of life.
3. Respect patients' unique responses to health and illness based on socio-cultural and physical environments.
4. Explore basic concepts of a community continuum of care, including the professional roles of interdisciplinary teams, community resource agencies, and family support systems.

#### **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.

**Corequisite:** NURS 210.

#### **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.
2. Implement individualized client care utilizing an evidenced based approach related to maternal/child and pediatric clients.
3. Choose health protection, health promotion, and disease prevention strategies in the care of maternal/child and pediatric clients.
4. Apply the scope, risk factors, physiologic processes, and clinical management strategies to maternal/child and pediatric clients.
5. Choose resources for continuity of client care related to maternal/child and pediatric clients.
6. Give examples of significant information to report to other disciplines.
7. Apply the principles of delegation in the provision of client care with maternal/child and pediatric clients.
8. Utilize evidenced based information to implement a plan of care and employ nursing interventions for maternal/child and pediatric clients.
9. Use the principles of ethical practice in the delivery of nursing care for maternal/child and pediatric clients. 1
10. Apply policies, procedures and standards of care related to maternal/child and pediatrics in the provision of client care. 1
11. Apply nursing interventions to reduce risk of harm to self and others related to maternal/child and pediatric clients. 1
12. Choose available technology for delivery of nursing care related to maternal/child and pediatric clients.

#### **NURS 201. Special Topics**

##### **3 Credits (3)**

Specific topics NCLEX course will help prepare students for the predictability exam and NCLEXRN. This course assists students in being emotionally, didactically and technically prepared to take both examinations. Students will review how to prepare to take this examination through a series of sample tests, quizzes and group discussions. A variety of core content subject matter will be covered to allow the student to be prepared to take the comprehensive examinations. At the conclusion of this course, the student will take a comprehensive predictability exam. Students must be admitted into the Nursing Program to enroll in this course.

**Prerequisite:** NURS 130, NURS 134, NURS 134L, NURS 136, NURS 136L, NURS 147, NURS 147L, NURS 149, NURS 149L, NURS 224, NURS 224L, NURS 226, NURS 226L.

**Corequisite:** NURS 236, NURS 236L.

#### **Learning Outcomes**

1. Utilize diverse patients' values, preferences, and expressed needs to drive development of the plan of care for acute and chronically ill patients through application to NCLEX style questions.
2. Evaluate ability to function within own scope of practice as a member of the healthcare team to deliver care to individuals and families across the lifespan with complex health alterations through application to NCLEX style questions.
3. Demonstrate the use of evidence-based approaches for the delivery and evaluation of care to patients across the lifespan through application to NCLEX style questions.

4. Formulate a plan of care for the provision of care in healthcare delivery systems using policies, procedures and standards of care through application to NCLEX style questions.
5. Interpret effective use of strategies to reduce risk of harm to self or others while providing professional nursing care including evidence-based practice, national patient safety goals, and core measures through application to NCLEX style questions.
6. Utilize information management tools to monitor outcomes of care processes and deliver nursing care to patients with chronic or acute illness across the lifespan through application to NCLEX style questions.

#### **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 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.
2. Basic critical thinking skills including problem identification, evidence acquisition, evidence evaluation, and reasoning/conclusion.
3. An understanding of personal and social responsibility.
4. An ability to apply the fundamental concepts of quantitative reasoning in mathematics and science.
5. 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.
2. Collaborate with members of the health care team in the delivery of pharmacotherapeutics to clients with complex health deviations.
3. Give examples of commonly prescribed drugs used to treat clients with complex health deviations and related pharmacokinetics and pharmacodynamics.
4. Discuss the relationship between the use of pharmacotherapeutics and the treatment of disease in clients with complex health deviations.
5. Identify safety issues and minimize risk potential associated with pharmacotherapeutics.

#### **NURS 224. Maternal Child Nursing**

##### **5 Credits (5)**

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. Students must be admitted into the Nursing Program to enroll in this course. Restricted to: Nursing Majors and Community Colleges only.

**Prerequisite:** NURS 130, NURS 134, NURS 134L, NURS 136, NURS 136L, NURS 147, NURS 147L, NURS 149, NURS 149L.

**Prerequisite/Corequisite:** NURS 224L.

##### **Learning Outcomes**

1. Utilize diverse patients' values, preferences, and expressed needs to drive development of the plan of care for the child bearing woman (19-65 years) and pediatric client (newborn-18).
2. Evaluate ability to function within own scope of practice as a member of the healthcare team to deliver care to individuals and families across the lifespan with complex health alterations as it relates to the child bearing woman (19-65 years) and pediatrics.
3. Demonstrate the use of evidence-based approaches for the delivery and evaluation of care to patients across the lifespan as it relates to the child bearing woman (19-65 years) and pediatric client (newborn-18).
4. Formulate a plan of care for the provision of care in healthcare delivery systems using policies, procedures and standards of care as it relates to the child bearing woman (19-65 years) and pediatric client (newborn-18).
5. Interpret effective use of strategies to reduce risk of harm to self or others while providing professional nursing care including evidence-based practice, national patient safety goals, and core measures as it relates to the child bearing woman (19-65 years) and pediatric client (newborn-18).
6. Utilize information management tools to monitor outcomes of care processes and deliver nursing care to patients with chronic or acute illness across the lifespan as it relates to the child bearing woman (19-65 years) and pediatric client (newborn-18).

#### **NURS 224L. Maternal Child Nursing Lab**

##### **1 Credit (6P)**

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 admitted into the Nursing Program to enroll in this course. Restricted to Nursing Majors and Community Colleges only.

**Prerequisite:** NURS 130, NURS 134, NURS 134L, NURS 136, NURS 136L, NURS 147, NURS 147L, NURS 149, NURS 149L.

**Prerequisite/Corequisite:** NURS 224.

#### **Learning Outcomes**

1. Utilize diverse patients' values, preferences, and expressed needs to drive development of the plan of care for the childbearing woman (19-65 years) and pediatric client (newborn-18).
2. Evaluate ability to function within own scope of practice as a member of the healthcare team to deliver care to individuals and families across the lifespan with complex health alterations as it relates to the childbearing woman (19-65 years) and pediatric client (newborn-18).
3. Demonstrate the use of evidence-based approaches for the delivery and evaluation of care to patients across the lifespan as it relates to the childbearing woman (19-65 years) and pediatric client (newborn-18).
4. Formulate a plan of care for the provision of care in healthcare delivery systems using policies, procedures, and standards of care as it relates to the childbearing woman (19-65 years) and pediatric client (newborn-18).
5. Interpret effective use of strategies to reduce risk of harm to self or others while providing professional nursing care including evidence-based practice, national patient safety goals, and core measures as it relates to the childbearing woman (19-65 years) and pediatric client (newborn-18).
6. Utilize information management tools to monitor outcomes of care processes and deliver nursing care to patients with chronic or acute illness across the lifespan as it relates to the childbearing woman (19-65 years) and pediatric client (newborn-18).

#### **NURS 226. Adult Health II**

##### **4 Credits (4)**

This course focuses on application of nursing process and theoretical concepts of care for adults with complex health alterations. Selected learning experiences will allow the student to apply: prioritization skills, collaborative skills with clients, families, peers and health care team members, and care planning skills related to patient actual, psychosocial, and potential problems in the delivery of nursing care to meet needs of three adult clients. Students must be admitted into the Nursing Program to enroll in this course. Restricted to: Nursing majors and Community Colleges only.

#### **Learning Outcomes**

1. Utilize diverse patients' values, preferences, and expressed needs to drive development of the plan of care for the adult client with acute illness.
2. Evaluate ability to function within own scope of practice as a member of the healthcare team to adult clients with acute illness.
3. Demonstrate the use of evidence-based approaches for the delivery and evaluation of care to patients across the lifespan as it relates to adult clients with acute illness.
4. Formulate a plan of care for the provision of care in healthcare delivery systems using policies, procedures and standards of care as it relates to adult clients with acute illness.

5. Interpret effective use of strategies to reduce risk of harm to self or others while providing professional nursing care including evidence-based practice, national patient safety goals, and core measures as it relates to adult clients with acute illness.
6. Utilize information management tools to monitor outcomes of care processes and deliver nursing care to adult clients with acute illness.

#### **NURS 226L. Adult Health II Lab**

##### **2 Credits (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 related to patient actual, psychosocial, and potential problems in the delivery of nursing care to meet needs of three adult clients. Students must be admitted into the Nursing Program to enroll in this course. Restricted to: Nursing Majors and Community Colleges only.

**Prerequisite:** NURS 130, NURS 134, NURS 134L, NURS 136, NURS 136L, NURS 147, NURS 147L, NURS 149, NURS 149L.

**Corequisite:** NURS 226, NURS 224, NURS 224L.

#### **Learning Outcomes**

1. Utilize diverse patients' values, preferences, and expressed needs to drive development of the plan of care for the adult client with acute illness.
2. Evaluate ability to function within own scope of practice as a member of the healthcare team to adult clients with acute illness.
3. Demonstrate the use of evidence-based approaches for the delivery and evaluation of care to patients across the lifespan as it relates to adult clients with acute illness.
4. Formulate a plan of care for the provision of care in healthcare delivery systems using policies, procedures and standards of care as it relates to adult clients with acute illness.
5. Interpret effective use of strategies to reduce risk of harm to self or others while providing professional nursing care including evidence-based practice, national patient safety goals, and core measures as it relates to adult clients with acute illness.
6. Utilize information management tools to monitor outcomes of care processes and deliver nursing care to adult clients with acute illness.

#### **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. Students must be admitted into the Nursing Program to enroll in this course.

Restricted to: NUR majors. Restricted to Community Colleges campuses only. May be repeated up to 1 credit.

#### **Learning Outcomes**

1. Utilize diverse patients' values, preferences, and expressed needs to drive development of the plan of care for acute and chronically ill patients as measured by: a. Discuss how personal values impacts the delivery of care to clients across the lifespan.
2. Evaluate ability to function within own scope of practice as a member of the healthcare team to deliver care to individuals and families across the lifespan with complex health alterations as measured by:

- a. Employ the principles of delegation to the assignment of nursing team duties and patient room assignments; b. Analyze effective communication with health care team members; c. Apply effective communication strategies in common nursing activities; d. Discuss methods to resolve conflict.
3. Demonstrate the use of evidence-based approaches for the delivery and evaluation of care to patients across the lifespan as measured by: a. Analyze personal values that influence approaches to ethical issues and decision-making; b. Describe ways in which nursing research can be used to guide nursing practice.
4. Formulate a plan of care for the provision of care in healthcare delivery systems using policies, procedures and standards of care as measured by: a. Discuss the use of key indicators to measure performance; b. Recognize tools and processes for continuous quality improvement.
5. Interpret effective use of strategies to reduce risk of harm to self or others while providing professional nursing care including evidence-based practice, national patient safety goals, and core measures as measured by: a. Discuss ways to improve care while reducing costs; b. Incorporate an understanding of legal risks into the practice of professional nursing and recognize how to minimize risk.
6. Utilize information management tools to monitor outcomes of care processes and deliver nursing care to patients with chronic or acute illness across the lifespan as measured by: a. Discuss the necessity of using recognized taxonomies and standardized nursing languages in nursing documentation.

### **NURS 236. Nursing Preceptorship - Adult Health III 3 Credits (3)**

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. Selected learning experiences will allow the student to: organize care of a group of clients, 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 clients. 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. Restricted to: Nursing majors and Community Colleges only.

**Prerequisite:** NURS 130, NURS 134, NURS 134L, NURS 136, NURS 136L, NURS 147, NURS 147L, NURS 149, NURS 149L, NURS 224, NURS 224L, NURS 226, NURS 226L.

**Prerequisite/Corequisite:** NURS 201, NURS 236L.

#### **Learning Outcomes**

1. Integrate the values, preferences, attitudes, and expressed needs of the acutely ill patient into the plan of care related to the care of the adult client with complex health deviations.
2. Integrate the contributions of other members of the healthcare team into the delivery of nursing care for individuals across the lifespan with complex or multi-system health alterations related to the care of the adult client with complex health deviations.
3. Discriminate between valid and invalid reasons for modifying evidence-based clinical practice based on clinical expertise or patient/family preferences in the creation of a plan of care for delivery and evaluation of care for patients across the lifespan related to the care of the adult client with complex health deviations.

4. Evaluate the use of policies, procedures and standards of care in healthcare delivery systems and adapt the care as appropriate related to the care of the adult client with complex health deviations.
5. Interpret and analyze effective use of strategies to reduce risk of harm to self or others while providing professional nursing care, creating a structure for implementation of evidence-based practice, national patient safety goals, and core measures in the care of the adult client with complex health deviations.
6. Integrate use of appropriate technology and information management tools to support safe delivery of care to the adult client with complex health deviations.

### **NURS 236L. Nursing Preceptorship - Adult Health III Lab 3 Credits (6P)**

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. 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 must be admitted into the Nursing Program to enroll in this course. Restricted to: Nursing majors and Community Colleges only.

**Prerequisite:** NURS 130, NURS 134, NURS 134L, NURS 136, NURS 136L, NURS 147, NURS 147L, NURS 149, NURS 149L, NURS 224, NURS 224L, NURS 226, NURS 226L.

**Prerequisite/Corequisite:** NURS 201, NURS 236.

#### **Learning Outcomes**

1. Integrate the values, preferences, attitudes, and expressed needs of the acutely ill patient into the plan of care related to the care of the adult client with acute, chronic, or complex health deviations.
2. Integrate the contributions of other members of the healthcare team into the delivery of nursing care for individuals across the lifespan with complex or multi-system health alterations related to the care of the adult client with acute, chronic, or complex health deviations.
3. Discriminate between valid and invalid reasons for modifying evidence-based clinical practice based on clinical expertise or patient/family preferences in the creation of a plan of care for delivery and evaluation of care for patients across the lifespan related to the care of the adult client with acute, chronic, or complex health deviations.
4. Evaluate the use of policies, procedures, and standards of care in healthcare delivery systems and adapt the care as appropriate related to the care of the adult client with acute, chronic, or complex health deviations.
5. Interpret and analyze effective use of strategies to reduce risk of harm to self or others while providing professional nursing care, creating a structure for implementation of evidence-based practice, national patient safety goals, and core measures in the care of the adult client with acute, chronic, or complex health deviations.

6. Integrate use of appropriate technology and information management tools to support safe delivery of care to the adult client with acute, chronic, or complex health deviations.

#### **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.
2. Discuss the patient's health care needs that occur as a result of complex health deviations.
3. Explain methods the nurse can employ in allowing the patient to assume the right and responsibility for his own care.
4. 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.
5. 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.
6. 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
7. 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.
2. Evaluate principles of quality improvement and safety into nursing practice within healthcare organizations and systems.
3. Apply leadership concepts through the application of policies that apply to healthcare delivery.
4. Promote a culture of safety through anticipating and eliminating potentially harmful situations.
5. Collaborate in systems analysis when clinical errors or near misses occur to reduce harm, minimize blame, and encourage transparency.
6. Integrate evidence in determining best clinical practice.
7. Demonstrate basic knowledge of healthcare policy, finance, and regulatory environments, including local, state, national, and global healthcare trends.
8. 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 1
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.

#### 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.

#### Learning Outcomes

1. Demonstrate proper "touch" keyboarding techniques on the alphabetic computer keyboard.
2. Apply keyboarding and basic formatting functions using straight-copy material to create properly formatted professional documents.
3. Show the ability to keyboard by meeting course minimum speed and accuracy.
4. Identify and apply the use of proofreader's symbols to proofread and edit straight-copy business documents.
5. Demonstrate proficiency in use of lesson software utilized throughout course.

### 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.

#### Learning Outcomes

1. Demonstrate accuracy and increase individual typing speed by meeting course typing speed requirements.
2. Demonstrate the ability to use software features to create simple, error-free quality business documents.
3. Increase skills in proofreading, editing skills (including punctuation and grammar, and use of reference manuals and materials).

### 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.

#### Learning Outcomes

1. Identify each of the parts of speech in written exercises, quizzes, and examinations.
2. Apply the basic rules for each of the parts of speech to written exercises.

### OATS 106. Business Mathematics

#### 3 Credits (2+2P)

Mathematical applications for business.

**Prerequisite:** 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.

#### Learning Outcomes

1. Recognize records control and management systems.
2. Utilize vocabulary pertaining to records management.
3. Recognize various kinds of filing equipment and supplies (paper and electronic).
4. Apply Association for Records Managers and Administrators (ARMA) rules in alphabetic card and correspondence filing exercises.
5. Apply procedures for maintaining and controlling records including; requisitioning, charging-out, returning, and reserving files.
6. Discuss records retention cycle including: Control procedures for transferring, storing and destruction of files.
7. Recognize the use of color as a method for improving efficiency in filing systems.
8. Demonstrate proficiency in use of lesson software utilized throughout course.

### 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. May be repeated up to 3 credits.

#### 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.
5. Analyze owner equity transactions and their effect on the financial statements.
6. Identify the cash flow statement and explain the purpose of the cash flow statement.
7. Perform ratio analysis to evaluate financial statements.

### 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. Restricted to Community Colleges campuses only.

**Prerequisite:** OATS 120 or ACCT 2110.

**Learning Outcomes**

1. Analyze business transactions, their effects on the financial statements and the interrelationships of the financial statements involving the following: a. Cash transactions b. Receivables and Net Realizable Value c. Operational Assets and Depreciation d. Inventory e. Current Liabilities f. 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.
5. Analyze owner equity transactions and their effect on the financial statements.
6. Identify the cash flow statement and explain the purpose of the cash flow statement.
7. Perform ratio analysis to evaluate financial statements.

**OATS 140. Payroll Accounting**

**3 Credits (2+2P)**

Payroll procedures including payroll tax forms and deposits. Restricted to Community Colleges campuses only.

**Prerequisite:** ACCT 2110 or OATS 120.

**Learning Outcomes**

1. Payroll Laws and Regulations.
2. New Employee Records.
3. Time and Work Records.
4. Determining Gross Earnings.
5. Determining Payroll Deductions.
6. The Payroll Register.
7. Employee Earnings Record.
8. Paying Employees.
9. Federal Payroll Taxes and Tax Returns. 1
10. State Payroll Taxes and Tax Reports. 1
11. Accounting for Payroll. 1
12. Explain the accounting treatment of all taxes and other withholdings.

**OATS 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. Crosslisted with: HIT 150. Restricted to Community Colleges campuses only.

**Learning Outcomes**

1. Identify and define medical word roots, prefixes, and suffixes and abbreviations.
2. Examine and correctly spell medical terms using the basic elements of medical words.
3. Recall and properly pronounce common medical terms and the terminology related to the body's major organ systems.
4. Identify the primary medical terms used in various medical specialties.

5. Read a medical document and interpret the terminology efficiently and correctly.
6. Write a medical document with proper medical terminology and comprehension.

**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.

**Learning Outcomes**

1. Identify principal parts of a business letter in Spanish.
2. Understand use appropriate grammatical structures.
3. Identify and use appropriate letter styles and phrases.
4. Identify/recognize customer needs in the Spanish business-office environment in order to serve the business client.
5. Role-play telephone conversations in Spanish.
6. Demonstrate cross-culture elements of telephone etiquette.
7. Demonstrate knowledge of specific vocabulary needed to interact with customer on the telephone.

**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. Students should have Spanish speaking ability. Restricted to Community Colleges campuses.

**Prerequisite:** OATS 170.

**Learning Outcomes**

1. Augment written and communication skills in Spanish for the business world and office setting.
2. Broad the concepts of the office workplace and the office assistant's role.
3. Translate documents from English to Spanish.
4. Familiarize with specialized business terminology.
5. Learn techniques for effectively organizing work.
6. Produce professional-looking office documents in Spanish.
7. Present effective PowerPoint presentations in Spanish and English.
8. Know guidelines for handling office calls, scheduling appointments, making travel arrangements, arranging meetings and conferences.
9. Recognize the importance of ethical behavior for the office professional. 1
10. Utilize techniques for managing stress and time management.

**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.

**Learning Outcomes**

1. Understand the reasons for and legality of keeping Minutes.
2. Understand the various meeting types Minute formats.
3. Listen actively for accurate note-taking.

4. Prepare effectively for meetings.
5. Record the proceedings of different meeting types.
6. Transcribe and draft Minutes in the correct format.
7. Proofread and edit accurately.
8. Produce final Minutes in Standard Edited American English.

#### **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.

##### **Learning Outcomes**

1. Demonstrate accuracy and increase individual typing speed.
2. Increase abilities in proofreading and editing skills.
3. Produce complex, error free, quality business documents.
4. Demonstrate ability to use software features to create mailable documents.

#### **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.

##### **Learning Outcomes**

1. Develop an understanding of the concepts of the office workplace and the role of the office professional.
2. Utilize office software from Microsoft Office and Google.
3. Test for industry certification in Microsoft Outlook.
4. Apply knowledge, skills, and techniques to office tasks and situation.
5. Identify professional behaviors associated with an administrative professional.

#### **OATS 205. Accounting Software I**

##### **3 Credits (2+2P)**

Introduction to accounting software. Restricted to Community Colleges campuses only.

**Prerequisite:** Working knowledge of computers and accounting or consent of instructor.

##### **Learning Outcomes**

1. Set up Vendors/Customers on QuickBooks.
2. Make Period Ending Adjusting Entries on QuickBooks.
3. Manage Inventory using QuickBooks.
4. Set up a Company using QuickBooks.
5. Set up and Process Payroll using QuickBooks.
6. Monitor Banking Transactions using QuickBooks.
7. Monitor Jobs and Time Tracking using QuickBooks.

#### **OATS 207. Machine Transcription**

##### **3 Credits (2+2P)**

Creating office documents using transcribing equipment and word processing software. Emphasis on proofreading, editing and grammar. Restricted to Community Colleges campuses.

**Prerequisite:** OATS 105.

##### **Learning Outcomes**

1. Utilize transcription tools and word processing software to create business documents.
2. Apply proofreading marks to edit and compose revised letters, memos, and short business documents from transcribed material.
3. Develop active listening skills.

4. Build terminology for appropriate business language in various fields of employment.
5. Apply proper formatting, grammar, and punctuation skills to business-related documents.

#### **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. Students must have computer keyboarding ability. Restricted to Community Colleges campuses.

**Prerequisite:** HIT 150 or AHS 120.

##### **Learning Outcomes**

1. Demonstrate knowledge and apply the following medical office administrative procedures: (a) scheduling appointments; (b) communicating by telephone; (c) processing mail; (d) basic records management; (e) basic billing and collection procedures; (f) reception techniques; (g) originating or composing a variety of medical communications; (h) keeping financial records; (i) processing insurance claims; (j) emergency preparedness procedures.
2. Apply medical practice management and the systematizing of procedures, including utilization of computers.
3. Utilize medical terminology through assigned reading, reporting and practical applications.
4. Apply knowledge and application of principles of interpersonal communications.
5. Demonstrate proficiency in integrating the theoretical with the practical application through job skills.

#### **OATS 209. Business and Technical Communications**

##### **3 Credits (3)**

Effective written communication skills and techniques for career success in the work place. Composition of letters, memos, short reports, forms, and proposals, and technical descriptions and directions. Preferred background in computer keyboarding ability or by consent of instructor.

**Prerequisite:** ENGL 1110G.

##### **Learning Outcomes**

1. Analyze the audience and write to meet their information needs using correct sentence structure.
2. Organize information in the body of various types of memos, letters, and reports.
3. Write step-by-step instructions for completing a process.
4. Write an incident report, abstract of a professional journal article, and a progress (status) report.
5. Incorporate appropriate document design and graphics into various documents.
6. Acquire skill in primary and secondary research.
7. Use electronic communication effectively in a team-based classroom business.
8. Use software applications effectively when producing business/technical communications combining written and visual techniques.
9. Apply business ethics using critical thinking to analyze ethical case studies and write a personal response to the case studies.

#### **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.



**Learning Outcomes**

1. Apply basic MS Word concepts and techniques.
2. Utilize MS Word as a tool to create, design, and produce professional documents.
3. Apply appropriate formatting elements and styles to a range of document types.
4. Apply graphics and other visual elements to enhance written communication.
5. Test for industry certification in Microsoft Word.

**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 215. Spreadsheet Applications****3 Credits**

Use of spreadsheets to include graphics and business applications.

**Learning Outcomes**

1. Apply basic MS Excel concepts and techniques.
2. Utilize MS Excel as a tool to create, design, and produce professional documents.
3. Apply appropriate formatting elements and styles to a range of document types.
4. Apply graphics and other visual elements to enhance written communication.
5. Test for industry certification in Microsoft Excel.

**OATS 217. Presentation Software****3 Credits (3)**

Comprehensive, hands-on approach to learning and applying basic and advanced features of presentation software. These include text enhancements, objects, fills, colors, animation, charts, sound, video, and hyperlinks. Students demonstrate appropriate audience and communication tools to deliver presentations. May be repeated up to 3 credits.

**Prerequisite:** OATS 211 or ability to demonstrate keyboarding and Windows proficiency.

**Learning Outcomes**

1. Identify uses and purpose of presentation software.
2. Become familiar with basic presentation tools.
3. Create a simple presentation from scratch.
4. Produce a presentation that applies the following features: text enhancements, objects, lines, fills, and colors.
5. Produce a presentation that applies the following features: customized template, animation and slide show effects, flowcharts, organization charts, and diagrams, sound and video, hyperlinks.
6. Demonstrate effective presentation skills to a designated audience.

**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: OAT ,HIT. majors. Restricted to Community Colleges campuses.

**Learning Outcomes**

1. Apply decision-making and problem-solving skills by setting goals and objectives, self-reflection, and self-assessment.
2. Model soft skills appropriate for a professional business workplace.
3. Determine effective communication in various workplace relationships.
4. Develop career planning skills that include conducting a job search, collecting references, building a resume, creating a cover letter, and interviewing techniques.

**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. Restricted to Community Colleges campuses only.

**Prerequisite:** HIT 150 or AHS 120 and HIT 158 and OATS 209.

**Learning Outcomes**

1. Identify and define the knowledge, skills, abilities, and responsibilities required of a medical transcriptionist.
2. Understand the content, purpose, and format of inpatient and outpatient medical reports.
3. Define the medical terms and abbreviations presented, either by memory or by using a dictionary/reference book.
4. Transcribe medical reports using correct capitalization, punctuation, abbreviation, symbol, and metric measurement rules.
5. Complete the transcription of case studies (consisting of several reports) for each of the human systems.

**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. Restricted to Community Colleges campuses.

**Prerequisite:** HIT 150 or AHS 120.

**Learning Outcomes**

1. Comprehend the ramifications of a breach of confidentiality regarding patient information.
2. Follow requirements of different insurance carriers—i.e., HMO's Independent Provider Organizations, Medicare, Medicaid, Workmen's Compensation—in processing patient claims.
3. Process insurance claim form an initial patient visit through receipt of payment from insurance carrier.
4. Match ICD-10 code to appropriate diagnosis.
5. Analyze patient records to construct the insurance claim form and apply the requirements of different insurance carriers to that claim.

6. Classify and explain the various reimbursement systems and how they impact billing.
7. Identify issues of fraud and abuse and follow ethical principles by reviewing inpatient and outpatient cases.

### **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 of physician dictation with increasing speed and accuracy. This course furthers the student's medical transcription techniques, technologies, and editing skills needed to prepare to work in the medical transcription profession. Restricted to Community Colleges campuses only.

**Prerequisite:** OATS 223 and HIT 130.

#### **Learning Outcomes**

1. Recognize the terminology for diseases, conditions, and treatment protocols related to the specialties of dermatology, ophthalmology, otorhinolaryngology, pulmonology, cardiology, gastroenterology, obstetrics and gynecology, urology and nephrology, neurology, psychology, hematology and oncology, and immunology.
2. Describe the purpose and types of information contained in the most common kinds of reports transcribed.
3. Transcribe accurate and correctly formatted office notes, chart notes, consultation letters, history and physical reports, operative reports, discharge summaries, radiology reports, pathology reports, operative reports, labor and delivery reports, emergency department reports, neuropsychological evaluations, and autopsy reports.
4. Develop proofreading and editing skills and apply them to transcription work, including speech recognized text, based on industry standards.
5. Examine the job environment of medical transcription and demonstrate an ability to work effectively and efficiently with the tools of medical transcription, including productivity tools.
6. Define and use appropriate parameters for editing, correcting, and amending the electronic patient medical record using industry-accepted standards and references.
7. Understand the importance of patient record confidentiality and apply industry guidelines to keep medical documentation secure.

### **OATS 239. Personal Development**

#### **3 Credits (3)**

Development of a marketable, employable office systems person, to include interview, voice, manners, and apparel.

#### **Learning Outcomes**

1. Apply effective written business communication skills through completion of job search documents and responses to case studies.
2. Develop and deliver an oral presentation through informational interviews.
3. Work in a team-based environment through classroom activities and classmate pairings.
4. Apply business ethics through ethical dilemma case study responses.
5. Demonstrate proficiency in using software application (MS Word) and in keyboarding through assignment completion.
6. Apply time management and organizational skills by assembling an organized portfolio, completing assignments consistently, and submitting portfolio when due.
7. Demonstrate decision-making and problem-solving skills by setting personal goals and objectives, self-reflection, and self-assessment; through critical thinking case studies; and through ethical dilemma case studies.

8. Behave in an appropriate manner for an office environment by demonstrating soft skills such as attendance and timeliness; goal setting, prioritizing, and reporting; conflict resolution and business relationships; communication and customer service; and following verbal and written instructions.

### **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. Restricted to Community Colleges campuses only.

**Prerequisite:** OATS 120 or ACCT 2110.

#### **Learning Outcomes**

1. Describe the history of law and the beginnings of the American legal system.
2. Define terminology and elements involved in court practice and procedures.
3. Define criminal law.
4. Describe some of the types of tort crimes and define terminology related to them.
5. Define affirmative action and the Civil Rights Act of 1964
6. Describe the uses for contracts.
7. Explain legal capacity in reference to contracts.
8. Describe the processes involved in forming a contract.
9. Explain a third-party beneficiary contract. 1
10. Discuss some of the remedies available for a breach of contract. 1
11. Define and state the difference between and expressed and implied warranty. 1
12. Define products liability and different types. 1
13. Discuss some of the elements of consumer law. 1
14. Define bankruptcy, debtor, creditor, and debt. 1
15. Define insurance and the different types of insurance available. 1
16. Discuss the various types of tenancies. 1
17. Discuss the importance of having a will. 1
18. Discuss partnerships, limited partnerships, LLC's and corporations and the advantages and disadvantages of each. 1
19. Describe some of the different types of audits and their specific purposes. 2
20. Describe some of the methods used by businesses to assure a good audit trail. 2
21. Describe actions required in preparation for an audit. 2
22. Develop an understanding of risky transactions and internal controls that may lessen the risk of fraud and errors. 2
23. Understand that there are limitations to internal controls. 2
24. Define an internal audit function. 2
25. Prepare financial statements after year end adjusting entries.

### **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 255. Special Topics**

#### **1-4 Credits**

Specific subjects to be announced in the Schedule of Classes.

**OATS 270. Office Administration Technology Capstone****3 Credits (2+2P)**

Refines professional skills learned in the OAT program and ties all OAT coursework together. Restricted to Community Colleges campuses.

**Prerequisite:** OATS 102 or OATS 129; and OATS 120; and OAT S 209 or ENGL 2210G; 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

**OATS 298. Independent Study****1-3 Credits (1-3)**

Individual studies directed by consenting faculty with prior approval of department head. sophomore standing with 3.0 GPA. May be repeated up to 3 credits.

**Learning Outcomes**

1. Varies

## OEEM-BIOMEDICAL TECHNOLOGY (OEEM)

**OEEM 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.

**OEEM 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. Corequisite(s):

OEEM 140

**Learning Outcomes**

1. Students will identify historical developments of device, explain the role of BMET personnel, and categorize the usage and methods of medical devices relating to the human body.
2. Students will identify and define, contrast, explain, and demonstrate medical diagnostic and measurement devices.
3. Students will identify and define, compare, explain, and demonstrate medical treatment devices.
4. Students will identify and define, and demonstrate medical system safety procedures, troubleshooting techniques, and testing methods.
5. Students will identify, compare, define, and demonstrate usage of biomedical test and calibration equipment.

**OEEM 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):** OEEM 140 and OEEM 141.

**OEEM 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):** OEEM 241 AND OEEM 240. Restricted to Community Colleges campuses only.

**OEEM 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):** OEEM 140.

**OEEM 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):** OEEM 141.

## OECS-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.

**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.

**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 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 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.
2. Students will create a basic web page utilizing WC3 principles.
3. Students will explain the importance and impact of web presence in today's business environment.
4. Students will determine and utilize web page features and techniques for a specific business.
5. Students will create a web design management plan for business.

6. Students will discuss web page tools for performance and web traffic analytics.
7. Students will identify web design components for a motble society.

**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.

**OECS 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):** OECS 220. Restricted to Community Colleges campuses only.

**OECS 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):** OECS 207. Restricted to Community Colleges campuses only.

**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.
2. Generate and summarize data.
3. Use tools for business projections, comparisons, trends, and informed decisions.
4. Create advanced queries and enhance table design.
5. Use form tools and create custom forms.
6. Use automation tools for efficiency.
7. Secure and maintain data.

8. Plan, research, create, and revise spreadsheets and databases for a specific business application.

9. Discuss emerging topics in business related to data analysis and management.

**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.

## **OEEEM- PARAMEDIC (OEEEM)**

### **OEEEM 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.

### **OEEEM 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.

### **OEEEM 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):** OEEEM 101.

### **OEEEM 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):** OEEEM 101, OEEEM 120L, OEEEM 121.

**Prerequisite(s)/Corequisite(s):** OEEEM 153. Restricted to: OEEEM majors. Restricted to Community Colleges campuses only.

### **OEEEM 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):** OEEEM 101, OEEEM 120, OEEEM 121.

**Prerequisite(s)/Corequisite(s):** OEEEM 153. Restricted to: OEEEM majors. Restricted to Community Colleges campuses only.

### **OEEEM 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):** OEEEM 101, OEEEM 120, OEEEM 120L, OEEEM 153. Restricted to: OEEEM majors. Restricted to Community Colleges campuses only.

### **OEEEM 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: OEEEM majors. Restricted to Community Colleges campuses only.

**Prerequisite(s):** Current EMT-basic license, pretest and consent of instructor.

### **OEEEM 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):** OEEEM 150, OEEEM 151. Restricted to: OEEEM majors. Restricted to Community Colleges campuses only.

### **OEEEM 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):** OEEEM 150, OEEEM 150 L. Restricted to: OEEEM majors. Restricted to Community Colleges campuses only.

### **OEEEM 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.

### **OEEEM 155. Special Topics**

#### **1-6 Credits**

Specific topics to be listed in Schedule of Classes. May be repeated for a maximum of 10 credits.

### **OEEEM 201. Human Systems, Pathophysiology and Development**

#### **3 Credits (3)**

A course which provides a survey of human anatomy and physiology, pathological processes, and life span development. Emphasis is placed on interrelationships among organ systems and deviation from homeostasis. Restricted to: OEMS, OEEEM majors. Restricted to Community Colleges campuses only. May be repeated up to 3 credits.

**Prerequisite:** OEEEM 120, OEEEM 120 L.

#### **Learning Outcomes**

1. Explain the general terminology, anatomy, and physiology of the human body.
2. Apply principles of normal anatomy and physiology of the human body to the pathophysiologic processes of common health problems.
3. Associate pathophysiology to patient assessment and treatment.
4. Describe key physiologic and psychosocial changes that occur in different age groups.

### **OEEEM 202. Airway and Respiratory Emergencies**

#### **2 Credits (2)**

A course which focuses on the anatomy, physiology, and pathophysiology of the respiratory system. Integrates the knowledge to develop and implement a comprehensive treatment plan, with the goal of assuring a patent airway, adequate mechanical ventilation and respiration for patients of all ages. Requires a "C" or better to pass. Restricted to: OEEM majors. Restricted to Community Colleges campuses only. May be repeated up to 2 credits.

**Prerequisite:** OEEM 201, OEEM 206, OEEM 207.

**Corequisite:** OEEM 202 L.

**Learning Outcomes**

1. Demonstrates an understanding of the mechanics, neurological control and diseases impacting respiration and ventilation.
2. Demonstrates an understanding of various methods, tools and techniques to assure a patent airway, ventilation and respiration.
3. Integrate assessment findings with emergency pharmacology and relevant tools to create and implement treatment plans for patients with medical or trauma related respiratory complaints.

**OEEM 202 L. Airway and Respiratory Emergencies**

**1 Credit (3P)**

A course which focuses on the anatomy, physiology, and pathophysiology of the respiratory system. Integrates the knowledge to develop and implement a comprehensive treatment plan, with the goal of assuring a patent airway, adequate mechanical ventilation and respiration for patients of all ages. Requires a "C" or better to pass. Restricted to: OEEM majors. Restricted to Community Colleges campuses only. May be repeated up to 2 credits.

**Prerequisite:** OEEM 201, OEEM 206, OEEM 207.

**Corequisite:** OEEM 202.

**Learning Outcomes**

1. Appropriately utilizes various methods, tools and techniques to assure a patent airway, ventilation and respiration.
2. Integrates assessment findings with emergency pharmacology and relevant tools to implement treatment plans for patients with medical or trauma related respiratory complaints.
3. Act as an entry-level Paramedic team leader in an airway management, ventilation or respiratory simulation.

**OEEM 203. Paramedic Trauma Care**

**2 Credits (2)**

A course which covers the mechanism of injury, pathophysiology, diagnosis, assessment, treatment and care of the trauma and environmental emergency patient. Consent of instructor. Restricted to majors. Requires a C or better to pass. Restricted to: OEEM majors. Restricted to Community Colleges campuses only. May be repeated up to 2 credits.

**Prerequisite:** OEEM 201, OEEM 206, OEEM 207.

**Corequisite:** OEEM 203 L.

**Learning Outcomes**

1. Understands epidemiology, trauma scoring and destination decisions.
2. Formulates comprehensive and focused assessment strategies for minor, moderate and critically ill patients with bleeding; chest, abdominal, genitourinary, orthopedic, soft tissue, head, face, neck, spine, nervous system trauma.
3. Construct assessment and treatment plans for vulnerable trauma patient populations including the cognitively impaired, pregnant, pediatrics and geriatrics.
4. Understands the pathophysiology, assessment, management and treatment of environmental emergencies.

5. Understands the pathophysiology, assessment, management and treatment of the multisystem trauma patient.

**OEEM 203 L. Paramedic Trauma Care Lab**

**1 Credit (3P)**

A practical course which covers the mechanism of injury, pathophysiology, diagnosis, assessment, treatment and care of the trauma and environmental patient. Consent of instructor. Restricted to majors. Requires a C or better to pass. Restricted to: OEEM majors. Restricted to Community Colleges campuses only. May be repeated up to 1 credit.

**Prerequisite:** OEEM 201, OEEM 206, OEEM 207.

**Corequisite:** OEEM 203.

**Learning Outcomes**

1. Applies an understanding of epidemiology, trauma scoring and destination decisions.
2. Implements comprehensive and focused assessment strategies for minor, moderate and critically ill patients with bleeding; chest, abdominal, genitourinary, orthopedic, soft tissue, head, face, neck, spine, nervous system trauma.
3. Constructs and applies assessment and treatment plans for vulnerable trauma patient populations including the cognitively impaired, pregnant, pediatrics and geriatrics.
4. Applies an understanding of the pathophysiology, assessment, management and treatment of environmental emergencies.
5. Applies an understanding of the pathophysiology, assessment, management and treatment of the multisystem trauma patient.

**OEEM 206. Introduction Paramedic Practice**

**3 Credits (3)**

A course which introduces students to the advanced practice of prehospital medicine, research, medical legal issues, the wellbeing of the provider. Reviews foundational EMS knowledge and the NM Paramedic Scope of Practice. Emphasizes paramedic operations within the healthcare system. Requires a C or better to pass. Restricted to majors. Consent of instructor required. Restricted to: Community Colleges only. Restricted to OEEM majors. May be repeated up to 3 credits.

**Prerequisite:** OEEM 120, OEEM 120 L, OEEM 121.

**Learning Outcomes**

1. Discuss paramedic roles and responsibilities within an EMS system.
2. Analyze and interpret research and describe how to integrate findings into evidence
3. Integrates health and safety principles to maintain provider, crew and situational awareness, safety, and wellbeing.
4. Uses appropriate written or electronic tools to effectively document the essential elements of patient care and transport.
5. Explains the components of the EMS communications systems and the importance of Quality Assurance/Quality Improvement.
6. Applies the appropriate techniques of therapeutic communication with patients, families and other healthcare team members.
7. Identifies relevant laws and ethical issues which impact decisions made in healthcare settings.

**OEEM 207. Emergency Pharmacology**

**2 Credits (2)**

A course which integrates comprehensive knowledge of pharmacology to formulate a treatment plan intended to mitigate emergencies and improve the overall health of the patient. Discusses physiologic actions, pharmacodynamics, pharmacokinetics, therapeutic effects, medication administration, dosages and interactions. Restricted to majors. Requires

a C or better to pass. Restricted to: Community Colleges only. Restricted to OEEM majors. May be repeated up to 2 credits.

**Prerequisite:** OEEM 120 OEEM 120 L, OEEM 121.

**Corequisite:** OEEM 207 L.

#### **Learning Outcomes**

1. Explains relevant terms, processes and definitions relating to pharmacology.
2. Describes safety, storage and security, legislation, naming, classification and scheduling of medications.
3. Demonstrates appropriate decision making regarding medication administration to mitigate emergencies and improve overall health of the patient.
4. Demonstrates an understanding of the dosages, routes, indications, contraindications, mechanism of actions, side effects of medications in the National and NM Paramedic Scope of Practice.
5. Demonstrates application of ethical, legal, communication and documentation aspects of emergency pharmacology.

#### **OEEM 207 L. Emergency Pharmacology Lab**

##### **1 Credit (3P)**

A course which integrates comprehensive knowledge of pharmacology to formulate a treatment plan intended to mitigate emergencies and improve the overall health of the patient. Students will practice medication administration, calculate medication dosages, vascular access, fluid administration and other related skills. Requires a C or better to pass. Instructor permission required. Restricted to: Community Colleges only. Restricted to OEEM majors. May be repeated up to 1 credit.

**Prerequisite:** OEEM 120, OEEM 120 L, OEEM 121.

**Corequisite:** OEEM 207.

#### **Learning Outcomes**

1. Demonstrates an ability to safely administer medications in the national and NM Paramedic Scope of Practice.
2. Calculates the correct volume, flow rate and amount of medication to be administered in a given situation.
3. Demonstrates an ability to administer medications as appropriate based on patient presentations.

#### **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: 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 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.

## **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.

## **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. Restricted to Community Colleges campuses only.

**Prerequisite:** Grade of "C-" or better in OETS 104 or CCDM 103 N, or appropriate placement test score.

##### **Learning Outcomes**

1. Use mathematics and problem solving techniques to analyze and find answers to money and financial problems.
2. Use estimations to solve problems and check answers to make sure they are reasonable.
3. Analyze and solve problems using the tools and techniques of algebra.
4. Use geometry to find circumference, perimeters, areas and volumes of various plane and solid materials and spaces.
5. Use trigonometry to solve problems involving triangular shapes.
6. Use systems of equations and quadratic equations to solve technical problems.

#### **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 1330. 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.

**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.

**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. May be repeated up to 10 credits.

**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 1830. Running:****1 Credit (1)**

Individual sections vary based on topic content; "audience"; type or level of participation. May be repeated up to 4 credits.

**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 (1-3)**

Specific subjects to be announced in the Schedule of Classes. Each offering will carry appropriate subtitle. May be repeated up to 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 use 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. Philosophy and World Religions**

##### **3 Credits (3)**

A philosophical enquiry into the religious life; an introduction to philosophical questions about religions focused on consideration of some of the traditional approaches to God and what it means to be religious. May be repeated up to 3 credits.

##### **Learning Outcomes**

1. Identify and describe philosophical 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 philosophical beliefs, practices, and ethical standards of the major world religions as well as emerging religious movements.
5. Explain how each religion evolved historically, philosophically, and spiritually as well as the contemporary ideas and practices 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 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. May be repeated up to 3 credits.

##### **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 1110H. Personal Health and Wellness Honors**

#### **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. In addition students will complete an experiential learning component or project. May be repeated up to 3 credits.

#### **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 3210. Cannot receive credit for both PHLS 2110 and PHLS 3210. May be repeated up to 3 credits.

**Prerequisite:** 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/strategies in health education advocacy.
9. Describe and discuss the future trends and issues in the professional preparation and practice of professional health educators. 1
10. Demonstrate effective and appropriate oral and written communication skills for health education professionals.

### **PHLS 2120. Essentials of Public Health**

#### **3 Credits (3)**

The course will focus on principles and major areas of public health, including ecological and total personal concept of health care system, epidemiological approaches to disease prevention and control. Consent of Instructor required. May be repeated up to 3 credits.

#### **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 1110. Explorations in Physics**

#### **1 Credit (1)**

This course will introduce students to university resources, pre-professional student societies, learning strategies to help strengthen academic performance, and will explore career paths for graduates. Students will also discuss the roles of physicists in society, physics research being performed at and nearby NMSU, and what the latest discoveries in physics tell us about nature and the universe.

#### **Learning Outcomes**

1. Describe effective learning strategies for science/engineering classes.
2. Give examples of impactful scientists from groups underrepresented in physics and describe their career paths.
3. Research examples of positions open to physics majors.
4. Identify critical components of an effective resume.
5. Write a professional cover letter for an internship/undergraduate research application.
6. Discuss the boundaries of ethical science and give an example of an accidental breach of ethics.
7. Describe the societal impact of misinformation about scientific results or research.
8. Explore ways scientists can engage with the general public to shape the discourse of knowledge or the ways scientists are perceived.
9. List some of the burning questions current physicists are trying to answer. 1
10. Establish a sense of community within the department, the university, and the greater physics world. 1
11. Discover useful resources to help with academic success and avoid pitfalls while pursuing a physics degree. 1

12. Better understand the value of a physics degree, and what can be expected entering the workforce or academia. 1
13. Understand and discuss how the field of physics connects with the issues and problems facing society today.

**PHYS 1111. Introductory Computational Physics****3 Credits (2+2P)**

Introduction to computational techniques for the solution of physics-related problems.

**Prerequisite:** a C- or better in MATH 1220G or MATH 1250G or MATH 1511G.

**Learning Outcomes**

1. Use computers for visualizing and analyzing data.
2. Apply techniques of structured programming and software development.
3. Trouble shoot and debug programs.

**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. Apply concepts of classical mechanics (such as velocity, acceleration, force, inertia, momentum, torque, work, energy) to simple static and dynamic systems.
2. Apply concepts of thermodynamics (such as heat, temperature, internal energy, entropy) to simple processes.
3. Apply concepts of electricity and magnetism (such as fields, potential, charge conservation, static and dynamic induction) to simple circuits, motors, and other simple contrivances.
4. Apply simple geometric and wave optics in simple situations.
5. Test ideas using modern laboratory equipment.
6. Estimate experimental uncertainties.
7. Use computers to analyze and report laboratory results.
8. Draw appropriate conclusions from quantitative scientific observations.
9. Accurately and clearly communicate the results of scientific experiments.

**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.
3. Estimate experimental uncertainties using statistical methods.
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.
3. Estimate experimental uncertainties using statistical methods.
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.

**Prerequisite:** a C- or better in ENGR 190 or 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.

**Prerequisite:** a C- or better in ( PHYS 2110 or PHYS 1310G ) and ( ENGR 190 or 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/Corequisite:** MATH 1511G or higher.

**Learning Outcomes**

1. Describe matter as particles or extended objects, analyze forces or torques acting on it, and apply Newton's laws to determine if the object is in equilibrium or predict any change in the motion of such an object.
2. Apply vector algebra to predict motion or analyze interactions in one or two dimensions.
3. Apply techniques of conservation laws (linear momentum, energy, angular momentum) to determine the effect of interactions that are internal or external to the system studied.
4. Analyze systems in simple harmonic motion and explain qualitatively under what condition a driven oscillating system shows the phenomenon of resonance.
5. Use multiple representations to build, interpret and communicate a model, including visual representations such as sketches or diagrams, mathematical expressions, graphs, or text.
6. Given two or more cases, perform a ranking task by evaluating the similarities (comparison) or differences (contrast) in the cases and applying physics principles.
7. Self-check reasonableness of assumptions and solutions, making use of limiting cases or symmetry arguments.
8. Analyze real-world phenomena by defining and formulating the question or problem, constructing simplified idealized models (and stating their limitations), and applying appropriate mathematical reasoning to make predictions or explain a phenomenon or function.
9. Communicate effectively with audiences of different scientific backgrounds by recognizing their needs and making the communication relevant and impactful. 1
10. Work collegially and collaboratively in diverse teams both as a leader and as a member in pursuing a common goal.

**PHYS 2110L. Experimental Mechanics****1 Credit (3P)**

Laboratory experiments associated with the material presented in PHYS 2110. Science majors.

**Prerequisite/Corequisite:** PHYS 2110.

**Learning Outcomes**

1. Test scientific questions or ideas using appropriate laboratory equipment.
2. Collect experimental data and evaluate the outcomes of an experiment qualitatively and quantitatively.
3. Estimate measurement uncertainty.
4. Apply appropriate methods of analysis to raw data, including graphical or statistical methods, and computer-based tools.
5. Draw appropriate conclusions from quantitative scientific data.
6. Communicate the process and the outcomes of an experiment and reflect on possible revisions in the procedure.

7. Work effectively as part of a team.
8. Demonstrate professional responsibility.

**PHYS 2111. Supplemental Instruction to PHYS 2110****1 Credit (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 credit.

**Corequisite:** 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.

**Prerequisite:** a C- or better in PHYS 2110 or PHYS 1310G, and MATH 1511G or higher.

**Learning Outcomes**

1. Analyze real world phenomena that meet specific needs and use scientific judgement to draw conclusions.
2. Use multiple representations to build, interpret and communicate scientific models, including visual representations such as sketches or diagrams, mathematical expressions, graphs, or text.
3. Analyze oscillations and wave phenomena.
4. Analyze properties of sound waves.
5. Analyze properties of light using interference and diffraction.
6. Analyze light propagation through media using index of refraction and optical apparatus.
7. Analyze optical systems using light propagation.
8. Analyze the laws of thermodynamics and use them to describe processes in gases and other states of matter.

**PHYS 2120L. Heat, Light, and Sound Laboratory****1 Credit (3P)**

Laboratory experiments associated with the material presented in PHYS 2120. Science majors.

**Prerequisite:** a C- or better in PHYS 2110L or PHYS 1310L.

**Prerequisite/Corequisite:** PHYS 2120.

**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.

- Determine whether results and conclusions are reasonable.
- Present experimental results in written form in appropriate style and depth.
- Understand the relationship between theory and experiment.

#### **PHYS 2121. Supplemental Instruction to PHYS 2120**

##### **1 Credit (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 credit.

**Corequisite:** PHYS 2120.

##### **Learning Outcomes**

- Analyze real world phenomena by constructing simplified idealized models and appropriate mathematical reasoning to make predictions or explain a 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.
- 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.
- Self-check reasonableness of assumptions and solutions, making use of limiting cases or symmetry arguments.
- 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.

**Prerequisite:** a C- or better in PHYS 2110 or PHYS 1310G, and MATH 1511G or higher.

**Prerequisite/Corequisite:** MATH 1521G.

##### **Learning Outcomes**

- Analyze real-world phenomena by deciding what information is relevant and constructing simplified idealized models and appropriate mathematical reasoning to make predictions or explain a phenomenon 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.
- Use a physics problem-solving strategy: i. Identify relevant concepts. ii. Introduce and study simplified models. iii. Use symmetry arguments. iv. Establish the relation between known and unknown quantities. v. Calculate a quantitative result using appropriate mathematical methods. vi. Self-check reasonableness of assumptions and solutions.
- Analyze/predict the interaction of charged particles, dipoles, or conductors with electric or magnetic fields. Apply concepts of force, work, or energy.
- Describe sources of electric fields or magnetic fields and calculate field vectors for a point in space.
- Apply Gauss's law to calculate electric fields for symmetric charge distributions or to determine surface charges on conductors in electrostatic equilibrium.
- Apply Ampere's law and the Law of Biot-Savart to calculate magnetic fields.

- Evaluate if magnetic flux changes and if an electric field or electric current is induced. Determine the direction of the induced current or the non-Coulomb electric field by applying Lenz's law. Apply Faraday's law to relate the rate of change of magnetic flux with the magnitude of emf induced.
- Calculate and discuss properties of electric circuits (dc) with resistors, capacitors, and inductors applying Kirchhoff's rules or Ohm's law. 1
- Discuss how the presence of a capacitor or an inductor modifies the behavior of a (dc) circuit and determine the time dependence of the current. 1
- For a series RLC-circuit (or RC, LC, RL) with an ac-voltage source apply the concept of impedance or reactance to calculate the current through or voltages across each of the circuit elements, especially in the low-frequency limit, high-frequency limit, or at the resonant frequency.

#### **PHYS 2140L. Electricity & Magnetism Laboratory**

##### **1 Credit (3P)**

Laboratory experiments associated with the material presented in PHYS 2140.

**Prerequisite:** a C- or better in PHYS 2110 or PHYS 1310G.

**Prerequisite/Corequisite:** PHYS 2140.

##### **Learning Outcomes**

- Develop a reasonable hypothesis.
- Work effectively as part of a team.
- Take measurements and record measured quantities to the appropriate precision.
- Estimate error sources in experimental techniques.
- Apply appropriate methods of analysis to raw data, including using graphical and statistical methods via computer-based tools.
- Determine whether results and conclusions are reasonable.
- Present experimental results in written form in appropriate style and depth.
- Understand the relationship between theory and experiment.

#### **PHYS 2141. Supplemental Instruction to PHYS 2140**

##### **1 Credit (1)**

Optional workshop as a supplement to PHYS 2140. The tutorial sessions focus on reasoning and hands-on problem solving.

**Corequisite:** PHYS 2140.

##### **Learning Outcomes**

- Analyze real-world phenomena by constructing simplified idealized models and appropriate mathematical reasoning to make predictions or explain a phenomenon 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.
- In the contexts of concepts and physical laws discussed in PHYS 2140, apply quantitative analysis to solve problems, including the use of symmetry to study electric and magnetic fields. Practice concepts of calculus applied to charge and current distributions.
- Self-check reasonableness of assumptions and solutions, making use of limiting cases or symmetry arguments.
- Develop learning strategies and use metacognition to promote thinking in the discipline.

#### **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.

**Prerequisite:** A C- or better in MATH 1220G 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.

**Corequisite:** 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.

**Prerequisite:** 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: interpret or 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****1,4 Credits**

Topics to be announced in the Schedule of Classes. May be repeated up to 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 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 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 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 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 upper division course work and research. May be repeated up to 1 credit.

**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. 1
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-PORTUGUESE (PORT)

**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 1115. Introduction to the Psychology Major****1 Credit (1)**

This course is designed to give Psychology majors the knowledge and tools they need to get the most out of the major and assist them in making informed decisions about career choices in Psychology. There are two main goals for this course. The first is to provide students with helpful tools and resources to enhance their experience as a Psychology major. The second goal is to delineate the knowledge and skills that students are expected to acquire with a Psychology degree and to convey how these can be applied in their future academic, professional, and personal endeavors beyond graduation. During the semester, students will discuss the subdisciplines of Psychology and explore career options with varying levels of education. Students will learn about course requirements for the Psychology major and experiential learning opportunities available outside the classroom. This 1-credit course is required for Psychology majors. It is recommended that students take this course as soon as they declare Psychology as their major. This course may be taken in conjunction with Introduction to Psychology.

**Prerequisite/Corequisite:** PSYC 1110G.

**Learning Outcomes**

1. Demonstrate knowledge and understanding of the subdisciplines of Psychology.
2. Demonstrate knowledge and understanding of the requirements of the Psychology major and experiential opportunities available to Psychology majors.
3. Identify career opportunities available to individuals with varying levels of education in Psychology and related fields (e.g., BA, MA, PhD, etc.).
4. Adopt strategies to prepare for future success in a job search or graduate school application.
5. Exhibit information literacy skills (e.g., literature searches, use of APA format) that will facilitate success in future Psychology courses.
6. Identify personal attributes as a student, areas of Psychology that are aligned with personal strengths, and strategies to make the most of personal strengths as a student.

**PSYC 2110. Social Psychology****3 Credits (3)**

This course is an introduction to the scientific study of human social influence and interaction, and explores how an individual's actions, emotions, attitudes and thought processes are influenced by society and other individuals. May be repeated up to 3 credits.

**Prerequisite:** PSYC 1110G, MATH 1215, and ENGL 1110G.

**Learning Outcomes**

1. Identify concepts, theories, scientific methods, and research findings relevant to social psychology.
2. Explain how situational, social, and individual factors influence behavior.
3. Apply social psychological concepts to real-life events, current social issues and problems, and one's own life.

**PSYC 2120. Developmental Psychology****3 Credits (3)**

Study of human physical and psychological change and stability from a lifespan development perspective. May be repeated up to 3 credits.

**Prerequisite:** PSYC 1110G, MATH 1215, and ENGL 1110G.

**Learning Outcomes**

1. Explain theories, methods and research findings of lifespan developmental psychology.
2. Describe the interaction between physical, cognitive, and psychosocial development across the lifespan.
3. Compare and contrast major developmental theories and discuss what each brings to or adds to the study of lifespan developmental psychology.
4. Identify factors that influence psychological development across the lifespan.
5. Apply basic principles of developmental psychology to one's own life experiences.
6. Analyze historical and cultural factors that influence development across the lifespan.

**PSYC 2210. Abnormal Psychology****3 Credits (3)**

This course provides students with an introduction to the field of abnormal psychology. Subject areas include history, methods, theories, etiologies, classification and treatment of disorders. May be repeated up to 3 credits.

**Prerequisite:** PSYC 1110G, MATH 1215 and ENGL 1110G.

**Learning Outcomes**

1. Recognize terms used within the field of abnormal psychology.
2. Compare various methods for defining abnormal behavior.
3. Evaluate the development of classification systems that define "normal" and "abnormal" from historical, social, and cultural contexts.
4. Critically evaluate the symptoms and etiologies of mental health disorders in the current psychological diagnostic system.
5. Describe treatment modalities for mental health disorders.
6. Identify biological and psychological processes in mental health disorders.

**PSYC 2220. Cognitive Psychology****3 Credits (3)**

The course provides an overview of human cognitive processes such as attention, perception, memory, language, categorization, decision-making, reasoning, and problem solving. Includes methods, theories, and applications. May be repeated up to 3 credits.

**Prerequisite:** PSYC 1110G, MATH 1215, and ENGL 1110G.

**Learning Outcomes**

1. Describe research findings in the major areas of human cognition.
2. Differentiate the research methods used to study the various topics in cognitive psychology.
3. Apply theories of cognition to the results of laboratory research.
4. Apply the research on cognitive psychology to topics in the real world.

**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 2250. Brain and Behavior****3 Credits (3)**

A general survey of the biological foundations of behavior and mental processes. Students will gain an understanding of anatomy, physiology, and chemistry of the nervous system and their relationships to human behavior. May be repeated up to 3 credits.

**Prerequisite:** PSYC 1110G, MATH 1215 and ENGL 1110G.

**Learning Outcomes**

1. Identify and describe basic neuroanatomical structures and functions.
2. Identify and describe chemical processes of the nervous system.
3. Apply course concepts to psychological processes, such as learning, memory, sensation, perception, drive states, sleep, and language.
4. Apply course concepts to psychological disorders, such as schizophrenia and mood and anxiety disorders.
5. Describe the techniques used to study the relationship between brain and behavior.

**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 readings and discussions, students will be able to describe the role that gender, ethnicity, and age have in alcohol and drug use.
2. Through readings and discussions, students will be able to learn past and current perspectives of addiction.
3. Through readings, discussions and student presentations, students will be able to distinguish between different types of abuse-able drugs and be able to classify them.
4. Through readings, discussions, lectures and guest speaker's students will be able to describe the role of addiction and criminal behavior.
5. Through readings and discussions, students will be able to discuss the Models and Theories of Drug Dependence and Addiction.
6. Through readings, discussions and evaluation of case studies students will be able to discuss the definitions of Substance Abuse, Dependence Addiction.
7. Through readings and discussions, students will be able to acquaint themselves with the effects of Addictive Behavior on Family Systems.
8. Through readings discussions, students will be able to Discuss Disorders Co-Occurring with Substance Abuse
9. Through readings and community service learning outing, students will be able to discuss how important the concepts of Prevention, Intervention and Treatment in drug addiction.1
10. Through readings and community service learning outing students will be able to discuss Alcohol/Drug Recovery Treatment Relapse Prevention 1
11. Through completion of Service Learning and field assignment students will be able to discuss the role of AA/NA in Recovery Treatment. 1
12. 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****3 Credits (3)**

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.

**Learning Outcomes**

1. Students will demonstrate the ability to produce diagnostic radiographic images safely.
2. Students will demonstrate effective communication skills.
3. Students will accurately document/record data in accordance with clinical site policies and procedures.
4. Students will demonstrate the ability to use independent judgment.
5. Students will conduct themselves professionally to function effectively as healthcare team members.

**RADT 101. Radiographic Positioning I****2 Credits (2)**

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.

**Learning Outcomes**

1. Students will demonstrate the ability to produce diagnostic radiographic images safely.
2. Students will be able to position patients and identify radiographic anatomy and pathological conditions appropriately.
3. Students will demonstrate effective communication skills.
4. Students will accurately document/record data in accordance with clinical site policies and procedures.
5. Students will demonstrate the ability to use independent judgement.
6. Students will analyze radiographic images for technical and positioning accuracy to make modifications as needed.

**RADT 101 L. Radiographic Positioning I Applied Clinical Skills****1 Credit (3P)**

Applied clinical skills lab in radiographic procedures and positioning concepts, techniques, terminology, and mechanics related to the thorax, abdomen, extremities, spine and pelvis.

**Corequisite:** RADT 101.

**Learning Outcomes**

1. Students will demonstrate the ability to produce diagnostic radiographic images safely.
2. Students will be able to position patients and identify radiographic anatomy and pathological conditions appropriately.
3. Students will demonstrate effective communication skills.
4. Students will accurately document/record data in accordance with clinical site policies and procedures.
5. Students will demonstrate the ability to use independent judgement.
6. Students will analyze radiographic images for technical and positioning accuracy to make modifications as needed.

**RADT 102. Radiographic Positioning II****2 Credits (2)**

Continuation of RADT 101. Includes skull, gastrointestinal, urinary, reproductive, biliary systems, and more advanced skeletal positions. Includes positioning lab and clinical observation. Restricted to: Dona Ana campus only. Restricted to Majors.

**Prerequisite:** RADT 101.

**Learning Outcomes**

1. Students will demonstrate the ability to produce diagnostic radiographic images safely.
2. Students will be able to appropriately position patients, identify radiographic anatomy and pathological conditions.
3. 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 judgment.
- Students will analyze radiographic images for technical and positioning accuracy to make modifications as needed.
- Students will conduct themselves professionally to function effectively as healthcare team members.

**RADT 102 L. Radiographic Positioning II Applied Clinical Skills  
1 Credit (3P)**

Continuation of RADT 101. Applied Clinical Skills lab: Includes skull, gastrointestinal, urinary, reproductive, biliary systems, and more advanced skeletal positions.

**Corequisite:** RADT 102.

**Learning Outcomes**

- Students will demonstrate the ability to produce diagnostic radiographic images safely.
- Students will be able to position patients and identify radiographic anatomy and pathological conditions appropriately.
- 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 judgment.
- Students will analyze radiographic images for technical and positioning accuracy to make modifications as needed.
- Students will conduct themselves professionally to function effectively as healthcare team members.

**RADT 103. Introduction to Radiographic Imaging  
2 Credits (2)**

Provides the student with an in-depth knowledge of radiographic exposure technique and the factors affecting radiographic image quality. Restricted to majors.

**Learning Outcomes**

- Students will demonstrate the ability to produce diagnostic radiographic images safely.
- Students will demonstrate effective communication skills.
- Students will analyze radiographic images for technical and positioning accuracy to make modifications as needed.

**RADT 103 L. Intro to Radiographic Imaging Applied Clinic Skills  
1 Credit (3P)**

Applied clinical skills lab to provide the student with an in-depth knowledge of radiographic exposure technique and the factors affecting radiographic image quality. Restricted to majors.

**Corequisite:** RADT 103.

**Learning Outcomes**

- Students will demonstrate the ability to produce diagnostic radiographic images safely.
- 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  
3 Credits (3)**

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. Restricted to RADT Majors. Restricted to Community College Campuses

**Prerequisite:** RADT 103.

**Learning Outcomes**

- Students will be able to position patients and identify radiographic anatomy and pathological conditions appropriately.
- Students will demonstrate appropriate and effective communication skills.
- Students will conduct themselves professionally to function effectively as healthcare team members.

**RADT 105. Radiographic Physics and Equipment  
3 Credits (3)**

Fundamentals of radiographic physics and imaging theory. Includes the atom, electromagnetism, x-ray production and interaction, electric x-ray circuitry, digital fluoroscopic units and digital x-ray equipment, and quality assurance/control. With brief overview of mammography, computed tomography (CT), and MRI imaging.

**Prerequisite/Corequisite:** C- or above in RADT 103.

**Learning Outcomes**

- Students will demonstrate the ability to produce diagnostic radiographic images safely.
- Students will demonstrate the ability to use independent judgment.
- Students will analyze radiographic images for technical and positioning accuracy to make modifications as needed.

**RADT 110. Radiographic Pathology  
3 Credits (3)**

Overview of pathology demonstrated by radiographic procedures. Restricted to RADT majors.

**Prerequisite:** RADT 154.

**Learning Outcomes**

- Students will be able to position patients and identify radiographic anatomy and pathological conditions appropriately.
- Students will analyze radiographic images for technical and positioning accuracy to make modifications as needed.
- Students will demonstrate the ability to use independent judgment.

**RADT 111. Radiographic Positioning I Practicum  
1 Credit (4P)**

Practicum in radiographic procedures and positioning concepts, techniques, terminology, and mechanics related to the thorax, abdomen, extremities, spine and pelvis.

**Corequisite:** RADT 101.

**Learning Outcomes**

- Students will demonstrate the ability to safely produce diagnostic radiographic images.
- Students will be able to position patients and identify radiographic anatomy and pathological conditions appropriately.
- 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.

**RADT 112. Radiographic Positioning II Practicum  
1 Credit (4P)**

Continuation of RADT 101. Practicum: Includes skull, gastrointestinal, urinary, reproductive, biliary systems, and more advanced skeletal positions.

**Corequisite:** RADT 102.

**Learning Outcomes**

1. Students will demonstrate the ability to produce diagnostic radiographic images safely.
2. Students will be able to position patients and identify radiographic anatomy and pathological conditions appropriately.
3. Students will demonstrate effective communication skills.
4. Students will accurately document/record data in accordance with clinical site policies and procedures.
5. Students will demonstrate the ability to use independent judgment.
6. Students will conduct themselves professionally to function effectively as healthcare team members.
7. Students will conduct themselves in a professional manner to function effectively as a member of the healthcare team.

**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.

**Prerequisite:** C- or above in the following courses AHS 153 or AHS 140 or BIOL 2210 or BIOL 1130, or consent of instructor.

**Learning Outcomes**

1. Students will be able to position patients and identify radiographic anatomy and pathological conditions appropriately.
2. Students will demonstrate the ability to use independent judgment.
3. Students will analyze radiographic images for technical and positioning accuracy to make modifications as needed.

**RADT 156. 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 190. CT Equipment and Methodology****3 Credits (3)**

Skill development in the operation of computed tomographic equipment, focusing on routine protocols, image quality, and quality assurance and radiation protection. Restricted to CTOM (Certificate) and/or RADT Majors. Restricted to Community College Campuses only.

**Learning Outcomes**

1. Demonstrate acquisition of comprehensive technical knowledge by obtaining a seventy-five percent or greater on all quizzes and exam assessments (this is in alignment with the scoring expectations for the national registry exam).
2. Manipulate and choose the appropriate scan parameters and technical factors on CT equipment while applying the technical science supporting the decision.
3. Demonstrate appropriate use of post-processing options and provide diagnostic quality images.
4. Abide by radiation safety and dosimetry standards for patient care by demonstrating ALARA standards.
5. Select CT scan manipulations for optimal demonstration of anatomic region, according to protocol (i.e. delayed imaging, multiplanar reconstructions, filters, etc.) and with safe use of iodinated contrast mediums.
6. Recognize and reduce factors that may inhibit diagnostic image quality.

**RADT 191. Computed Tomography (CT) Imaging and Equipment****4 Credits (4)**

This course serves as an introduction to computed tomography (CT) for current radiologic technology students. Course will include information on clinical equipment and application of x-rays in CT, CT image formation, evaluation, and archiving, patient radiation safety and dose, and patient interactions and management for imaging. Restricted to CTOM (Certificate) and/or RADT Majors. Restricted to Dona Ana Campus only.

**Learning Outcomes**

1. Demonstrate acquisition of comprehensive technical knowledge by obtaining a seventy-five percent or greater on all quizzes and exam assessments (this is in alignment with the scoring expectations for the national registry exam).
2. Identify critical components of CT system equipment and what their purposes are in creating a CT image.
3. Identify CT parameters which allow for safely administering radiation dose; particularly to pediatric patients.
4. List and define the steps required to acquire a CT image, including the theory behind x-ray interaction/absorption/attenuation, detector capabilities, appropriate reconstruction options, and computer equipment.
5. Identify image display functions and radiology informatic options.
6. Identify the major technical components of image display in CT and common artifacts, including how to reduce artifacts.

**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.

**Prerequisite:** C- or above in RADT 103.

**Learning Outcomes**

1. Students will demonstrate the ability to produce diagnostic radiographic images safely.
2. Students will demonstrate the ability to use independent judgment.
3. Students will analyze radiographic images for technical and positioning accuracy to make modifications as needed.

**RADT 201. Clinical Practicum I****4 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 produce diagnostic radiographic images safely.
2. Students will be able to position patients and identify radiographic anatomy and pathological conditions appropriately.
3. Students will demonstrate effective communication skills.
4. Students will accurately document/record data in accordance with clinical site policies and procedures.
5. Students will demonstrate the ability to use independent judgement.
6. Students will analyze radiographic images for technical and positioning accuracy to make modifications as needed.
7. Students will conduct themselves professionally to function effectively as healthcare team members.
8. Students will identify various opportunities for professional growth within medical imaging sciences.

**RADT 202. Clinical Practicum II****6 Credits (32P)**



Continuation of RADT 201. Student will work under indirect supervision of registered personnel. Restricted to RADT majors. Restricted to Dona Ana Campus only.

**Prerequisite:** RADT 201.

**Learning Outcomes**

1. Students will demonstrate the ability to safely produce diagnostic radiographic images.
2. Students will be able to position patients and identify radiographic anatomy and pathological conditions appropriately.
3. Students will demonstrate effective communication skills.
4. Students will accurately document/record data in accordance with clinical site policies and procedures.
5. Students will demonstrate the ability to use independent judgement.
6. Students will analyze radiographic images for technical and positioning accuracy to make modifications as needed.
7. Students will conduct themselves in a professional manner to function effectively as a member of the healthcare team.
8. Students will identify various opportunities for professional growth within medical imaging sciences.

**RADT 203. Clinical Practicum III**

**3 Credits (3P)**

Continuation of RADT 202: Student will work under indirect supervision of registered personnel.

**Prerequisite:** C- or above in RADT 202.

**Learning Outcomes**

1. Students will demonstrate the ability to safely produce diagnostic radiographic images.
2. Students will be able to position patients and identify radiographic anatomy and pathological conditions appropriately.
3. Students will demonstrate effective communication skills.
4. Students will accurately document/record data in accordance with clinical site policies and procedures.
5. Students will demonstrate the ability to use independent judgement.
6. Students will analyze radiographic images for technical and positioning accuracy to make modifications as needed.
7. Students will conduct themselves in a professional manner to function effectively as a member of the healthcare team.
8. Students will identify various opportunities for professional growth within medical imaging sciences.

**RADT 204. Special Modalities Practicum IV**

**3 Credits (32P)**

Continuation of 203 to include special rotations in advanced imaging modalities.

**Corequisite:** C- or above in RADT 104.

**Learning Outcomes**

1. Students will demonstrate the ability to produce diagnostic radiographic images safely.
2. Students will be able to position patients and identify radiographic anatomy and pathological conditions appropriately.
3. Students will demonstrate effective communication skills.
4. Students will accurately document/record data in accordance with clinical site policies and procedures.
5. Students will demonstrate the ability to use independent judgement.
6. Students will analyze radiographic images for technical and positioning accuracy to make modifications as needed.

7. Students will conduct themselves in a professional manner to function effectively as a member of the healthcare team.
8. Students will identify various opportunities for professional growth within medical imaging sciences.
9. Students will analyze radiographic images for technical and positioning accuracy to make modifications as needed. 1
10. Students will conduct themselves in a professional manner to function effectively as a member of the healthcare team.

**RADT 205. Radiographic Image Critique**

**2 Credits (2)**

Review of radiographs produced in clinical settings to evaluate anatomy and technical issues. Restricted to RADT majors. Restricted to Community College Campuses only.

**Prerequisite:** RADT 201.

**Learning Outcomes**

1. Students will demonstrate the ability to safely produce diagnostic radiographic images.
2. Students will be able to appropriately position patients, identify radiographic anatomy and pathological conditions.
3. Students will demonstrate effective communication skills.
4. Students will accurately document/record data in accordance with clinical site policies and procedures.
5. Students will demonstrate the ability to use independent judgement.
6. Students will analyze radiographic images for technical and positioning accuracy to make modifications as needed.
7. Students will conduct themselves in a professional manner to function effectively as a member of the healthcare team.

**RADT 206. Applied Radiographic Procedures**

**3 Credits (3)**

Capstone course : Advanced course which integrates the principles and techniques of radiologic technology. Restricted to RADT Majors.

**Prerequisite:** RADT 202.

**Learning Outcomes**

1. Students will demonstrate the ability to produce diagnostic radiographic images safely.
2. Students will be able to position patients and identify radiographic anatomy and pathological conditions appropriately.
3. Students will demonstrate effective communication skills.
4. Students will accurately document/record data in accordance with clinical site policies and procedures.
5. Students will demonstrate the ability to use independent judgement.
6. Students will analyze radiographic images for technical and positioning accuracy to make modifications as needed.
7. Students will conduct themselves in a professional manner to function effectively as a member of the healthcare team.

**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. Restricted to CTOM (Certificate) and/or RADT Majors. Restricted to Community College Campuses only.

**Learning Outcomes**

1. Recognize course format and expectations by achieving at least a ninety-percent each on the Syllabus Quiz, Netiquette and Introductory Discussions.

- Identify and label the anatomy associated with the topical outline in diagnostic CT images.
- Critique CT images for the presence or absence of anatomy and pathology in deciding whether the image is appropriately positioned and diagnostic for radiologist assessment.
- Locate anatomical systems and possible pathology based on background knowledge of typical anatomical locations and identify normal course of system function for appropriate positioning, patient instructions, and CT imaging.
- Apply knowledge in testing environment mimicking that which is expected for the ARRT Registry.

### **RADT 208. Practicum I (Computed Tomography)**

#### **2 Credits (8P)**

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. Restricted to Restricted to CTOM (Certificate) and/or RADT Majors. Restricted to Community College Campuses only.

#### **Learning Outcomes**

- Navigate this Canvas course and demonstrate understanding of clinic and course expectations by attending live Orientation and completing the Syllabus Quiz with at least a ninety percent. (CO-one)
- Communicate effectively with patients to successfully perform CT procedures. (CO-two): Examples of communication include: gathering patient history and any known allergies, screening for pre-existing conditions such as diabetes, gaining an understanding the location of the patient's pain (if applicable) and what may be the cause of it (i.e. trauma, strain, family history, etc.), and ensuring the patient's exam is warranted and is not a duplicate).
- Properly prepare patients for the type of exam they are scheduled for. (CO-three)
- Demonstrate competence in intravenous procedures. (CO-four). Competence includes: checking blood for kidney function and understanding normal vs. out-of-range lab values, safely and cleanly starting an IV, choosing the correct type and amount of contrast media, choosing the correct method of injection (either by hand or at a controlled pace via a bolus injector), monitoring the patient during and after the IV injection, and responding to any reactions.
- Recognize iodinated contrast composition, risks, and proper use (including bolus timing) according to type of CT procedure. (CO-five)
- Follow radiation safety and dosimetry standards for patient care. (CO-six)
- Select appropriate CT protocols for respective patient exams. (CO-seven)
- Exhibit competence in CT physics and instrumentation through safe CT scanner operation. (CO-eight)
- Perform complete, diagnostic quality CT imaging procedures. (CO-nine)

### **RADT 209. Practicum II (Computed Tomography)**

#### **2 Credits (8P)**

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). Restricted to Restricted to CTOM (Certificate) and/or RADT Majors. Restricted to Community College Campuses only.

#### **Learning Outcomes**

- To qualify as a complete, diagnostic quality CT imaging procedure the candidate must demonstrate appropriate: Evaluation of

requisition and/or medical record; Preparation of examination room; Identification of patient; Patient assessment and education concerning the procedure; Documentation of patient history including allergies; Patient position; Protocol selection; Parameter selection; Image display, filming and archiving; Documentation of procedure, treatment and patient data in appropriate record; Patient discharge with post-procedure instructions; Standard precautions /radiation protection; Preparation and/or administration of contrast media; Initiate scan and evaluate the resulting images for: Image quality (e.g., motion, artifacts, noise); Optimal demonstration of anatomic region (e.g, delayed imaging, reconstruction spacing, algorithm, slice thickness); Exam completeness

### **RADT 210. Practicum III (Computed Tomography)**

#### **2 Credits (8P)**

Continuation of RADT 209: Advanced 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. Upon completion, students will be able to assume most of the duties of an experienced imaging professional in Computed Tomography.

**Prerequisite:** RADT 209.

#### **Learning Outcomes**

- To qualify as a complete, diagnostic quality CT imaging procedure the candidate must demonstrate appropriate: Evaluation of requisition and/or medical record; Preparation of examination room; Identification of patient; Patient assessment and education concerning the procedure; Documentation of patient history including allergies; Patient position; Protocol selection; Parameter selection; Image display, filming and archiving; Documentation of procedure, treatment and patient data in appropriate record; Patient discharge with post-procedure instructions; Standard precautions /radiation protection; Preparation and/or administration of contrast media; Initiate scan and evaluate the resulting images for: Image quality (e.g., motion, artifacts, noise); Optimal demonstration of anatomic region (e.g, delayed imaging, reconstruction spacing, algorithm, slice thickness); Exam completeness

## **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. Must be accepted into the Respiratory Therapy Program.

#### **Learning Outcomes**

- Compose a patient assessment.
- Discuss and demonstrate confidentiality expectations of HIPPA.
- Compose a patient SOAP/Patient Assessment Document.
- Demonstrate and perform cardiopulmonary diagnostic procedures.

### **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. Acceptance to Respiratory Therapy Program. Restricted to: Community Colleges only. Restricted RESP majors.

**Learning Outcomes**

1. Maintain Patient confidentiality/privacy as defined by HIPAA.
2. Use critical thinking, problem solving and ethical decision-making in the assessment, diagnosis, planning, evaluation, and implementation of respiratory procedures.
3. Recognize emergency situations and respond appropriately.
4. Compose a patient assessment Compose a patient SOAP/Patient Assessment document.
5. Demonstrate and perform cardiopulmonary diagnostic procedures.
6. Respect values, and preferences of patients while administering respiratory therapy.

**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. Acceptance to Respiratory Therapy Program. Restricted to: Community Colleges only. Respiratory Therapy Majors only. May be repeated up to 3 credits.

**Learning Outcomes**

1. The student will be able to recognize, identify, and use formulas and concepts related to respiratory care pharmacology.
2. Use critical thinking, problem-solving and ethical decision-making in the assessment, diagnosis, planning, evaluation, and implementation of respiratory procedures.

**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 the Respiratory Therapy program. Restricted to Community Colleges campuses only.

**Prerequisite:** C or Better in RESP 110 & RESP110L.

**Corequisite:** RESP 120 L.

**Learning Outcomes**

1. Demonstrate and perform cardiopulmonary diagnostic procedures.
2. Determine appropriate interventions in a critical medical situation.
3. Demonstrate how to setup and maintain a mechanical ventilator.
4. Formulate appropriate cardiopulmonary treatment plans.

**RESP 120 L. Respiratory Therapy II Lab****2 Credits (6P)**

Continuation of lab practices and procedures learned in RESP 120, Respiratory Care II, using equipment and simulations. Requires a C or better to remain in the Respiratory Therapy program. Students must be admitted to the Respiratory Therapy program to enroll in this course. May be repeated up to 2 credits.

**Prerequisite:** C or Better in the following Courses: RESP 110, RESP 110L and RESP 115.

**Learning Outcomes**

1. Recognize emergency situations and respond appropriately.
2. Compose a patient assessment Compose a patient SOAP/Patient Assessment document.
3. Demonstrate and perform cardiopulmonary diagnostic procedures.
4. Demonstrate how to set up and maintain a mechanical ventilator.
5. Demonstrate appropriate patient/physician interactions in the clinical setting.

**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 the Respiratory Therapy program to enroll in this course. May be repeated up to 3 credits.

**Prerequisite:** C or Better in the following courses: RESP 110 & RESP 110L.

**Learning Outcomes**

1. Maintain Patient confidentiality/privacy as defined by HIPAA.
2. Use critical thinking, problem solving and ethical decision-making in the assessment, diagnosis, planning, evaluation, and implementation of respiratory procedures.
3. Recognize emergency situations and respond appropriately.
4. Compose a patient assessment Compose a patient SOAP/Patient Assessment document.
5. Demonstrate and perform cardiopulmonary diagnostic procedures.
6. Demonstrate how to set up and maintain a mechanical ventilator.
7. Demonstrate appropriate patient/physician interactions in the clinical setting.

**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 the RESP program to enroll in this course. May be repeated up to 2 credits. Restricted to: Community Colleges only. Restricted to RESP majors.

**Prerequisite:** C or better in the following courses: RESP 120, RESP 120L, and RESP 124.

**Corequisite:** RESP 210L.

**Learning Outcomes**

1. Demonstrate and perform cardiopulmonary diagnostic procedures.
2. Formulate appropriate cardiopulmonary treatment plans.
3. Determine appropriate interventions in a critical medical situation.
4. Demonstrate how to setup and maintain a mechanical ventilator.

**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. May be repeated up to 2 credits.

**Prerequisite:** C or better in the following courses: RESP 120, RESP 120 L, and RESP 124.

**Learning Outcomes**

1. Demonstrate and perform cardiopulmonary diagnostics procedures during mechanical ventilation.
2. Demonstrate appropriate patient/physician interactions needed in the clinical setting.
3. Demonstrate how to set up, maintain, and wean a patient from a mechanical ventilator.
4. Document ventilator parameters, alarm settings, and patient assessment.
5. Compose a patient assessment on a patient receiving mechanical ventilation.

6. Formulate appropriate cardiopulmonary treatment plans for mechanical ventilation.
7. Determine appropriate interventions in a critical medical situation.

### **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. May be repeated up to 3 credits. Restricted to: Community Colleges only. Restricted to RESP majors.

**Prerequisite:** C or better in the following courses: RESP 120, RESP 120 L, and RESP 124.

#### **Learning Outcomes**

1. Maintain Patient confidentiality/privacy as defined by HIPAA.
2. Use critical thinking, problem solving and ethical decision-making in the assessment, diagnosis, planning, evaluation, and implementation of respiratory procedures.
3. Recognize emergency situations and respond appropriately.
4. Compose a patient assessment Compose a patient SOAP/Patient Assessment document.
5. Demonstrate and perform cardiopulmonary diagnostic procedures.
6. Demonstrate how to set up and maintain a mechanical ventilator.
7. Demonstrate appropriate patient/physician interactions in the clinical setting.

### **RESP 230. Respiratory Therapy V**

#### **3 Credits (3)**

This class is designed to give second-year Respiratory Therapy students insight into the organization and structure of the Intensive Care Unit; included will be discussion of the roles, relationships and stresses upon the ICU health-care team. Major course emphasis will center on Hemodynamic Monitoring as well as assessment and treatment of the patient with specific pathologic conditions commonly seen in the ICU. Emphasis on special modalities. Requires a C or better to remain in program. Restricted to: Community Colleges only. Restricted to DA-RESP-AA majors. May be repeated up to 3 credits.

**Prerequisite:** C or Better in RESP 210, 210L & 234 Clinical.

#### **Learning Outcomes**

1. Demonstrate and perform cardiopulmonary diagnostic procedures.
2. Determine appropriate interventions in a critical medical situation.
3. Demonstrate how to setup and maintain a mechanical ventilator.
4. Formulate appropriate cardiopulmonary treatment plans.

### **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 Respiratory Therapy majors. May be repeated up to 2 credits.

**Prerequisite:** C or better in the Following: RESP 210L & RESP 210, RESP 234 Clinical.

#### **Learning Outcomes**

1. Demonstrate and perform cardiopulmonary diagnostic procedures.
2. Formulate appropriate cardiopulmonary treatment plans.
3. Determine appropriate interventions in a critical medical situation.
4. Demonstrate how to setup and maintain a mechanical ventilator.

### **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. May be repeated up to 2 credits.

**Prerequisite:** C or better in the following courses: RESP 230 RESP 230L.

#### **Learning Outcomes**

1. Communicate effectively Identify ethical behavior.
2. Apply numerical information appropriately.
3. Problem solve effectively Demonstrate appropriate technical skills.
4. Discuss and demonstrate confidentiality expectations of HIPPA.
5. Demonstrate and perform cardiopulmonary diagnostic procedures.

### **RESP 234. Respiratory Therapy V Clinical**

#### **3 Credits (3)**

Continuation of RESP 214. Emphasis on special modalities. Restricted to: Community Colleges only. May be repeated up to 3 credits.

**Prerequisite:** C or better in the following courses: RESP 210 and RESP 210L.

#### **Learning Outcomes**

1. Demonstrate and perform cardiopulmonary diagnostics procedures during mechanical ventilation.
2. Demonstrate appropriate patient/physician interactions needed in the clinical setting.
3. Demonstrate how to set up, maintain, and wean a patient from a mechanical ventilator.
4. Compose a patient assessment on a patient receiving mechanical ventilation.
5. Formulate appropriate cardiopulmonary treatment plans for mechanical ventilation.
6. Determine appropriate interventions in a critical medical situation.
7. Document ventilator parameters, alarm settings, and patent assessment.

### **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. May be repeated up to 3 credits.

**Prerequisite:** C or better in the following courses: RESP 230, RESP 230L, RESP 233 and RESP 234.

**Corequisite:** RESP 240L.

#### **Learning Outcomes**

1. Demonstrate and perform cardiopulmonary diagnostic procedures.
2. Formulate appropriate cardiopulmonary treatment plans.
3. Determine appropriate interventions in a critical medical situation.
4. Demonstrate how to setup and maintain a mechanical ventilator.

### **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. May be repeated up to 2 credits.

**Prerequisite:** C or better in the following courses: RESP 230, RESP 230L, RESP 233 and RESP 234.

**Corequisite:** RESP 240.

#### **Learning Outcomes**

1. Demonstrate and perform cardiopulmonary diagnostic procedures.
2. Formulate appropriate cardiopulmonary treatment plans.
3. Determine appropriate interventions in a critical medical situation.
4. Demonstrate how to setup and maintain a mechanical ventilator.

**RESP 242. Pediatric Advanced Life Support (PALS)****1 Credit (1)**

Etiology, diagnosis, clinical manifestations, and management of cardiopulmonary disorders related to respiratory care. May be repeated up to 1 credit.

**Prerequisite:** C or Better in RESP 230 & RESP 230L.

**Corequisite:** RESP 230.

**Learning Outcomes**

1. Use critical thinking, problem solving and ethical decision-making in the assessment, diagnosis, planning, evaluation, and implementation of respiratory procedures.
2. Recognize emergency situations and respond appropriately.
3. Compose a patient assessment.

**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. May be repeated up to 1 credit.

**Prerequisite:** C or better in the following courses: RESP 230, RESP 230L.

**Learning Outcomes**

1. Use critical thinking, problem solving and ethical decision-making in the assessment, diagnosis, planning, evaluation, and implementation of respiratory procedures.
2. Recognize emergency situations and respond appropriately.
3. Compose a patient assessment Compose a patient SOAP/Patient Assessment document.
4. Demonstrate and perform cardiopulmonary diagnostic procedures.

**RESP 244. Respiratory Therapy VI Clinical****3 Credits (9P)**

Advanced 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. Campus restriction updated to reflect description of community colleges only. May be repeated up to 3 credits.

**Prerequisite:** C or better in the following courses: RESP 230, RESP 230L, RESP 233 and RESP 234.

**Learning Outcomes**

1. Maintain Patient confidentiality/privacy as defined by HIPAA.
2. Use critical thinking, problem solving and ethical decision-making in the assessment, diagnosis, planning, evaluation, and implementation of respiratory procedures.
3. Recognize emergency situations and respond appropriately.
4. Compose a patient assessment Compose a patient SOAP/Patient Assessment document.
5. Demonstrate and perform cardiopulmonary diagnostic procedures.
6. Demonstrate how to set up and maintain a mechanical ventilator.
7. Demonstrate appropriate patient/physician interactions in the clinical setting.

**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. 1
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. May be repeated up to 3 credits.

**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. May be repeated up to 3 credits.

**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. May be repeated up to 3 credits.

**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.
2. Design and conduct an experiment using Radio Jove.
3. Apply astrobiological knowledge to solve human problems.
4. 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.
2. Obtain, interpret and analyze numerical information through the use of appropriate tables, diagrams, and algorithms.
3. Develop competency in conveying astrobiological knowledge through laboratory reports and/or written assignments following proper APA documentation style.
4. 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. May be repeated up to 3 credits.

##### **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).

## **SOIL-SOIL (SOIL)**

#### **SOIL 2110. Introduction to Soil Science**

##### **3 Credits (3)**

An overview of fundamental concepts in soil science and soils as a natural resource. Students will be introduced to the physical, chemical, and biological properties as it relates to soil management in environmental science, conservation, and agronomy. May be repeated up to 3 credits.

**Prerequisite:** (CHEM 1120G and MATH 1215 or higher) or CHEM 1215G.

##### **Learning Outcomes**

1. Understand and use the technical terminology associated with the use and management of soils.
2. Understand the classification of soils and the processes leading to their formation.
3. Identify key physical, chemical, and biological properties of soils.
4. Explain the impact of land use and management decisions as it relates to soil degradation and environmental problems.

#### **SOIL 2110L. Introduction to Soil Science Laboratory**

##### **1 Credit (1)**

Morphological, chemical, physical and biological properties of soil in the laboratory and field.

**Corequisite(s):** SOIL 2110.

##### **Learning Outcomes**

1. Learn techniques for sampling and characterizing soils in the region.
2. Understand how soils are formed and the processes that occur within the soil profile.
3. Gain fundamental knowledge on soil physical, chemical, and biological properties and how each can influence the overall function of a particular soil.

4. Develop critical thinking and analytical skills within laboratory and field settings.
5. Encourage collaboration, inclusiveness and critical thinking.

#### **SOIL 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. May be repeated up to 9 credits. Consent of Instructor required.

##### **Learning Outcomes**

1. Varies

## **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. May be repeated up to 3 credits.

##### **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.

## **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 that describes a past/present/future (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. 1
10. Students can usually understand a few details of what they overhear in conversations, even when something unexpected is expressed. 1
11. Students can sometimes follow what they hear about events and experiences in various time frames. 1
12. Students can easily understand the main idea of texts related to everyday life, personal interests, and studies. 1
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. May be repeated up to 3 credits.

**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.
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.

## SPED-SPECIAL EDUCATION (SPED)

**SPED 2996. Topics**  
**3 Credits (3)**

Offered under various subtitles that indicate the subject matter to be covered. May be repeated up to 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. May be repeated up to 3 credits.

**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.

**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.

**SPMD 1120. 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 1190. Clinical Practicum I**

##### **2 Credits (2)**

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.

##### **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.

#### **SPMD 1195. Clinical Practicum II**

##### **3 Credits (3)**

Athletic training related content and psycho-motor skills are introduced, enhanced, and assessed in the classroom and clinical rotations.

Emphasis is on competencies and proficiencies previously instructed in didactic courses while providing increased depth of understanding and clinical practice. Must maintain a 3.0 GPA. May be repeated up to 3 credits.

##### **Learning Outcomes**

1. Demonstrate knowledge and skill in emergency situation prevention, recognition, and management.
2. Demonstrate proficiency in basic skills of musculoskeletal injury recognition and management.
3. Demonstrate competency in basic pre-participation exam skills, including but not limited to taking vital signs.
4. Demonstrate competency in wound care and first aid.

#### **SPMD 1310. Introduction to Kinesiology**

##### **3 Credits (3)**

An introduction to the field of Kinesiology which will explore areas such as exercise physiology, sport and exercise psychology, motor behavior, biomechanics, strength and conditioning, exercise prescription, as well as professional and graduate programs, and allied health and applied careers opportunities.

##### **Learning Outcomes**

#### **SPMD 1350. Social Foundations of Physical Activity**

##### **3 Credits (3)**

Historical and cultural foundations and vocational, scientific, and educational data on careers in health education, physical education, and recreation.

##### **Learning Outcomes**

1. Improve students' knowledge of foundations of physical education. (Research) (Standard 4 j, k, l, m, o, p)
2. Improve students' abilities to analyze current physical activity issues based on historical, philosophical, sociological, and psychological perspectives. (Research) (Standard 4 l, m, e, g)
3. Improve students' knowledge of and ability to critically analyze how gender, race, social class, sexual orientation, and ability issues affect physical education and performance programs. (Research, Diversity) (Standard 4j, k, l, m, o; Standard 2 d, g, j, f, k)

4. Improve students' knowledge of forces influencing the development of physical education programs. In particular, attitudes, values, and beliefs about gender, race, social class, sexual orientation, and ability, etc. (Diversity, Practitioners, Reflection, Pedagogy) (Standard 1 a, b, h, l; Standard 4 j, k, l, m, o; Standard 2 a, d, g, j, f, k)
5. Improve students' knowledge of strategies for becoming an advocate in the school and/or community to promote a variety of physical activity opportunities. (Practitioners) (Standard 2 m, n; Standard 3 n, o, p, q, r; Standard 10 d, j, p)
6. Improve students' knowledge of current educational issues and trends. In particular, socio-cultural issues that affect educational, fitness, and sports settings. (Diversity, Research) (Standard 4 j, k, l, m, o, p Standard 9 a, c, e, f, m, n)
7. Improve students' knowledge of how students' learning is influenced by individual experiences, talents, and prior learning, including language and family/community values and conditions. (Diversity, Research) (Standard 1 b, h, l; Standard 2 d, g, j, k, m, n, o; Standard 3 l)
8. Improve students' knowledge of the impact of international changes on the content of physical education, fitness, and sports programs. (Research) (Standard 4 j, k, l, m, o, p)
9. Improve students' ability to critically analyze how gender, race, sexuality and social class issues affect how we view the body, and how these views can affect students' health and participation in physical education, fitness, and sports programs. (Diversity, Reflection) (Standard 2 d, g, j, f, k, m, o) 1
10. Improve students' ability to become critically aware of how their feelings, beliefs, and values in relation to gender, race, social class, sexual orientation, and ability issues will affect their abilities to work as professionals in the fields of physical education, sport, or fitness. (Diversity, Reflection) (Standard 2d, g, j, f, k, m, o Standard 9 e, d, g, l, m) 1
11. Improve students' knowledge of and ability to critically analyze cultural stereotypes of diverse populations of people. (Diversity) (Standard 2 d, g, j, f, k, m, o) 1
12. Improve students' knowledge of how cultural stereotypes influence the development of physical education, fitness and sport programs. (Research, Diversity) (Standard 2 d, g, j, f, k, m, o; Standard 4 j, k, m, o, p, q Standard 8 p) 1
13. Improve students' knowledge of how groups influence individuals, and how individuals influence groups in a democratic society. (Diversity) (Standard 2 d, g, j, f, k, m, o; Standard 4 m, p;) 1
14. Improve students' abilities to communicate in ways that demonstrate sensitivity to all learners. (Diversity, Effectiveness) (Standard 1 d, h, l; Standard 2 d, g, j, f, k, m, o) 1
15. Students will demonstrate through writing the ability to apply the issues discussed in class to their specific fields in ways that benefit society. (Evaluation) (Standard 9 e, g, l, m) 1
16. Students will improve their ability to take the content from readings and present it in thought provoking ways to their classmates. (Research, Evaluation, Reflection) (Standard 9 e, g, l, m; Standard 10 a, d, h, n) 1
17. Writing proficiency is required for a passing grade in this course. (Standard 4 l) 1
18. Improve students' abilities to use computers and other technologies to communicate, network, and/or foster inquiry. (Standard 10 g) 1
19. Consult professional literature, colleagues, and other resources to develop as a professional.(Standard 10 e, f, h, l, n, r)

**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.

**Prerequisite:** 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.
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 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 2225. Anatomy and Physiology II****3 Credits (3)**

This course is the second of two that serve as an introduction to human anatomy and physiology for any student interested in allied health and/or kinesiology. 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, urinary, digestive, integumentary, renal, central nervous, 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.

**Prerequisite:** SPMD 2210 or BIOL 2210.

**Learning Outcomes**

1. Identify and describe the major anatomical features of the endocrine, lymphatic, digestive, integumentary, renal, urinary, and reproductive systems.
2. Analyze the physiological roles of the endocrine, lymphatic, digestive, urinary, central nervous, immune, 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.

**SPMD 2225L. Anatomy and Physiology II Lab****1 Credit (1)**

This is the second in a series of two laboratory courses designed to introduce laboratory practices and techniques for human anatomy and physiology, from the basic cell structure through the organ system level# specifically the endocrine, digestive, lymphatic, respiratory, urinary, and reproductive systems.

**Prerequisites:** SPMD 2210; SPMD 2210L; or BIOL 2210; BIOL 2210L.

**Learning Outcomes**

1. Apply the scientific method correctly.
2. Collect, analyze, and interpret scientific data.
3. Use laboratory equipment correctly and safely.
4. Identify the anatomical components of human tissues, organs, and organ systems using models, diagrams, illustrations, or cadaver specimens.
5. Describe the functional characteristics of human tissues, organs, and organ systems using models, diagrams, illustrations, or cadaver specimens.
6. Analyze the physiological processes of the endocrine, lymphatic, respiratory, digestive, urinary, and reproductive systems.
7. Analyze the physiological processes of fluid and electrolyte balance and acid base balance in the human body.
8. Analyze heredity and genetic control.

**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.
2. 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.
3. Identify current trends and/or health patterns within society in regards to scientific findings, declination in health habits, and increases in health ailments.
4. Compare various nutritional concepts, specifically proper dietary habits and their impact on weight management aspects.
5. 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.

**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 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. Restricted to Community Colleges only. Taught with ET 143 and DRFT 143.

**Prerequisite:** DRFT 109.

**Learning Outcomes**

1. Use appropriate drafting/technical terminology.
2. Identify of the different types of Civil Engineering work drawing plan sets.

3. Understanding and the use of the terminologies used in the industry.
4. Use AutoCAD Civil 3D.
5. Enter appropriate data into AutoCAD software in order to retrieve necessary outcomes.
6. Plot/Print different types of civil engineering working plans.
7. Read, interpret and understand engineering drawings.
8. Define and understand the different types of engineering drawings.

**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.

**Prerequisite:** A grade of C- or better in MATH 1250G or higher.

**Learning Outcomes**

1. Perform basic distance and angular measurements.
2. Evaluate the quality of collected measurements.
3. Utilize a measuring tape.
4. Determine a plumb line.
5. Set up a level line.
6. Set up a tripod and total station.
7. Utilize a plumb rod.
8. Understand the role of surveying in civil engineering and construction-related fields.
9. Understand new technologies is surveying.

**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.

**Learning Outcomes**

1. Understand the basic principles of photogrammetry.
2. Perform photo measurements and computation.
3. Be able to design aerial surveying projects.
4. Define the basic principles of analytical photogrammetry.
5. Explain the different steps in aerial triangulation.

**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; liability, ethical and professional principles in boundary surveying; NM professional practice act; NM Minimum Standards, contemporary issues in boundary determination.

**Prerequisite:** C- or better in SUR 222.

**Learning Outcomes**

1. Demonstrate an understanding of surveying boundary laws.
2. Describe procedures for locating real property boundaries.
3. Read, interpret, and write legal descriptions of real property.
4. Perform legal research of case and statutory law.
5. Communicate research findings through written and oral presentations.

# 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 of 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.

#### Learning Outcomes

1. Analyze cost comparisons for different types of energy applications to assess their relative value.
2. Apply energy consumption analysis techniques to accurately evaluate energy usage.
3. Identify safety hazards and demonstrate compliance with relevant safety regulations.
4. Collaborate effectively as a team.
5. Apply course-specific calculations accurately to solve problems and make informed decisions.

### 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.

#### Learning Outcomes

1. Express technical information through oral communication.
2. Explain technical information through written communication.
3. Interpret information and instructions.
4. Work effectively as a team.
5. Demonstrate an understanding of sustainable and alternative building practices (i.e., LEED/Green).
6. Demonstrate how related industry theories apply to real world settings.
7. Evaluate mechanical processes found in building trades.
8. Locate data and information utilizing various sources.
9. Interpret information and instructions. 1
10. Determine the appropriate ethical action that should occur in a given circumstance. 1
11. Differentiate between situational and the other various theories of ethics.

### TCEN 106. Building Analyst II

#### 3 Credits (2+2P)

Designed to prepare the student for the BPI Building Analyst Certification. This course will walk the student through the hands-on process of conducting visual building inspections, diagnostic testing, identifying improvement opportunities, documenting a home's performance and preparing a scope of work. Crosslisted with: OETS106.

**Prerequisite(s)/Corequisite(s):** TCEN 105 or OETS 105. Restricted to: Community Colleges only.

#### Learning Outcomes

1. Describe sustainable and alternative building practices (i.e., LEED/Green).
2. Formulate how current changes can create future issues within a structure.
3. Assess environmental problems arising from conventional building practices.
4. Evaluate mechanical processes found in building trades.
5. Work effectively as a team.
6. Demonstrate an understanding of sustainable and alternative building practices (i.e.,LEED/Green).
7. Present technical information through oral communication.
8. Determine the appropriate ethical action that should occur in a given circumstance.
9. Identify appropriate governing bodies and associated regulations.

### 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. Restricted to: Community Colleges only. May be repeated up to 4 credits.

**Prerequisite/Corequisite:** TCEN 101.

#### Learning Outcomes

1. Write a detailed analysis using a 6-step problem solving approach to an equipment or process problem
2. Categorize and document system malfunctions, which will be discussed during the pass-down period in a production environment
3. Organize relevant training material to be discussed during teamwork training sessions
4. Identify safety hazards associated with electro-mechanical industrial production systems
5. Use a systematic approach to troubleshoot, identify, and perform corrective maintenance procedures in a system
6. Identify the subsystems of an industrial system and their function
7. Demonstrate the startup, operation, and power down programming sequences for an automated system
8. Apply automated troubleshooting programs to locate / identify fault in a production system
9. Evaluate real time statistical process control data (SPC) to determine (+ -) control limit corrections in a production environment 1
10. Identify personal areas in which student may be able to strengthen student's professional skills 1
11. Assess personal "development" paths, which will ensure a constant advancement through evolving technology careers 1
12. Demonstrate required skills for changing or creating and evaluating real time statistical process control (SPC) data associated with an industrial production process/program

### 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. Campus restriction updated to reflect description of community colleges only.

**Prerequisite(s):** Grade of C- or better in TCEN 106 or OETS 106.

**Learning Outcomes**

1. Apply oral communication skills to effectively present technical information.
2. Apply written communication skills to effectively present technical information.

3. Demonstrate the correct identification and safe use of hand tools and/or power tools for a specific application.
4. Collaborate effectively as a team.
5. Employ various sources to locate data and information.
6. Analyze and interpret information and instructions.
7. Differentiate between situational ethics and other various theories of ethics.
8. Identify relevant governing bodies and associated regulations.
9. Describe sustainable and alternative building practices (e.g., LEED/ Green). 1
10. Apply related industry theories to real-world settings. 1
11. Evaluate mechanical processes in building trades. 1
12. Assess environmental problems resulting from conventional building practices.

**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 College campuses only. May be repeated up to 4 credits.

**Prerequisite:** TCEN 101 and ELT 105.

**Learning Outcomes**

1. Identify all code sections relevant to the different types of Alternative energy systems.
2. Locate problems in alternative energy sources and provide solutions to correct them.
3. Student will have a basic understanding of different types of renewable energy and how to apply the NEC to each type of renewable energy source.
4. Explain what types of renewable energies work best for different geographical locations.
5. Students will also gain hands on experience working with solar photovoltaics, wind turbines and solar thermal panels.
6. Effectively present technical information through written communication
7. Accurately perform course specific calculations
8. Work effectively as a team
9. Locate data and information utilizing the NEC and other various sources 1
10. Interpret information and instructions 1
11. Identify appropriate governing bodies and associated regulations 1
12. Assess cost comparisons for different types of energy applications 1
13. Accurately perform energy production analysis

**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** **2 Credits (2+1P)**

Focuses on all sections of the National Electrical Code and local code requirements applicable to photo voltaic electrical installation. A partial list of areas covered is chapters one through four and section 690, "Solar Photovoltaic Systems" of the National Electrical Code.

**Prerequisite:** 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).
3. 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 only.

#### **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

**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 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, playwrighting, 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. 1
10. Develop personal and social responsibility via group work, research and self-reflection. 1
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 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 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 production of a play.
2. Demonstrate and apply how to safely and competently use hand tools, power tools, electrical, and electronic stage equipment.
3. Analyze the technical aspects of a play in performance.
4. Read and construct scenery from ground plans, elevations, and drawings.
5. 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.

**Learning Outcomes**

1. Apply concepts of alignment, relaxation, breath support, resonance, projection, and articulation for your personal and professional benefit.
2. Refine vocal 'problem solving' which will carry into your personal and professional life.
3. Apply vocal concepts to a variety of text in order to understand and appreciate your voice and its capabilities, both intellectually and sensorially.
4. Apply the vocal/speech tools consciously and behavior-ally, as an aid in the search for musicality of the voice in conjunction with truth and believability.

**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)**

Advanced water and wastewater mathematics. Flow measurement. Systems head and pump curves.

**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. Restricted to Community Colleges campuses only.

**Prerequisite:** WATR 120, WATR 130, WATR 140, WATR 160.

**Learning Outcomes**

1. Identify appropriate process changes for different wastewater processes.

2. Identify appropriate process changes for different water processes.
3. Identify corrective actions for equipment failure.
4. Identify analytical data required to complete process control calculations.
5. Accurately complete water process control calculations.
6. Accurately complete wastewater process control calculations.
7. Evaluate operational problems.
8. Identify the sampling points for data collection.

**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.

**Prerequisite/Corequisite:** WATR 285. Restricted to Community Colleges campuses only.

**Learning Outcomes**

1. Evaluate invalid labs analysis to determine corrective actions.
2. Identify information/data required to complete calculations.
3. Accurately perform calculations.
4. Demonstrate correct/accurate laboratory technique.
5. Demonstrate correct/accurate laboratory technique.
6. Perform operational/laboratory duties safely.

**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 1110. Introduction to Welding Fundamentals****3 Credits (2)**

This course focuses on the fundamental techniques employed in the welding field. It is a laboratory approach to understanding and building skills in welding related areas including shop safety, hand and portable power tool usage, and welding.

**Learning Outcomes**

1. Demonstrate knowledge of basic welding processes.
2. Demonstrate shop safety including the proper use of welding hand and machine tools.

- Practice and demonstrate SMAW with various electrodes in all positions.

**WELD 1120. Print Reading for Welders****3 Credits (3)**

Provides students with the knowledge to read and interpret prints and welding symbols and transfer this knowledge to the workplace with layout tools and measuring instruments.

**Learning Outcomes**

- Identify, read and follow AWS welding symbols.
- Demonstrate the ability to interpret orthographic and isometric drawings.
- Demonstrate the ability to read/interpret pipe welding drawing and schematics.
- Demonstrate proficiency in the mathematics utilized in welding and fabrication.

**WELD 1130. SMAW (Shielded Metal Arc Welding) I****6 Credits (3+6P)**

This course will cover introductory theory and practical applications of structural plate welding, welding safety, handheld torch cutting operations and equipment set up. The development of student skills using the Shielded Metal Arc Welding process in all positions will be stressed. The standards of this course are set by the American Welding Society and utilized in both classroom study and laboratory work.

**Learning Outcomes**

- Perform welds on various joints in all positions.
- Perform welds on various joints in all positions.
- Demonstrate proficiency in identification of electrode classification and proper storage.
- Identify SMAW power sources and their characteristics.
- Maintain, use, and safely operate SMAW equipment.

**WELD 1140. GMAW-Gas Metal Arc Welding I****3 Credits (2)**

Introduces Gas Metal Arc Welding (GMAW) short circuit welding safety, machine set up and shutdown procedures. Topics include personal protective equipment (PPE), GMAW uses, advantages and disadvantages, constant voltage (CV) power source, polarity, electrode types, shielding gasses, and weld discontinuities and defects identification and corrective practices. Lab exercises will include various joints in all positions.

**Learning Outcomes**

- Demonstrate the ability to safely operate the Gas Metal Arc Welding equipment.
- Demonstrate Gas Metal Arc Welding theory and application.
- Demonstrate the ability to perform Gas Metal Arc Welding on various joints in all positions.
- Demonstrate the ability to fabricate assigned projects while applying proper tolerance to finished projects.

**WELD 1155. GTAW-Gas Tungsten Arc Welding I****3 Credits (2+2P)**

A basic course designed to provide the student with the ability to setup, maintain and operate Gas Tungsten Arc Welding (GTAW) equipment safely. Develop skills to weld structural joints to bend tests standards utilizing various metals. Weld quality will be measured in accordance with American Welding Society standards.

**Learning Outcomes**

- Demonstrate the ability set up GTAW equipment for use, inspect equipment prior to use, perform minor maintenance, and identify potential hazards.
- Demonstrate the ability to perform GTAW on various base metals in all positions.
- Demonstrate the understanding of basic metallurgical differences in various base and filler metals.
- Demonstrate an understanding of welding currents and power sources.

**WELD 1171. Layout and Fabrication****3 Credits (1+4P)**

This class is an introduction to general layout and fabrication techniques as related to structural welding. Emphasis will be on construction of small projects to tolerances using prints. A variety of welding processes will be used in all positions.

**Prerequisites:** WELD 1130, WELD 1120, WELD 1140, and OETS 104 and OETS 118.

**Learning Outcomes**

- Demonstrate the ability to fabricate projects.
- Use shop drawing and/or prints to create projects and develop the bill of materials for the project.
- Demonstrate ability to properly follow WPS (Welding Procedure Specification) during fabrication.

**WELD 1191. Welded Art****3 Credits (1+4P)**

Students explore the possibilities of welded art.

**Prerequisite:** WELD 1110.

**Learning Outcomes**

- Demonstrate knowledge of the different forms of welded art.

**WELD 1210. Flux Cored Arc Welding****3 Credits (2+2P)**

Principles of flux cored arc welding (FCAW) terminology, safety procedures, and equipment set-up. Students will practice welding structural joints in all positions using the FCAW process.

**Learning Outcomes**

- Demonstrate the set up of FCAW equipment.
- Demonstrate safe operations of FCAW equipment.
- Demonstrate minor repairs/maintenance of equipment.
- Perform FCAW welds to minimum required specifications.

**WELD 1220. Pipe Welding I****3 Credits (2+2P)**

Stresses the theory and practical application of pipe welding in the 1-G and 2-G positions. This course will develop skills in the fit-up and technique of welding pipe, using electrodes and various Welding process.

**Prerequisite(s):** WELD 1130, WELD 1140, and WELD 1155, or consent of instructor.

**Learning Outcomes**

- Demonstrate an understanding of 1-G and 2-G pipe welding using a variety of pipe sizes.
- Demonstrate the ability to produce destructive test samples to AWS and/or API standards.
- Demonstrate the ability to prepare, fit and tack pipe to specifications, getting pipe ready to weld.
- Demonstrate knowledge of appropriate pipe fitting terminology and calculations.

**WELD 1310. Metallurgy****3 Credits (3)**

This course includes a study of ferrous and nonferrous metals from ore to the finished products. Emphasis is placed on metal alloys, heat-treating, hard surfacing, welding techniques, forging, foundry processes, and mechanical properties of metal including hardness, machinability, and ductility. Technical terms used in the various phases of metallurgy, from early history to present.

**Prerequisites:** WELD 1130 or consent of instructor.

**Learning Outcomes**

1. Describe metals and alloys commonly used in industry.
2. Describe mechanical properties of metals including stresses and failures.
3. Describe the metalworking processes of casting, forming, and machining.
4. Describe the two basic processes, and state the four major purposes of heat treatment.

**WELD 2130. SMAW (Shielded Metal Arc Welding) II****6 Credits (3+6P)**

Reviews and builds upon SMAW-1 skills. Students will learn joint design and AWS standards for welder qualification testing. Continuation of WELD 1130. May be repeated up to 6 credits.

**Prerequisite:** WELD 1130.

**Learning Outcomes**

1. Meet AWS acceptance criteria for weld quality and destructive tests (bend test).

**WELD 2155. GTAW-Gas Tungsten Arc Welding II****3 Credits (2)**

A continuation of GTAW I. This course is designed to provide the student with the ability to setup, maintain and operate Gas Tungsten Arc Welding (GTAW) equipment safely. Develop skills to weld structural joints to bend tests standards utilizing various metals. Weld quality will be measured in accordance with American Welding Society standards.

**Prerequisite:** WELD 1155 or consent of instructor.

**Learning Outcomes**

1. Demonstrate the ability to perform increasingly complex welds.
2. Demonstrate the ability set up GTAW equipment for use, inspect equipment prior to use, perform minor maintenance, and identify potential hazards.
3. Demonstrate the ability to perform GTAW on various base metals in all positions.
4. Demonstrate the understanding of basic metallurgical differences in various base and filler metals.
5. Demonstrate an understanding of welding currents and power sources.

**WELD 2220. Pipe Welding II****3 Credits (2+2P)**

Stresses the theory and practical application of 5-G and 6-G pipe welding. This course will develop skills in the technique of pipe welding, using various Welding processes.

**Prerequisite:** WELD 2120.

**Learning Outcomes**

1. Demonstrate an understanding of 5-G and 6-G pipe welding using a variety of pipe sizes.
2. Demonstrate the ability to produce destructive test samples to AWS and/or API standards.
3. Demonstrate the ability to prepare, fit and tack pipe to specifications, getting pipe ready to weld.

4. Demonstrate knowledge of appropriate pipe fitting terminology and calculations.

**WELD 2290. Welder Qualifications****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, and basics of welding codes. Restricted to Welding majors.

**Prerequisites:** OETS 104 or OETS 118; and WELD 11130, WELD 1120, WELD 1310, WELD 1140, WELD 1155, WELD 1210 and WELD 2155 or consent of instructor.

**Learning Outcomes**

1. Pass the AWS and ASME Welder Performance Qualification Tests in all processes and all positions.
2. Recognize the role of welding inspection and testing in industry.
3. Identify essential information for welding procedure and performance qualification.
4. Identify essential welding and inspection information from Welding Procedure Specifications (WPS's).
5. Identify essential welding and inspection information from AWS D1 1, Structural Welding Code – Steel.
6. Identify essential welding and inspection information from ASME, Boiler and Pressure Vessel Code - Section IX.
7. Describe the basic principles of non-destructive testing methods.

**WELD 2995. Cooperative Education in Welding****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. May be repeated up to 6 credits.

**Learning Outcomes**

1. Varies.

**WELD 2996. Topics in Welding****1-6 Credits**

Individual studies in areas of welding technology. May be repeated up to 12 credits.

**Learning Outcomes**

1. Varies.

**WELD 2997. Independent Study****1-4 Credits**

Individual Studies related to Welding.

**Learning Outcomes**

1. Varies.

## Student Academic Code of Conduct

### Student Academic Code of Conduct

The Student Academic Code of Conduct (SACC), applicable to both undergraduate and graduate students, provides procedures for reviewing and resolving 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 essential 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 in a formal review before a university Hearing Panel. Either party to the matter has the right to a final appeal of the results 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. Graduate students' offenses and repeat undergraduate offenses are subject to a Level II sanction, even if less severe. Level II sanctions consist of 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 (<https://arp.nmsu.edu/chapter-5/5-10.html>)
- ARP 5-11 (<https://arp.nmsu.edu/chapter-5/5-11.html>)

## Examples of Academic Misconduct and Report Form

- ARP Appendix 5.10-A (Examples) (<https://arp.nmsu.edu/appendices/appendix-5-10-a.html>)
- ARP Appendix 5.11-B (Form) ([https://cm.maxient.com/reportingform.php?NewMexicoStateUniv&layout\\_id=15](https://cm.maxient.com/reportingform.php?NewMexicoStateUniv&layout_id=15))

## Flowchart of Procedures

- ARP Appendix 5.11-A (<https://arp.nmsu.edu/pdf/Appendix-5-11-A.pdf>)

# Governance and Personnel

## NMSU Board of Regent

- **Ammu Devasthali**, Chair of Regent from Las Cruces, NM for term expiring December 31, 2028.
- **Deborah Romero**, Vice Chair of Regent from Santa Fe, NM for term expiring December 31, 2026.
- **Christopher Saucedo**, Secretary/Treasurer from Albuquerque, NM for term expiring December 31, 2026.
- **Marisol Olivas**, Member from Belen, NM for term expiring December 31, 2026.
- **Ricardo Gonzales**, Member from Las Cruces NM for term expiring December 31, 2030.

## Las Cruces Administration

- **Valerio Ferme**, President of the NMSU System
- **Mónica Torres**, Chancellor, Community College System
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