This catalog describes the curriculum, programs, and academic regulations of Northern New Mexico College. The provisions of this catalog are not to be regarded as an irrevocable contract between the student and the College. While every effort is made to ensure the accuracy of the information available at the time this catalog is prepared, Northern reserves the right to make changes, at any time, without prior notice.

Northern is a state institution. All facilities, equipment, and materials are for official use only and may not be used for private business or benefit.

**CAMPUSES LOCATIONS**

**El Rito Campus**
- P.O. Box 160
- El Rito, NM 87530
- (505) 581-4100
- FAX (505) 581-4130

**Española Campus**
- 921 Paseo de Oñate
- Española, NM 87532
- (505) 747-2100
- FAX (505) 747-2180

Hearing impaired applicants should contact the Telecommunications Relay Service, available 7 days a week, 24 hours a day at 1.800.659.8331.

Northern is accredited by the Higher Learning Commission of the North Central Association of Colleges and Schools. Their phone number is 312.263.0456, and their web address is [www.ncahigherlearningcommission.org](http://www.ncahigherlearningcommission.org).

Northern does not discriminate on the basis of age, race, color, sex, sexual orientation, religion, handicap, national origin, ancestry, or medical condition in its educational programs, activities, employment, or admission policies.

**Title IX Coordinator**: Director of Human Resources, Northern New Mexico College, 921 Paseo de Oñate, Española, NM 87532. (505) 747-2160.

**Section 504 ADA Coordinator**: Accessibility Resources Coordinator, Northern New Mexico College, 921 Paseo de Oñate, Española, NM 87532. (505) 747-2152.

Questions concerning any portion of this publication should be addressed to the Registrar’s office at (505) 747-2138.

Copies of this catalog are available online at [www.nnmc.edu](http://www.nnmc.edu). You may also purchase a copy through Northern’s Bookstore at a cost of $3.00 each.

Produced by Northern’s Communications Office. Cover photo by John T. Denne.
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Northern New Mexico College and its mission have always played an integral role in the State of New Mexico’s goal to provide educational opportunities for its residents.

In the early 1900s the New Mexico Territorial Legislature determined that a facility was needed as a “normal school” with a primary function of training teachers for the State’s Spanish-speaking population. The Spanish American Normal School at El Rito opened its doors in September 1909, and celebrated its centennial as Northern New Mexico College.

When the New Mexico Territory applied for statehood in 1912, the State Constitution (Article 12, Section 11) identified the Spanish American Normal School as one of ten educational institutions which would be supported by the state. The Spanish American School provided both secondary and post-secondary educational programs.

In 1953, the State Legislature changed the name of the institution to Northern New Mexico State School and, mandating that the institution provide training not available in public schools, implemented a secondary school curriculum. Six years later, the Board of Regents renamed the school Northern New Mexico College. NNMC continued to teach grades 7-12 along with the new college curriculum.

By 1961, the College was offering two-year programs in business education, general studies, and selected vocational programs. Technical-vocational programs proved popular, and enrollment increased due to a school-operated transportation system which allowed the population from the surrounding rural villages to attend the school.

In 1969 the high school curriculum was transferred to a newly-created public school district and the curriculum at the College was limited to technical-vocational course offerings. One year later, the Board of Regents again renamed the school the New Mexico Technical-Vocational School to indicate the changes in course offerings.

Operating under its new name, the Technical-Vocational School expanded its curriculum and faculty, and developed a campus in Española, approximately 30 miles from El Rito. The school assumed the Practical Nurse program from St. Vincent’s Hospital in Santa Fe. As educational needs in northern New Mexico evolved, educators and legislators identified a need for a more comprehensive delivery of educational services. In 1976 a task force was created whose membership included representatives from the New Mexico Technical-Vocational School, the University of New Mexico, and local school boards and citizens to assess the feasibility of establishing a community college. The task force recommended that the University of New Mexico-Northern Branch (at Santa Cruz) be dissolved and their academic course offerings be combined with those of the New Mexico Technical-Vocational School. The Legislature accepted this recommendation and provided for the expansion of the institution’s mission.

The Board of Regents soon accepted the new mission of the institution, renamed the institution Northern New Mexico Community College, and began combining existing programs, philosophies, and procedures in order to establish a comprehensive community college.

The new institution was headed by a president appointed by the Board of Regents. The programs to be offered by the new institution included associate degrees in various
academic and occupational disciplines, certificate-granting programs in occupational studies, special interest courses granting continuing education units (CEUs), and other courses offered for no credit.

In 2004, legislative approval and accreditation was extended to Northern, permitting it to be the first community college in the state of New Mexico to offer a four-year degree, a BA in Elementary Education. In 2005, legislation was enacted which permitted the college to offer four-year degrees in any programs deemed necessary and appropriate. Northern New Mexico Community College was renamed Northern New Mexico College.

MISSION STATEMENT

The mission of Northern New Mexico College is to ensure student success by providing access to affordable community-based learning opportunities that meet the educational, cultural, and economic needs of the region.

VISION STATEMENT

Northern New Mexico College is a Hispanic- and Native American-serving comprehensive institution that will be recognized nationally for cultural sustainability, quality student learning, and developing economically strong communities among diverse populations.

ACCREDITATION

Simultaneously with the expansion of mission and services, Northern undertook candidacy for accreditation with the Higher Learning Commission of the North Central Association of Colleges and Schools (NCA). The Technical-Vocational School had already been granted candidacy for accreditation (1977-1982). Accreditation by the North Central Association for Northern as a community college was officially declared on March 20, 1982; reaffirmation of accreditation was granted for seven years in 1987; and reaffirmation of accreditation was granted for ten years (1994-2004).

In August 2004, our regional accrediting association (NCA) accredited Northern’s Bachelor of Arts in Elementary Education, as well as pre-accrediting whatever other undergraduate teaching degrees Northern would develop.

In 2005, Northern sought and obtained accreditation for baccalaureate degrees in Biology, Business Administration (BBA), Environmental Science, Information Technology, and Integrative Health Studies.

In 2008, Northern again sought and obtained accreditation for baccalaureate degrees in Engineering (Information Engineering Technology, Mechanical Engineering (Solar Energy Technology), Software Engineering Technology, Mathematics, and an RN to BSN completion program. In February 2009, Northern’s reaffirmation of accreditation was granted for seven years (2009-2016).

On June 25, 2009, accreditation was granted for a Bachelor of Music in Jazz Studies, and, in March 2010, accreditation was granted for a Bachelor of Arts in Integrated Studies with majors in Humanities, Psychology, and Pueblo Indian Studies.

In addition to regional accreditation, Northern’s educational offerings are accredited or approved by other agencies. The College’s occupational courses are approved by the New Mexico State Department of Public Education; the Barbering, Cosmetology,
Massage Therapy, and Nursing programs are approved by their respective state licensing boards; the Radiographic Technology program is accredited by the Joint Review Committee on Education and Radiographic Technology; the associate-level Business programs are accredited by the Association of Collegiate Business Schools and Programs; and all of the Education programs are state NCATE accredited. Northern will shortly be submitting its education program for national NCATE accreditation.

State approval for benefits under Title 38 USC for veterans and other eligible persons has been granted by the New Mexico Veterans Service Commission.

Those wishing to review or verify the above statements concerning accreditation should contact the Director of Assessment and Institutional Accreditation at 505.747.5430.

PHYSICAL SETTING

Northern has campuses in Española and El Rito. In addition, Northern also regularly offers classes upon request at other communities within its service area.

The Española campus is an attractive thirty-acre tract which runs from state highway 85 to the banks of the Rio Grande. From anywhere on campus one may appreciate the panorama of the Sangre de Cristo and Jemez Mountain ranges.

The surrounding area offers a wide range of outdoor recreational activities such as boating, swimming, fishing, hunting, camping, and skiing. Española is the center of commerce for the area which has a growing population of approximately 35,000. The Española campus is located 25 miles north of Santa Fe and 40 miles south of Taos. The Española campus consists of eleven buildings dedicated to classrooms and labs, plus a gymnasium.

The El Rito campus is 32 miles north of Española on a sixty-acre tract on the southernmost slope of the San Juan Mountains at an elevation of 6,600 feet. Adjacent to the campus is the scenic and peaceful village of El Rito which is located at the entrance of the vast Carson National Forest. This forest is known for its excellent fishing, hunting, and camping sites. Fifteen miles to the east is the village of Ojo Caliente, which is famous for its hot mineral springs and related resort facilities. Eighteen miles to the northwest is Abiquiu Lake, which is a prime water recreation area.

Undergraduate Admissions

ADMISSIONS

Northern has an open admissions policy for any person who can benefit from the instructional programs offered by the College. No applicant will be denied admission on the basis of race, color, creed, age, sex, sexual orientation, religion, national origin, physical handicap, or marital status. However, because Northern is a post-secondary institution, we do have restrictions on admission for those who have not yet graduated from high school.

Detailed information concerning deadlines for submitting applications for admission appear in each session’s Schedule of Classes.

USE OF SOCIAL SECURITY NUMBERS

Northern does not use individual Social Security Numbers as a means of identifica-
tion; the College issues student ID numbers generated by its administrative software as its primary identification system. The College requires that Social Security Numbers be supplied in order to comply with various state and federal reporting requirements (e.g. financial aid). In no instance will an individual’s Social Security Number be disclosed to other parties for any purpose without the written consent of the student.

GENERAL POLICIES

If you wish to obtain a degree or certificate from Northern, you may apply for regular admission status * and must show that you:

1. have received a diploma from a public or private high school/home school (home school graduates must be at least 16).

   * Note: a Certificate of Completion or Attendance from a high school is not a diploma. If you present a Certificate of Completion/Attendance, you will be classified in Non-Degree status until such time as you earn a GED.

2. have received a General Education Development (GED) diploma; or

3. are a transfer student in good standing from another accredited college, university, or other post-secondary institution; and

   * Admission in regular status amounts to “matriculation,” which is a formal acceptance by the college of your qualifications to pursue a degree or certificate. You may be matriculated at only one college at a time. Therefore, if you are already matriculated at, for example, New Mexico Highlands University, regular status at Northern would not be appropriate; you would then seek admission to Northern in Non-Degree status.

   Until all required transcripts are received at the Office of Admissions, your application will be in an “incomplete” status.

DECLARING A MAJOR and CHANGING A MAJOR

If you are declaring a major for a certificate or associate degree, you will achieve matriculation (final admission status) when we have received official transcripts from every institution you have previously attended. If you have never attended college before, a copy of your high school or GED diploma will suffice. If you will be seeking financial assistance, you will have to supply an official transcript showing HS graduation or GED completion. The fact that one or more colleges consolidate courses from other colleges onto their transcripts does not mean that you can choose which transcripts to have sent to Northern—all are required.

Some programs have their own special admission standards (e.g., Nursing, Education); when you apply to the college for those majors, you will be considered a “tracking” student until such time as the department/college informs the Office of Admissions that you have applied to and been accepted to that specific program.

If, once you have started classes, you decide to change your major it will be your responsibility to inform the Office of Admissions in writing by submitting a properly completed Change of Major form. Again, if the new department or college has its own application process, you will revert to a “tracking” status until your application has been accepted by that entity.

This is a very important process when it comes to graduating. At Northern, you are entitled to graduate under the terms of the catalog under which you began your major or under any subsequent catalog under which you may be eligible, given that
you haven’t “stopped out.” Your eligibility does not begin when you decide you have chosen the major; it begins only after the proper form has been approved and input to the database.

If you have “stopped out” (not attended for more than one academic year), you will have to submit an application for readmission when you return to Northern. At that time, no matter what major you declare, your eligibility status starts with the current catalog. You would no longer be eligible to follow any catalog for which you had previously been eligible.

FIRST–TIME–ANY–COLLEGE (FTAC) STUDENTS

If you have demonstrated eligibility through HS or GED graduation, your application will be processed as Incomplete until you present a copy of your diploma and (for high school graduates) an official transcript, plus adequate ACT scores or Course Placement Evaluations (Northern uses COMPASS).

If you test into ENG 106N or into PD 108N, you will be admitted as a regular, degree-seeking student and will be eligible to receive whatever financial aid you may be eligible for, but such aid will not pay for either of these two courses. However, if you are already enrolled in other courses that total 12 or more credits, you can add either or both of these courses and their tuition will be covered because Northern does not charge for credits between 13-18. Further, admission in regular status will revert to non-degree status if you have not successfully completed ENG 108N and MATH 100N by the end of your first year of study.

If, however, you test below ENG 106N or below PD 108N, you will be admitted as a non-degree student. This will make you ineligible to receive financial aid. You may, though, enroll in certain courses which have no prerequisites. You may also choose to retest. If you wish to retest, visit the Student Success Center to obtain brush-up materials before retesting.

TRANSFER STUDENTS

If you are in good standing at the last college attended, you are eligible to attend Northern in either regular or non-degree status, depending on your interests and needs. Good standing means that you are not on an academic or disciplinary suspension.

We require that you list on your application for admission all colleges attended, with dates, and degrees earned and, if you choose to attend in regular status, we require that you have each college or other post-secondary school you have attended send us an official transcript.

If, before you register, analysis of your transcript(s) does not show either that you have completed or that you qualify for college-level English or math, your application will be considered as incomplete, pending receipt of adequate Course Placement scores.

If you are not in good standing, you are not automatically eligible to apply for admission to Northern. You may complete the application form and attach to it a letter of appeal addressed to the Director of Admissions. In your letter, you must state what caused the lack of good standing and how you plan to maintain good standing while at Northern. To facilitate your appeal, attach a copy of the transcript on which the Suspension is recorded. Your appeal will be processed and you will be notified of
acceptance or denial.

Until all transcripts have been received at the Office of Admissions, you will not be able to qualify for financial aid or be able to graduate: your admission status will remain Incomplete.

INTERNATIONAL STUDENTS

Northern is approved by the United States Customs and Immigration Service (USCIS), a division of the Department of Homeland Security, to issue I-20s for those applicants who meet our requirements. Most, but not all, degree programs are available for those seeking a student (F-1) visa.

If you are a non-immigrant alien who wishes to apply to Northern, please contact the Director of Admissions (forona@nnmc.edu) for the necessary forms, or download the special application form from our web site at www.nnmc.edu.

Proof of English language competency is required before being accepted to the College; only those who have graduated from a U.S high school or college will be exempt from this requirement. Refer to the special application packet for details/choices of test instruments. This packet is available online at www.nnmc.edu.

The Designated Service Officer at Northern is the Director of Admissions (forona@nnmc.edu or 505.747.2161).

READMISSION

If you have previously been a student at Northern other than as a high school student, and if it has been at least one academic year since your last attendance, you will have to re-apply for admission. If your status has not changed since your last attendance, no paperwork other than a new application will be necessary; however, if you are re-applying for regular status and have been to another college in the meantime, you must have an official transcript sent from each such college. When all required documentation has been received, the Office of Admissions will determine if you will need to provide Course Placement Evaluation scores before granting regular status. Until everything is in order, your admission status will be classified as Incomplete.

If you re-apply in Non-degree status, you only need to complete the Non-degree Application Form.

NON–DEGREE

This status is for those over the age of 18 who do not meet or do not wish to meet the criteria for matriculation (regular status). If you are accepted in this status, you may later apply for regular status when you can demonstrate that you have met the requirements. Please note that no type of financial assistance is extended to students in non-degree status.

CONCURRENTER ENROLLMENT

Concurrent enrollment is a term used to define a relationship existing between public or private school districts and public colleges and universities in New Mexico. If you are in grades 10-12, carry a 2.00 minimum cumulative GPA, and have tested into at least ENG 108N, MATH 100N, and RDG 108N, you may apply for admission.

If you are in grade 9, you may apply if you meet the same criteria, but you will have
to support your application with letters of recommendation from your counselor and principal. You may also be required to submit to an interview with Northern’s Director of Admissions.

Admission to the college as a concurrent enrollment student is on a term-by-term basis: at the end of each term, you must demonstrate that your cumulative GPA at both schools (college and high school) is a minimum 2.00 by submitting an official transcript from your high school to Northern's Office of Admissions.

If you are still in high school, you must use the Application for Admission for Students Still in High School.

In case you should disagree with either your high school or Northern concerning your selection and/or admittance, each entity has set up a formal appellate process. To appeal at the college level, contact the Director of Admissions; at the high school level, contact your counselor.

DUAL CREDIT

Student eligibility and enrollment in dual credit courses is based on your high school counselor’s approval and/or test scores (COMPASS and/or ACT), or other test instruments approved by Northern, or by completion of course prerequisites.

If you are enrolled in a public school district (or one of its charter schools), or a BIA school and if you qualify for college-level courses after being admitted to the college, you will be eligible for Dual Credit enrollment, which means that the college will cover your tuition and general fees, your public school district or BIA school will buy and loan you the required textbooks, and you and your parents will be responsible for transportation and any non-general fees (e.g., lab, course, or media fees). In order for you to participate in the Dual Credit program your high school counselor must sign off on a special form (Dual Credit Request Form), which you will bring to Northern’s Dual Credit Office in order to enroll. Completion of that form guarantees credit both toward high school graduation and toward a college degree at Northern.

If you wish to enroll in any course which is not approved by your school district (including remedial courses), you and your parents will be responsible for all costs associated with such enrollment.

If you are enrolled in a private high school (including home school), after admission to the college you may enroll in those courses for which you meet the prerequisites. If you fall into this category, you and your parents will be responsible for all costs associated with such enrollment.

EARLY ADMISSION OF PUBLIC HIGH SCHOOL STUDENTS FOR FULL–TIME ATTENDANCE

If you are a high school senior with a 3.00 cumulative grade point average (based on grades 9 through 11) and wish to apply for admission as a full-time student in your senior year, you must have parental permission (if under 18) and a release from your school district (if public) or high school (if private).

In other words, there must be general agreement among the school, your parents/guardians, and yourself that trading high school for full-time college attendance is the most appropriate educational goal for you. This status will not preclude your high school from counting the college credits you earn against the requirements for earning a high school diploma. That will be a decision made by your district.
To accomplish this, you will need to have your high school send Northern an official transcript showing your coursework from grades 9 through 11. If you are admitted under this special status but your high school will not use Northern credits toward graduation, we encourage you to work toward earning a GED diploma as soon as possible while you are enrolled in college credit courses. Although you do not have to do so, it is to your benefit in the long run to complete the GED while attending college classes.

**ADMISSION FOR THOSE WHO DO NOT OTHERWISE QUALIFY**

If you do not otherwise qualify for admission to Northern, you may provide a written appeal of Northern’s admission policies to the Director of Admissions, providing such evidence as may be required by that official. If the Director of Admissions does not grant your appeal, you would then have the right to appeal to Northern’s Scholastic Standards Committee, a Faculty Committee. If the committee hears your appeal, you must be present at the hearing. A favorable recommendation from that committee could permit admission in an appropriate status, with enrollment in appropriate courses, as determined by Course Placement Evaluation scores.

**Special Program Requirements**

Admission to the college does not carry with it admission to all certificate or associate degree programs of study. You should check with the department chairpersons or program directors of specific programs for admission criteria to their programs.

**BACCALAUREATE PROGRAM ADMISSION STANDARDS**

In addition to the minimum standards established for admission to its certificate-granting and associate degree-granting programs, Northern has set additional standards for those desiring to enter its four-year baccalaureate degree programs.

See the standards for matriculation to each program as shown in the degree section of this catalog. In general, you must have completed at least the 35-credits of General Education Common Core, and have at least a 2.50 cumulative grade point average (excluding any remedial courses) before being eligible to apply for acceptance to these programs.

**TRANSFER AMONG NEW MEXICO HIGHER EDUCATION INSTITUTIONS**

To facilitate transfer of students and course credits among New Mexico’s colleges and universities, the state’s public institutions of higher education are required to accept in transfer the courses taken within approved modules of lower-division course work and apply them toward degree requirements. Several transfer guides have been developed through collaboration of New Mexico’s public post-secondary institutions, consistent with requirements of state law (21-1B, NMSA 1978). Students enrolling for first-year or second-year study at a New Mexico institution who wish to prepare for possible transfer into a degree program at another institution are advised to take these courses during their freshman and sophomore years. [Refer to the New Mexico Higher Education Department website at www.hed.state.nm.us for complete lists of courses.]

**STUDENT RESPONSIBILITY**

New Mexico’s colleges and universities have collaborated to produce guides to assist students who plan to transfer before completing a program of study. Course modules
are designed to help you select courses carefully so that they may transfer with little or no loss of credit. However, planning for effective transfer with maximum efficiency is ultimately your responsibility. Responsible transfer planning includes early and regular consultation with the intended degree-seeking institution to assure that all pre-transfer coursework will meet the requirements of the desired degree.

**TRANSFERABLE LOWER–DIVISION GENERAL EDUCATION COMMON CORE**

Students enrolling for first-year study who have not yet selected either an academic focus or the institution where they wish to graduate are advised during their freshman year to take courses outlined in the *Lower Division General Education Common Core*. For students enrolled at any public institution in New Mexico, the following courses are guaranteed to transfer to any other New Mexico public college or university, and apply toward associate and baccalaureate degree program requirements. Students should consult advisors at their current institutions regarding which specific courses fit these categories. Students preparing for careers in engineering, health sciences, or other profession-related fields are advised that some of this coursework may not transfer toward general education requirements but in most cases will apply toward elective requirements.

**AREA I: COMMUNICATIONS / SELECT 9 SEM CR**

(a) College-level English Composition  3 cr
(b) College-level Writing (a second course building on the above)  3 cr
(c) Oral Communication  3 cr

**AREA II: MATHEMATICS / SELECT 3 SEM CR**

(a) College Algebra  3 cr
(b) Other math course at/above level of College Algebra

**AREA III: LABORATORY SCIENCE / SELECT 8 SEM CR**

(a) General Biology, with laboratory  4-8 cr
(b) General Chemistry, with laboratory  4-8 cr
(c) General Physics, with laboratory  4-8 cr
(d) Geology/Earth Science, with lab.  4-8 cr
(e) Astronomy, with laboratory  4-8 cr

**AREA IV: SOCIAL & BEHAVIORAL SCIENCES / SELECT 6–9 SEM CR**

(a) Economics (Macro- or Microeconomics)  3 cr
(b) Introduction to Political Science  3 cr
(c) Introduction to Psychology  3 cr
(d) Introduction to Sociology  3 cr
(e) Introduction to Anthropology  3 cr
AREA V: HUMANITIES AND FINE ARTS / SELECT 6–9 SEM CR

(a) Introduction to History Survey   3 cr
(b) Introduction to Philosophy    3 cr
(c) Introduction to courses in history, theory, or aesthetics of the arts or literature * 3 cr

Total to be selected = 35 semester hours

TRANSFERABLE LOWER–DIVISION 64–HOUR TRANSFER MODULES

Students who have selected a field of study but have not yet selected the college or university where they wish to earn their baccalaureate degree are advised to take courses outlined in one of the Lower-Division 64-hour Transfer Modules during their freshman and sophomore years. For students enrolled at any public institution in New Mexico, these courses are guaranteed to transfer to any New Mexico university and apply toward bachelor’s degree program requirements. Students should consult advisors at their current institutions regarding which specific classes fit these categories. Lower-Division Transfer Modules presently exist for:

- Business
- Social/Behavioral Sciences
- Biological Sciences
- Physical Sciences
- Engineering
- Early Childhood Education
- Teacher Education
- Criminal Justice

Modules for additional areas of study are being developed. Copies of Transfer Modules listed above may be obtained at Northern’s Student Advisement Center or from the web site for the institution to which you intend to transfer.

Students who have selected a field of study and/or the institution from which they wish to graduate are advised to consult the transfer guide or catalog for that institution for more current and detailed advice to guide their course selection. Copies of formal transfer guides are available

TRANSFER OF CREDIT AND AWARDOING OF CREDIT THROUGH EXAMINATION

Northern recognizes that there are many ways in which college credit may be amassed and, in an effort to maximize the opportunities available to its public, has adopted the following policies:

A. Academic credit may be granted upon:

1. the completion of any of Northern’s credit-bearing classes with a grade of “C” or better. Academic credit in this context refers to credit accepted against courses required for graduation in your declared major.

2. receipt at Northern of an official transcript from another regionally or nationally accredited college or university showing successful completion of an equivalent credit-bearing course. Grades from other institutions are not accepted; grades of TR are posted. At the time your admission status has been finalized with the receipt of all required college transcripts, your transcripts will be sent from the Office of Admissions to the Office of the Registrar to be evaluated and appropriate credit posted to your official Northern record.
Note: Northern does not accept every course in transfer. Only those courses which are required for graduation in your declared major or to establish prerequisites are considered.

3. receipt at Northern of official AP/CIE/CLEP/DSST scores which meet minimum cut-off scores as listed on the following page.

**Advanced Placement (AP): minimum score = 3, English = 4**

**AP exam title and credit allowable:**

- Art History = ART 107 (3) & ART 211 (3)
- Biology = BIOL 201/L (4) & BIOL 202/L (4) *
- Calculus AB or BC = MATH 162 (4)
- Chemistry = CHEM 121/L (4) & CHEM 122/L (4)*
- Computer Science A = CS 132 (3); Computer Science B = CS 142 (3);
- Computer Science C++ = CS 200 (3)
- Economics = ECON 200 (3)
- English = ENG 111 (3) & ENG 112 (3)
- Government & Politics = PSCI 200 (3)
- Physics B = PHYS 121/L (4) & PHYS 122/L (4) *
- Physics C = PHYS 215/L (4) & PHYS 216/L (4) *
  *must include lab experiences
- Psychology = PSY 105 (3)
- Spanish = SPAN 201 (3) & SPAN 202 (3)
- Statistics = MATH 145 (3)
- Studio Art = ART 110 (3)*
  *Additional 3 credits available upon portfolio evaluation
- US History = HIST 161 (3) & HIST 162 (3)

**University of Cambridge International Examinations (CIE):** Northern will grant credit for grades of A-C on A & AS level examinations, as appropriate to degree requirements.

**College Level Examination Program (CLEP):** Subject examinations are administered by the Student Success Center. At the time of publication of this catalog, the fee is $72.00 per test (payable to CLEP), plus a $15.00 administrative fee (payable to Northern). Call 505.747.2199 for details. These examinations are computer-based.

**CLEP Subject Exams:**

- Principles of Management (46) BA 240 (3)
- Introduction to Marketing (50) BA 251 (3)
- Introduction to Business Law (50) BA 300 (3)
- Principles of Macroeconomics (44) ECON 200 (3)
- Principles of Microeconomics (41) ECON 201 (3)
- Freshman College Comp. (44) ENG 111 (3)  
  *(Essay is required)*
- Analysis & Interp. of Lit. (50) ENG 112 (3)
- American History I (50) HIST 161 (3)
<table>
<thead>
<tr>
<th>Course Description</th>
<th>Course Code</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>American History II (50)</td>
<td>HIST 162</td>
<td>(3)</td>
</tr>
<tr>
<td>College Algebra (46)</td>
<td>MATH 130</td>
<td>(3)</td>
</tr>
<tr>
<td>College Algebra (50)*</td>
<td>MATH 150</td>
<td>(3)</td>
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<tr>
<td><em>(A score of 50 or better will earn credit for 130 &amp; 150)</em></td>
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</tr>
<tr>
<td>College Algebra/Trigonometry (61)</td>
<td>MATH 155</td>
<td>(3)</td>
</tr>
<tr>
<td><em>(A score of 61 will earn credit for 150 &amp; 155)</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calculus w/ Elem. Functions (47)</td>
<td>MATH 162</td>
<td>(3)</td>
</tr>
<tr>
<td>American Government (50)</td>
<td>PSCI 200</td>
<td>(3)</td>
</tr>
<tr>
<td>General Psychology (50)</td>
<td>PSY 105</td>
<td>(3)</td>
</tr>
<tr>
<td>Human Growth &amp; Development (50)</td>
<td>PSY 290</td>
<td>(3)</td>
</tr>
<tr>
<td>Introduction to Sociology (50)</td>
<td>SOC 101</td>
<td>(3)</td>
</tr>
<tr>
<td>College Spanish I &amp; II (50)</td>
<td>SPAN 101/102</td>
<td>(6)</td>
</tr>
<tr>
<td><em>(A score of 50-62 will earn 6 crs.)</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>College Spanish I and II (63)</td>
<td>SPAN 201/202</td>
<td>(6)</td>
</tr>
<tr>
<td><em>(A score of 63 or better will earn 12 crs.)</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DSST (DANTES) Subject Exams:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The following DSST exams are made available for testing at the Student Success Center. The cost per test is $80 (payable to The Chauncey Group), plus a $15.00 administrative fee (payable to Northern). Call 505.747.2199 for details.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business Mathematics (48)</td>
<td>BA 205</td>
<td>(3)</td>
</tr>
<tr>
<td>Criminal Justice (49)</td>
<td>CJ 111 or CJ 132</td>
<td>(3)</td>
</tr>
<tr>
<td>Here’s to Your Health (48)</td>
<td>HPER El.</td>
<td>(3)</td>
</tr>
<tr>
<td>Resource Management (46)</td>
<td>BA360</td>
<td>(3)</td>
</tr>
<tr>
<td>Introduction to Business (46)</td>
<td>BA 220</td>
<td>(3)</td>
</tr>
<tr>
<td>Int. to Law Enforcement (45)</td>
<td>CJ 211 or CJ 221</td>
<td>(3)</td>
</tr>
<tr>
<td>Lifespan Develop. Psychology (46)</td>
<td>PSY 290</td>
<td>(3)</td>
</tr>
<tr>
<td>Mgmtnt Information Systems (46)</td>
<td>BA 242</td>
<td>(3)</td>
</tr>
<tr>
<td>Organizational Behavior (48)</td>
<td>BA 313</td>
<td>(3)</td>
</tr>
<tr>
<td>Principles of Finance (46)</td>
<td>BA 310</td>
<td>(3)</td>
</tr>
<tr>
<td>Principles of Statistics (48)</td>
<td>MATH 145</td>
<td>(3)</td>
</tr>
<tr>
<td>Principles of Supervision (46)</td>
<td>BA 240</td>
<td>(3)</td>
</tr>
</tbody>
</table>

4. receipt of a veteran’s DD-214 and/or DD-295 which provides sufficient information to allow an evaluation of prior training and experience during military service against Northern’s degree requirements. American Council on Education (ACE) guidebooks are used for the evaluation of such credit. Credit is subject to departmental approval against major requirements.

5. official transcripts and/or certificates of completion from entities recognized in *The National Guide to Educational Credit for Training Programs (ACE)* or in *College Credit Recommendations: The Directory of The National Program on Non-collegiate Sponsored Institutions* (New York Board of Regents).

6. documented completion of one/more of the following:

- NM Law Enforcement Academy (31 crs)*
BIA Law Enforcement Academy (27 crs)*
* Includes 2 crs HPER Electives + CJ courses.

You may find more information in the academic section of this catalog, under the AAS-Police Science degree.

7. successful completion of one of Northern’s approved Locally-Developed Subject Examinations [see the Registrar for further details]. Note: This type of examination does not extend to college-level courses which fall into the category of being part of the General Education Common Core.

8. receipt of an acceptable transcript showing courses taught at non-U.S. colleges or universities for which an adequate determination can be made by the Registrar as to the equivalency of the course content and satisfactory progress based on Northern’s standards.

9. receipt of a current card showing certification for CPR (issued by the American Heart Association) or CPR/First Aid (issued by the American Red Cross). Credit will be given for our equivalent course.

10. receipt of a current CRT card. Credit will apply in substitution for PHYS 121/L in the AAS in Radiation Protection only.

11. Credit for non-required courses or for Community Service/Continuing Education (CEU) courses is not granted.

B. In general, Northern imposes no maximum limitation on the number of credits which may be accepted in transfer or by means of nationally standardized testing. Specific programs, however, may establish time cut-offs for the acceptance of credit which had been earned in the past. This is to ensure that the course competencies that you possess are not out of date. Baccalaureate programs may impose limitations on how many credits can be accepted in transfer against upper-division requirements. Any such restrictions are clearly defined in Northern’s catalog and/or in the individual programs’ handbooks.

C. Any student may at any time submit official scores based on such nationally standardized tests as CLEP/DSST without respect to the student’s status of matriculation or the number of terms completed at Northern. Credit will be posted only if the student is in degree-seeking status.

COMPLAINT PROCEDURE FOR TRANSFER STUDENTS

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 Northern New Mexico College’s complaint policy may be accessed on line at Northern’s website (www.nnmc.edu). If you have not received satisfaction from internal college processes, you may complain to the New Mexico Higher Education Department, 2048 Galisteo Street, Santa Fe, NM 87505-2100, 505.476.8400 (http://hed.state.nm.us).

CLASSIFICATION OF STUDENTS

As a student, you are classified as a freshman, sophomore, junior, or senior based on the number of credit hours you have earned toward your declared degree, whether in residence at Northern, through standardized testing, or in transfer from other col-
degrees. For all practical purposes, these credits include any remediation you may have taken. The breakdown on these classifications are:

- **Freshman**: 1.00 to 32.9 cr
- **Sophomore**: 33.0 to 67.9 cr
- **Junior**: 68.0 to 100.9 cr
- **Senior**: 101.0 to 999.9 cr

These classifications are used for reporting to state and federal agencies, as well as for financial aid purposes.

**STUDENT EMAIL ACCESS**

All students who have completed the application process and have been assigned a Student ID number will, at the same time, receive a student email account which is accessible clicking on [MyNNMC](http://www.nnmc.edu) on Northern’s homepage. You must do a one-time activation of your Eagles email, then you can participate in the payment plan and receive all broadcast messages concerning course cancellations, closings or delays because of bad weather, etc.

**ADMISSION / RE-ADMISSION OR RESIDENCY CLASSIFICATION APPEAL**

If you have applied to the College for admission, re-admission, or for classification of residency and believe that the Office of Admissions & Recruitment and/or the Registrar has not adequately fulfilled its responsibilities in any of these areas, you may appeal by:

1. Providing the Director of Admissions & Recruitment with a letter of appeal, stating in detail what you believe to be inappropriate or incorrect about the decision. If the Director upholds your appeal, you will be admitted or re-admitted, as appropriate.
2. If, after your residency classification has been assigned, you feel that the admissions office has made a wrongful determination, contact the Classification Officer (the Registrar) to appeal. If you are still not satisfied, you may direct a written letter of appeal to the Chairperson of the Student Appeals Committee. According to state law and the New Mexico Higher Education Department, Northern’s appellate process is your last recourse prior to the courts (citation: HED Rule 910.10, effective 6/19/92).

**Enrollment**

**STUDENT ADVISEMENT CENTER**

Whether you are attempting to comprehend the exhaustive course listings and descriptions or you simply want guidance in understanding how classes relate to your major, the NNMC Student Advisement Center can help you put the pieces together. Choosing a major and picking the appropriate courses for the core curriculum are just some areas in which the Student Advisement Center can help provide you direction.

The Student Advisement Center (SAC) serves all freshmen students, provides new student orientation information (required), assistance for all non-degree declared students, and individuals just needing assistance. The SAC is comprised of the Accessibility Resource Center (ARC), Veteran’s/GED Advisor, American Indian Affairs and General Student Advising.
THE ADVISING PARTNERSHIP

Productive advising is built on a true partnership in which the student and the advisor work together. The spirit of an ideal advising partnership is one of mutual engagement, responsiveness, and dedication. Regular advising conversations, the fundamental building blocks of the partnership, enable an advisor to serve as a resource of knowledge and a source of referrals – so that students may plan and prepare, in the broadest sense, over the course of their years at Northern.

COURSE PLACEMENT

Our Course Placement Evaluation (CPE) process uses COMPASS as its testing instrument; it also includes an appraisal of ACT and/or SAT test scores to determine the proper level of English, math, or science courses in which you may enroll.

The CPE is offered on Mondays-Fridays, 8 a.m.–2 p.m. with the exceptions of college closures and Holidays. You will need an “OK to Test” from the Admissions office and must present a valid picture ID.

CPE is mandatory if you are a First-Time-Any-College student. It is also mandatory if you are a re-admitted student or are a transfer student seeking regular admission status and cannot demonstrate that you have met the minimum prerequisites for admission of ENG 108N and MATH 100N.

1. You can avoid the CPE process only if you are a transfer student who has received grades of “C” or better in the equivalent of Northern’s MATH 130 or ENG 111 or higher; or
2. you apply in non-degree status; or
3. you can provide appropriate-level ACT, SAT, or COMPASS evaluation scores which are no more than 2 years old.

Northern uses the following COMPASS, ACT and SAT scores for course placement.

<table>
<thead>
<tr>
<th>COMPASS</th>
<th>ACT</th>
<th>SAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range</td>
<td>Range</td>
<td>Range</td>
</tr>
<tr>
<td>English</td>
<td>0-29</td>
<td>0-12</td>
</tr>
<tr>
<td></td>
<td>30-36</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>37-69</td>
<td>14-17</td>
</tr>
<tr>
<td></td>
<td>70-100</td>
<td>18+</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Math</th>
<th>COMA</th>
<th>0-35</th>
<th>0-12</th>
<th>0-320</th>
<th>PD 108*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>36-46</td>
<td>13-14</td>
<td>340-360</td>
<td>MATH 100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>47-100</td>
<td>14+</td>
<td>370+</td>
<td>MATH 102/103/104N</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COAL</th>
<th>0-22</th>
<th>15-16</th>
<th>380-410</th>
<th>MATH 102</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>23-240</td>
<td>17-21</td>
<td>420-530</td>
<td>MATH 129/130/132</td>
</tr>
<tr>
<td></td>
<td>41-100</td>
<td>22-24</td>
<td>540-590</td>
<td>MATH 145/150</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COCA</th>
<th>0-45</th>
<th>22-24</th>
<th>540-590</th>
<th>MATH 150</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>46-100</td>
<td>25-26</td>
<td>600-650</td>
<td>MATH 155/161</td>
</tr>
<tr>
<td>COMPASS</td>
<td>ACT</td>
<td>SAT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td>-----</td>
<td>-----</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math COTR</td>
<td>Range</td>
<td>Range</td>
<td>Range</td>
<td>Place into</td>
</tr>
<tr>
<td></td>
<td>0-45</td>
<td>25-26</td>
<td>600-650</td>
<td>MATH 155/161</td>
</tr>
<tr>
<td></td>
<td>46-100</td>
<td>27-36</td>
<td>660-800</td>
<td>MATH 162</td>
</tr>
<tr>
<td>Reading</td>
<td>0-63</td>
<td>0-13</td>
<td>0-350</td>
<td>RDG 108</td>
</tr>
<tr>
<td></td>
<td>64-80</td>
<td>14-17</td>
<td>360-420</td>
<td>RDG 109</td>
</tr>
<tr>
<td></td>
<td>81-100</td>
<td>18-31</td>
<td>430+</td>
<td>No reading course</td>
</tr>
<tr>
<td>Science</td>
<td>19-36</td>
<td></td>
<td></td>
<td>CHEM 110</td>
</tr>
</tbody>
</table>

* These courses are below the threshold set for financial aid eligibility.

Note that testing above a required course into the next higher level does not relieve you of the necessity to take the lower course if it is itself required for graduation.

Visit the Student Success Center or call 747-2164 for inquiries. We strongly suggest that you take advantage of test-prep materials available at www.act.org/compass/sample before you test.

If you are not satisfied with your scores, you may re-test, but you must wait five business days before being eligible to re-test, and you must present the Student Success Center with a receipt from the cashier for the $10 re-testing fee.

**REGISTRATION**

Registration for Summer and Fall begins in the middle of April; for Spring, in the middle of October. We encourage you to register as early as you can—and to do so online. Dates for registration activity appear in each session’s Schedule of Classes. First-time-any-college students must attend New Student Orientation in order to register.

If you wish to register for short courses, you must do so by midnight of the Sunday before the course starts.

Deadlines for course enrollment and changes in enrollment (i.e., dropping and withdrawing) vary based on the length of an individual course’s Part of Term (POT). Detailed information on each different POT appears in each term’s Schedule of Classes. It is important to review this information before you attempt to enroll. You must meet the deadlines.

**ENROLLMENT LIMITATIONS**

**Minimum**

For students receiving full-time financial aid, the minimum full-time load for fall, spring, or summer is 12 credit hours. For those not receiving financial aid, the full-time load is 12 credit hours for fall and spring, and 6 credit hours for the summer term.

**Graduating in a Reasonable Time**

In order to complete a program within the norm (2 years for an associate degree or 4 years for a bachelor degree), you need to enroll for 16-18 credits per semester.
(not including summer sessions and not including any remediation courses which may be required).

**CHANGES IN ENROLLMENT**

Once you have registered for classes you may find it necessary or desirable to change your schedule. Northern permits such changes if they take place within the time frame specified in the published catalog and/or schedule of classes; i.e., the first week of a regular semester or the first two days of a summer session. This activity usually involves dropping from one class and enrolling in another; however, you may wish to drop only one class or drop all classes. You should always discuss dropping or withdrawing from a course with your academic advisor as well as your financial aid advisor.

A special time limit for moving from one level of English, math, or foreign language is described in the section entitled “Vertical Transfer.”

**VERTICAL TRANSFER**

Northern recognizes that no diagnostic test (such as its COMPASS, ASSET, etc.) is foolproof in making a decision about which level of English or math is appropriate for any given student. For that reason, if you or your instructor find that you are in the wrong level of English, math, or Spanish during the first two weeks of a fall or spring semester, you may request movement to the next higher or lower level. This movement must take place by the end of the second week of instruction, and the gaining instructor must be willing to accept you into the new class. Note also that this policy does not allow you to move, for example, from an English course to a history course, only vertically within the same academic discipline. Vertical transfer during a summer session must take place by the end of the first week of the session. Contact the Registrar’s Office for assistance with vertical transfer.

**ENROLLMENT VERIFICATIONS**

Northern New Mexico College has authorized the National Student Clearinghouse to provide enrollment verifications. The National Student Clearinghouse can be contacted at:

- Web: [www.enrollmentverify.org](http://www.enrollmentverify.org)
- Mail: National Student Clearinghouse
  2300 Dulles Station Boulevard, Suite 300
  Herndon, Virginia 20171

Note that it is possible to verify only what you have done or are now doing, not what you intend to do. In other words, you may register in May or July for Fall courses; however, you cannot certify your enrollment for courses before the first day of class in any given term.

**ATTENDANCE**

You are expected to attend all meetings of courses in which you have enrolled. The opportunity to make up class work or examinations missed through absences is at the discretion of the instructor. Each instructor establishes attendance requirements for the course and informs students in writing at the beginning of the course by providing them with a copy of the course syllabus.
If you know that you will miss several class meetings because of unforeseen circumstances, you should inform the instructor (of each course) as soon as possible.

If you are funded through any outside agency, you may be subject to additional attendance requirements or reporting.

**Important:** Certain departments (e.g., Nursing) and certain courses have special policies on attendance which can be found in the handbooks for those departments and in their course syllabi.

**Administrative Withdrawals**

Although the College recognizes that students must exercise their responsibility to attend and satisfactorily complete courses, it also recognizes that sometimes circumstances come into play that prevent the proper exercise of that responsibility. When it is evident that such circumstances exist, the College will exercise its authority to administratively withdraw the student from courses. Some circumstances which would warrant this action on the part of the College might include a death or sudden serious illness in the immediate family, incarceration, or military activation. In such circumstances, the Registrar will exercise the responsibility for the student as soon as the situation becomes known.

Northern’s policy concerning military activation and deployment permits the Registrar, upon receipt of a copy of the student’s orders, to drop the student from all courses or, if requested by the student, arrange for Incomplete grades to be entered to the record (if appropriate). Our policy is to protect the GPA of such individuals who have been called to active military duty. This same policy covers firefighters activated in the exercise of their profession.

The College also recognizes other situations in which it must exercise its own authority to withdraw students from the College. Examples of such situations might include the failure by a student to complete the payment process, the falsification of admission documents, the failure to reveal previous attendance at other colleges/universities, or a serious violation of the Student Code of Conduct.

**Distance Education**

Northern uses Blackboard as its web-based course management system (LMS) available for traditional classroom, blended, and online courses. Students participate in an interactive relationship with their instructor throughout the semester via a secure site: Instructors post syllabi, lecture notes and class assignments; use email and discussion boards; utilize multimedia content; and conduct class meetings using audio/video technologies. Course assessments including quizzes and exams may be taken using Blackboard; however, instructors determine the proper assessment strategies for their courses.

Northern New Mexico College offers online courses as an alternative to the traditional campus experience. Individuals who have scheduling problems, work full-time, or live at a distance from either campus might want to consider taking an online class. Courses are completed electronically using a computer with Internet access. Online and blended courses are taught on a semester basis for college credit, and follow the
regular Northern course schedule. All Northern admissions and registration deadlines, policies, and procedures apply. Consult the College’s course catalog to determine what format best suits your learning style.

Northern New Mexico College has recently undergone a restructuring of its Interactive Video (IV) network. Using the most current technology, NNMC delivers the highest quality HD video and audio using advanced classroom collaboration tools. The remote user will experience a media-rich classroom necessary for engaging students who learn in a more visual and auditory manner. Interactive Video (IV) courses originate either from Española or El Rito campuses and can reach any designated remote site within New Mexico or the continental United States.

REQUIREMENTS FOR STUDENTS CONSIDERING ONLINE COURSES

- Familiarity with computers and navigating the internet. This includes the ability to complete tasks such as creating, moving, and copying files; installing software/web plug-ins; browsing the web; sending and receiving emails; and using various software programs.
- A computer operating system that meets the minimum technical requirements (see below)
- Familiarity with the Internet and browsing the web.
- A Northern email address, which will be provided when your admission application is processed. You can find it by visiting our website (www.nnmc.edu), clicking on MyNNMC, and following the link to Personal Information.

BLACKBOARD LOGIN INFORMATION

Access to Blackboard is available from your personal or campus computers by navigating to http://nnmc.blackboard.com.

Your login information consists of the following:
username = entire Student (Banner) ID, including all leading 0’s, and your
password = your date of birth (e.g., 122290 for a birth date of Dec. 22, 1990).

COMPUTER HARDWARE AND SOFTWARE REQUIREMENTS

As a general rule, if you have a computer purchased new within the last 3 years, you will probably meet the requirements below.

- **Operating Systems:**
  Windows XP minimum (Windows 7 preferred)
  Macintosh System 10.5 or higher
- **Processor:** 1GHz or higher
- **Memory:** 500 MB of RAM (1 GB recommended)
- **Hard Drive Space:** 25 GB free disk space for assignments
- **Browser:** Internet Explorer 8.0; Mozilla Firefox with Flash, and Java plug-ins installed
- **Modem:** High Speed DSL recommended
- **USB Flash Drive (2GB):** To back up/save your work and take it to any PC.
- **Headset with microphone & USB mini–cam** may be required for some online courses.
- **Software**: If you are enrolled in a course that requires specific software (such as Microsoft Word or Real Player) you will need to purchase the software for your computer, or use the computer lab in the Student Success Center on the Española campus. Northern does not provide course-specific software as part of the enrollment process.

- **e–Books (electronic textbooks)** are required for some blended/online courses; your access key can be obtained from either the Northern Bookstore or your instructor.

The Distance Education Department provides technical assistance to students using Blackboard. Please email distanceed@nnmc.edu, phone our Distance Education Department Support Line 505.747.5446 and visit http://distance.nnmc.edu for links to self-support resources.

### Undergraduate General Curriculum Requirements and Academic Policies

Every degree or certificate at Northern is structured to provide a certain minimum spread of knowledge and competency for our graduates. In general, if you receive a diploma in a certificate program from Northern, you will have been provided all the job skills and the minimal level of competency in English and mathematics that will be required to obtain entry-level employment in the field. If you earn a degree, your background will be much broader, with exposure to several different types of academic disciplines.

1. **Certificate requirements (minimum)**
   a. An English course which meets or exceeds the competencies of ENG 108N, Basic English I; and
   b. A math course which meets or exceeds the competencies of MATH 100N, Fundamentals of Mathematics; and
   c. Program course requirements

2. **Degree requirements**

   The following General Education spread are minimum requirements throughout all Associate of Applied Science and Associate of Engineering degree majors shown in this catalog. The standards for Associates of Art or Science are much more detailed.

   Communications, including ENG 111 6*
   Humanities 3**
   Math/Computer Science and/or Lab Science 6-7***
   Social/Behavioral 3
   Library Technology 1

   **Total = 19-20**

* Must include ENG 111 (English Composition 111)
** Must include HUM 100: FYE: History and Culture of Northern New Mexico
*** Six-seven credit hours in mathematics, computer science and/or laboratory sciences.
3. Health, Physical Education, or Recreation courses

Some degrees require a minimum of 1 credit. Any HPER activity course and/or DANC activity course, plus HSCI courses in nutrition, CPR, or First Aid/CPR may be used to satisfy this requirement—unless the course has been used to satisfy some other requirement within the same degree.

In order to facilitate your choice of appropriate courses to fulfill these General Education requirements for the applied science degrees, we have defined certain course disciplines from which courses may be chosen to satisfy general education requirements.

The following are discipline areas acceptable for Associate of Applied Science and Associate in Engineering degrees. Only courses from these breakdowns may be used to satisfy the discipline requirement for General Education electives in an applied science degree or Engineering (course numbers ending in an “N” may never be counted). For example, neither Education nor Criminal Justice are shown below; therefore, neither may be used as elective credits where any specific discipline allows “elective credit.” Also, note that although “Foreign Language” is listed under Communications, ENG 111 is the minimal acceptable course in this area for all degrees.

<table>
<thead>
<tr>
<th>COMMUNICATIONS</th>
<th>HUMANITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>English *</td>
<td>Art (theory only)</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>History</td>
</tr>
<tr>
<td>Speech</td>
<td>Humanities</td>
</tr>
<tr>
<td></td>
<td>Literature</td>
</tr>
<tr>
<td></td>
<td>Music (theory only)</td>
</tr>
<tr>
<td>MATHEMATICS *</td>
<td>Philosophy</td>
</tr>
<tr>
<td>MATH 130 or higher</td>
<td>Theatre (theory only)</td>
</tr>
<tr>
<td>*Excludes Literature courses and Creative Writing</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LABORATORY SCIENCES **</th>
<th>SOCIAL/BEHAVIORAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Astronomy</td>
<td>Anthropology</td>
</tr>
<tr>
<td>Biology</td>
<td>Economics</td>
</tr>
<tr>
<td>Chemistry</td>
<td>Geography</td>
</tr>
<tr>
<td>Environmental Science</td>
<td>Political Science</td>
</tr>
<tr>
<td>Geology</td>
<td>Psychology</td>
</tr>
<tr>
<td>Physics</td>
<td>Sociology</td>
</tr>
</tbody>
</table>

** In an AAS degree not requiring a specific laboratory experience, any approved math, science, computer, or engineering course will satisfy this requirement.
Northern’s General Education Common Core Offerings

For purposes of selecting appropriate courses to meet Northern’s Associate of Arts and/or Associate of Science and Northern’s baccalaureate degree requirements for the General Education Common Core, you will select courses from each area shown below.

Northern New Mexico College’s general education requirements reflect the values of the college and its faculty. The purpose of these courses is to help you achieve a foundation of knowledge that broadens and enriches your abilities to communicate, to think critically, to problem solve, and to broaden your world view regarding global awareness, human values, and social consciousness. These selections call for you to develop written and oral communication skills, problem solving skills, scientific, historical, cultural, and ethical thinking. Northern has added courses to the state-wide transfer common core which present you with a greater choice of electives. If you will be transferring these courses to another college/university, you may be required to verify acceptance of such courses at the gaining institution.

Northern added two general education requirements for all associate and baccalaureate degree programs in Fall 2012. One is First-Year Experience HUM 100, History and Culture of Northern New Mexico. The other is LT 101, Library Research Skills. Both are to be taken within your first 30 credit hours at Northern. Students transferring into Northern’s associate and baccalaureate degree programs beginning in Fall 2012 who have completed a minimum 30 credit hours of college level courses elsewhere are encouraged to take these courses but are not required to do so. If you choose not to take these courses, you must meet the credit-hour requirements with appropriate electives. If you have taken a three-credit-hour First Year Experience course at another college, it will transfer to Northern as HUM 100.

**AREA I: COMMUNICATIONS (9 CR)**

- **Required**
  - ENG 111 English Composition I
  - SPCH 130 Public Speaking

- **Elective**
  - ENG 112 English Composition II
  - ENG 116 Technical Writing

**AREA II: MATHEMATICS (3 CR)**

- **Elective**
  - MATH 145 Introduction to Probability & Statistics
  - MATH 150 College Algebra
  - MATH 151 Conceptual Mathematics *
  - MATH 155 Trigonometry
  - MATH 162 Calculus I
  - MATH 163 Calculus II
MATH 264 Calculus III
* Conceptual Mathematics will satisfy the mathematics requirement for all AA/BA/BBA/BM degrees.

AREA III: LABORATORY SCIENCE (8 CR)

Elective
ASTR 110/L  Introduction to Astronomy with Lab
BIOL 110/L  Current Topics in Biology with Lab
CHEM 110/L  Introduction to Chemistry with Lab
ES 112/L   Intro to Environmental Science I with Lab
GEOL 101/L  Physical Geology with Lab
GEOL 102/L  Historical Geology with Lab
PHYS 110/L  Introduction to Physics with Lab

This area can also include courses designed for students pursuing science majors: e.g., BIOL 201/L, CHEM 121/L, PHYS 121/L, etc.

AREA IV: SOCIAL/BEHAVIORAL SCIENCES (6–9 CR)*
You must select courses from at least two different discipline areas from the following:

ANTH 101/L  Physical Anthropology with Lab
ANTH 102  Intro to Social/Cultural Anthropology
ANTH 110  Indian Cultures of the Southwest
ANTH 207  Cultures of New Mexico
ECON 200  Macroeconomics
ECON 201  Microeconomics
GEOG 111  World Geography
HSS 311  Readings in the Social Sciences **
HSS 414  Humanity and Creativity **
HSS 421  History, Literature, Art & Philosophy **
PSCI 110  The Political World
PSCI 120  Contemporary Political Issues
PSCI 200  American Politics
PSCI 210  State and Local Government
PSCI 212  The American Presidency
PSY 105  General Psychology
PSY 210  Theories of Personality
PSY 229  Adolescent Psychology
PSY 230  Psychology of Adjustment
PSY 232  Abnormal Behavior
PSY 290  Developmental Psychology
PSY 370  Social Psychology
SOC 101  Introduction to Sociology
SOC 213  Deviant Behavior
SOC 216  Ethnic and Intercultural Relations
SOC 220  Social Problems
SOC 225  Marriage and the Family

Plus, topic courses with student advisor’s approval

**AREA V: HUMANITIES AND FINE ARTS (6–9 CR)**

HUM 100  History and Culture of Northern New Mexico

*You must also select course(s) from at least one other different discipline area from the following:

| ART 105 | Introduction to Art |
| ART 107 | History of Art I |
| ART 208 | History of NM Art & Arch. I |
| ART 211 | History of Art II |
| DANC 240 | Dance Appreciation |
| DANC 245 | Dance History |
| ENG 270 | Children’s Literature |
| ENG 262 | Literature of the Southwest |
| ENG/PIS 265 | Native American Literature I |
| ENG/PIS 266 | Native American Literature II |
| ENG 280 | Readings in Literature |
| ENG 290 | Study of Literature |
| ENG 294 | Mythology |
| FDMA 280 | History of Cinema |
| HIST 101 | Western Civilization I |
| HIST 102 | Western Civilization II |
| HIST 161 | History of U.S. to 1877 |
| HIST 162 | History of U.S. from 1877 |
| HIST 220 | Southwestern Women’s History |
| HIST 230 | Chicano Experience in the US |
| HIST 250 | American Indian History |
| HIST 260 | History of New Mexico |
| HUM 101 | Humanities I |
| HUM 102 | Humanities II |
| HUM 105 | Humanities and the Southwest |
| HUM 200 | Comparative Religion |
| MUS 103 | Music Hist & Lit I |
| MUS 105 | Music Appreciation |
| MUS 218 | Music Hist & Lit II |
| PHIL 110 | Intro to Philosophical Problems |
| PHIL 111 | History of Philosophy |
PHIL 220  Ethics
PHIL 250  Critical Thinking
PIS 200  Introduction to Pueblo Indian Studies
THE 120  Introduction to Theatre I
THE 130  History of Theatre

* If your major is in the area of the Humanities/Fine Arts, unless otherwise regulated by a given department, you should select 9 hrs from Area V and 6 hrs from Area IV; if in the Social/Behavioral Sciences, you should select 9 hrs from Area IV and 6 hrs from Area V. Consult your major advisor. In any case, you must complete a minimum spread of 15 credit hours between areas IV and V.

** Students in associate degree programs are advised that upper-division courses used to satisfy any of these requirements are not covered by financial aid.

AREA VI: LIBRARY TECHNOLOGY (1 CR)
LT 101  Library Research Skills

TOTAL required for associate degrees = 36 semester hours

AREA VII: FOREIGN LANGUAGE (3 CR) (Baccalaureate degrees only)

TOTAL required for baccalaureate degrees = 39 semester hours*

An additional new bachelor's degree requirement that does not add hours to the General Education Core is the Writing Intensive Course requirement. Writing Intensive Courses (which will be designated as WIC) are upper division writing courses that focus on the writing process within specific disciplines. All bachelor degree seeking students are required to take at least one Writing Intensive Course in their declared field of study where they will be given the opportunities to learn the appropriate writing genres for the field, the guidelines of their discipline’s writing format, and complete professional writing assignments using models of writing from within their chosen field. The WIC in each bachelor’s degree program is a course that is already part of the program requirements so it does not add to the total number of General Education credits required.

FOR PURPOSES OF MEETING GRADUATION REQUIREMENTS, courses that appear on Northern’s General Education Common Core list and that also appear as part of your program/major core will be used to satisfy only major core requirements. For example, if your major requires ECON 200, you may not count this course to also satisfy General Education Common Core requirements.

Programs and their courses listed in this catalog are subject to change through normal academic channels. New courses and changes in existing course work are initiated by the responsible department, approved by the faculty curriculum committee and by the Faculty Senate.

If you have any questions concerning the Application of the General Education Common Core, please check with your academic advisor to avoid signing up for what might be an inappropriate course.
Grading System

Following are the allowable grades and associated grade points:

- **A+** 4.33 Outstanding
- **A** 4.00 Outstanding
- **A-** 3.67 Outstanding
- **B+** 3.33 Above Average
- **B** 3.00 Above Average
- **B-** 2.67 Above Average
- **C+** 2.33 Average, Passing
- **C** 2.00 Average, Passing
- **C-** 1.67 Average, Below Passing*
- **D+** 1.33 Below Passing*
- **D** 1.00 Below Passing*
- **D-** 0.67 Below Passing*
- **F** 0.00 Not Passing

Letter grades are issued by instructors to indicate the quality of work done; instructors are not required to issue +/- grades.

*Grades of C- and below do not count toward graduation and do not meet the criteria for satisfying prerequisites.

From Fall 2008 through Fall 2009 remedial MATH 100N and 102N used letter grades with a suffix of “N.” These grades, such as a BN or a CN were not used in computing a GPA. As of Spring Semester 2010, these grades are no longer used.

The following grade entries are not options which you may choose at the time of registration. They are attached to the course in which you enroll:

**CR–Credit:** a passing grade which gives credit for the course but is not used in computing your grade point average. Unless you indicate otherwise at the time you register for a course, we assume that a course is desired for “credit.”

**NC–No Credit:** a failing grade, but one which is not used in computing your grade point average. A grade of NC does not meet the requirements for meeting prerequisites.

**TR:** a grade used to show that credit has been accepted in transfer for a course taken at other than Northern or is the entry posted in cases of successfully passing a locally-developed exam.

The following grade entries have no effect on your cumulative grade point average nor do they count towards credits earned:

**AU–Audit:** a grading option which you may choose for any course in which you enroll, but you must indicate this at the time of enrollment or make a change from credit to audit or audit to credit, either by the end of the second week of a regular semester or by the end of the first week of a summer session.

**W–Withdrawal:** records the fact that you officially withdrew from a specific course at some time after the period established for getting a refund (usually the end of the third week of a regular semester). “Officially” describes a process in which you withdraw online (within given deadlines). Failure to “officially” withdraw from a course...
results in an automatic failing grade of “F” being assigned to the course. You may not attempt to withdraw from a course after the deadline or if a final examination has already been given for the course. Check each semester’s Schedule of Classes for a detailed breakdown on withdrawal deadlines for those courses which run for less than 16 weeks. Refer any questions to the Registrar.

In certain circumstances, instructors can exercise the right to withdraw students from their courses for failure to attend/having stopped attending. Do not count on this happening—it is your responsibility to withdraw from a course to avoid getting a failing grade.

I—Incomplete: records a course for which, because of serious reasons beyond your control (e.g., you had an automobile accident on the way to the final exam, or you were hospitalized in the last couple of weeks of the term), you were not able to complete that last small portion of the course requirements. By mutual, signed agreement between you and the instructor, and subsequently accepted by the Registrar, you will have up to one year to complete that small portion of the course still lacking. The deadline for completion will usually be one to three months rather than a full twelve months. These deadlines are carefully monitored and, if the grade of “I” has not been promptly removed, the Registrar administratively changes the grade to a failing grade (“F”). Such an administratively-assigned grade cannot later be changed by the original instructor of the course.

The instructor of the course must submit a request to give an “I” grade at the time the instructor turns in the final grade sheet for the course. When the instructor converts the “I” into a regular grade, your transcript will reflect the grade, its grade points, and an adjusted cumulative grade point average.

NR—Not Recorded: used to designate that course for which the instructor failed to turn in the grade on a timely basis. Grades must be run as soon as possible after the deadline for submission, and an “NR” is used to clear those courses for which no grades have been received. This is the only way to get grades entered without undue delay, although it does not often happen that the “NR” is used. “NR” grade entries not changed within 30 days are administratively changed to failing grades.

GRADE CHANGES

A change in grade or a correction of an improperly reported grade may normally be made only by the originating instructor who must complete the proper form (which includes submitting justification for the change), obtaining the required signatures of approval, and delivering the completed form to the Registrar. If you wish, as a student, to challenge a grade, refer to the section of this catalog below dealing with appeals of grades. If the grade you question has been issued by an instructor who is no longer employed by Northern, you should contact the chairperson responsible for that department.

No requests for a grade change or correction will be accepted after one year has passed from the initial assigning of the grade by the instructor. Since Northern does not generally mail grades (see section “Issuance of Grades”), you are responsible for accessing your records online to determine any discrepancy. If anything seems to be incorrect about the grade, it is your responsibility to promptly alert the Office of the Registrar.
GRADE APPEALS

Only you, the affected student, may challenge or appeal a grade which you feel is improper or incorrect. You have twelve months from the date when the grade was assigned and recorded in your records to complete the appeal process. To initiate the appeal, you must complete the following steps:

1. Complete the Student Petition for Grade Appeal Form available on the Registrar’s webpage.

2. Discuss the situation with the instructor who gave the grade. If the matter is not resolved to your satisfaction, you may appeal to the instructor’s immediate supervisor (usually the department chairperson, although some departments will have an intermediary step, such as a program director).

3. Provide the responsible department chairperson with a written summary of the situation and a detailed, specific statement of what you want. If the matter is not resolved to your satisfaction by the department chairperson, you may appeal to the Scholastic Standards Committee, which is a faculty committee.

4. Provide the Scholastic Standards Committee chairperson with a written summary of the situation and a detailed, specific statement of what you want. The Committee recommendation will be forwarded to the Provost for appropriate action.

Note: Please get all signatures on this form in the appropriate place before the Standards Committee will take any action. Upon receipt of this form, the Standards committee chair will schedule your appeal time and date. The Chair of the committee will not participate, influence, or vote on the appeal.

GRADE POINT AVERAGE (GPA)

You may calculate your GPA by dividing the number of grade points earned by the total number of credit hours generating those points, excluding any course for which a grade of W, NC, CR, AU, or I has been recorded and any course which was accepted by Northern in transfer. Your GPA is based only on courses taken at Northern, not on course grades transferred to Northern from another college or university.

ISSUANCE OF GRADES

All grades are available online. Northern does not mail mid-term and final grade reports.

ACADEMIC FORGIVENESS

Northern recognizes that sometimes students are not academically prepared to start college, or are perhaps not emotionally or socially prepared, and sometimes receive failing grades or have to withdraw in their first term(s). The results may follow them throughout their academic careers and even affect them to the point that they drop out of college or are denied financial aid. Northern has, therefore, adopted a policy which allows those who fall into this category to request that such grades be deleted from their academic transcript. Students who meet all of the criteria listed below may submit a Request for Academic Forgiveness form to the Office of the Registrar, who is responsible for administering this policy.

The criteria for exercising Academic Forgiveness:

1. The term(s) for which you seek forgiveness must have happened at least three
years prior to your formal request for forgiveness, and your semester GPA at that time for each term involved must have been below 2.00; and

2. The terms involved are limited to your first, or first two, terms at Northern; and

3. Since returning to Northern, you must have completed at least 12 credit hours (spread over one or more terms) and must have a minimum cumulative GPA of 2.00 over those courses (completed after the period for which forgiveness is sought) before applying for forgiveness; and

4. You must not yet have graduated from Northern.

The result of achieving Academic Forgiveness will be that the term(s) and all associated courses in that term(s) will no longer appear on your transcript, although a notation will appear on the transcript to the effect that “Academic Forgiveness was granted for (whichever term was appropriate).” A separate paper trail will be maintained to track the action taken.

**REPEATING COURSES**

You may re-enroll, without special permission, for any course which you have taken at Northern. Each course enrollment and its grade will appear on your transcript, but only the last grade earned will be used to calculate your cumulative GPA and only the last grade earned will be counted toward graduation.

Some courses, however, are already designed to permit a certain number of repeats (i.e., a HPER course, an ART-studio course, etc.) without affecting your cumulative GPA. For such repeatable courses, each enrollment and its grade will be counted, not just the last.

If, because of curricular changes that take place, the repeat of a course has a different credit hour value, the value of the repeat course (the latest) will be used to calculate your cumulative GPA and to satisfy graduation requirements.

If you do not pass a course which is a prerequisite to enrolling in another, higher level course, you must repeat the prerequisite course before enrolling at the higher level. An example of this would be completing ENG 109N with a grade of CR before being able to enroll in ENG 111.

**Please note:** certain forms of financial aid will not provide assistance for repeats of courses which have previously been successfully completed. Compliance with such regulations is your responsibility if you receive such assistance.

**SCHOLASTIC STANDINGS**

Scholastic standing will be determined at the close of each semester and an appropriate entry posted to your transcript. In the absence of any other notation, you may assume that you are in Good Standing.

Your end-of-term standing (Good Standing, Dean’s List, Probation, or Suspension) is based on the total number of semester hours attempted and the GPA achieved for those credit hours and is permanently recorded on your transcript.

Regulations governing academic probation and suspension are based on the 2.00 minimum cumulative GPA which is required to graduate from any certificate or degree program offered by Northern. A semester of course work with less than a 2.00 GPA results in a deficiency which must be removed in succeeding semesters if you are to
graduate or successfully transfer to another college or university.

GOOD STANDING

You are considered to be in Good (academic) Standing if your cumulative GPA is at or above the 2.00 level.

THE DEAN’S LIST

At the end of each fall and spring semesters, the Dean’s List is published as the official recognition of outstanding academic accomplishments. Only full-time students who are pursuing a declared major and who have earned a semester GPA of at least 3.50 over a minimum of 12 credit hours (excluding any courses labeled as remedial) are eligible for this honor. The entry Dean’s List will be posted to your transcript, and you will receive a letter of congratulations from the College Provost.

Note: The following policies regarding probation and suspension relate to academic probation and suspension, not financial aid probation and suspension. For financial aid policies, see pages 46-52.

ACADEMIC PROBATION

If, at the end of any term, your cumulative GPA, based on at least 16 credit hours of course work attempted at Northern, fails to equal at least a 2.00, you will be placed on Academic Probation.

Probation is not a penalty, but an emphatic warning that the quality of your work must improve if you are to attain the GPA necessary to graduate from Northern. You may not appeal probation.

If you are notified that you are on Probation, you may continue to enroll, but you must maintain a semester GPA of 2.00 or higher, and you will not be permitted to enroll in more than 12 credit hours of course work during a regular semester or more than 6 credit hours during a summer session without special permission from the Provost. As you continue to raise your GPA, your status will be recorded as Continued Academic Probation until you have achieved a cumulative GPA of 2.00 or higher and achieve Good Standing.

ACADEMIC SUSPENSION

If, at the end of any term, your cumulative GPA, based on at least 36 credit hours of course work attempted at Northern, fails to equal at least a 2.0, you will be placed on Academic Suspension, which may or may not have been preceded by a period of Academic Probation or Continued Academic Probation.

The duration of an initial suspension is one semester; for subsequent, repeat suspensions, one full year. If you have registered early for a succeeding term and then are put on suspension, the Registrar’s Office will delete your enrollment until after you have submitted an official appeal. Under these conditions, you will have no guarantee of enrollment in the course which will have been dropped.

At Northern, Suspension is not viewed as a penalty for failure, but rather as an opportunity to deal with the pressures of life and school (which may have contributed to the low grades that brought on a period of Suspension) prior to re-applying for admission and a chance to continue your education.
SUSPENSION APPEAL

*If you have been placed on Academic Suspension, you may appeal such status by:*

1. Providing the Director of Admissions with a letter of appeal, stating what caused the low grades which resulted in suspension and what you plan to do to correct the situation. If the Director of Admissions accepts the appeal, you will be re-admitted to the College on Academic Probation and may be restricted in terms of the number of hours for which you may enroll and/or in terms of specific courses which you must take or may not take.

2. If the Director of Admissions denies your appeal, you may appeal to the Faculty’s Scholastic Standards Committee, providing that Committee with a written summary of the situation and a detailed, specific statement of what you want. If the Committee recommendation is in your favor, it will send its recommendation through the Faculty Senate to the Provost for approval and forwarding to the Director of Admissions for action.

Graduation

GENERAL REQUIREMENTS

In order to be eligible to receive a degree or certificate from Northern, you are responsible for meeting the following requirements as well as meeting specific admission and course requirements listed under the major you have chosen to pursue.

1. An overall cumulative GPA of 2.0 or higher and completion of all required course work with no grade below a “C.” Effective Fall 2008, with the adoption of +/- grades, a course with a grade of C- cannot be counted toward graduation. Certain programs with professional accreditation may require special or additional standards for graduation.

2. You may not count toward degree requirements any course considered to be remedial in nature (i.e., usually bearing a suffix of “N,” such as MATH 100N). Certain certificate programs, however, may allow you to count a limited amount of remedial work against graduation requirements in the area of General Education.

3. You may not count a course more than once for any requirements for a certificate, degree, major, or minor. This includes courses required for a major that might also be on the list for General Education courses, courses in a minor that are also required for a major or vice versa, etc.. One exception is that General Education as well as core courses in a degree program may count toward a double major, as long as you have taken all of the other distinct courses in the second major. In addition, students pursuing a second degree may use the same General Education and required major core courses for both degrees as long as you take an additional 30 new hours approved by the Department chair of the second department.

4. Residency for Graduation: for a certificate or associate degree program, you must have earned at Northern at least the last 15 credit hours towards an associate degree or certificate; for a baccalaureate degree, the minimum is the last 30 credit hours. Any exception to this must be cleared by the Registrar before your last term at Northern starts. Failure to comply may be grounds for denying acceptance of your courses in transfer, thus delaying graduation.

5. **Upper Division Coursework Requirement:** Students must complete 40 credit
hours of upper division coursework for a Baccalaureate degree. Of the 40 credit hours, 20 credit hours are to be in the major.

6. You must complete an online Graduation Application as well as a Petition to Graduate form. This includes payment of the required graduation fee, obtaining sign-offs by your academic advisor and department chair, and submission of the petition through various college departments for signatures, and finally to the Office of the Registrar. Applications are due approximately a month after registration begins for your last term, in the term prior to the one in which you plan to graduate. Check the Academic Calendar for the exact deadline. The Registrar will conduct a further review of your records and, if the Registrar is satisfied, you will receive a letter which will confirm your candidacy for graduation.

7. If you start a program and continue uninterrupted, you are entitled to graduate under the terms of the degree plan in the catalog in effect at the time of your initial written declaration of the major or under any later issued catalog, whichever is more beneficial to you.

If, however, you interrupt your attendance by more than two (2) regular semesters of non-attendance (e.g., Fall 09 and Spring 10 or Spring 10 and Fall 10), you will be bound by the terms of the catalog in effect at the time of your latest re-admission to the College.

8. You cannot graduate if you owe a debt of any kind to the College or if your undergraduate admission status is incomplete.

9. Your diploma(s) will reflect the legal name under which you have been admitted to Northern. If you wish any other name to appear, you will have to document a legal change of name (as described in the section titled “Change of Name”) prior to graduation.

10. Replacement diplomas will be provided for a fee of $7.50 each, but only if the diploma was awarded since 1999. Northern cannot produce a diploma for any period earlier than 1999.

11. Graduation takes place at the end of the semester in which all program requirements and financial requirements have been met, even though there may not be a formal graduation ceremony scheduled for that semester. In other words, you may have completed all of the required courses in a prior term, but if you haven’t paid the graduation fee and/or completed the processing during the same term in which you completed the course work, you won’t graduate until the end of the term in which the last requirements are met (payment, for example). If you should find yourself in this situation, you must submit a Graduation Application and Petition-to-Graduate within two years of having completed all of your program requirements.

**GRADUATION WITH HONORS**

You will meet the requirements for graduating with honors if you have completed at least 50 percent of your program requirements here at Northern. Your transcripts and diploma will reflect that honor within the following guidelines:

- **Cum Laude**
  
  3.50–3.74 cum. GPA

- **Magna Cum Laude**
  
  3.75–3.99 cum. GPA

- **Summa Cum Laude**
  
  4.00 cum. GPA
GRADUATION WITH MENTION OF HONOR SOCIETY MEMBERSHIP

If you are a member in good standing in Northern’s Alpha Iota Sigma chapter of Phi Theta Kappa, the international honor society for two-year colleges, you will be entitled to wear the Society's honor regalia at graduation. See the chapter advisor for information on membership and honor regalia.

ALUMNI STATUS

Once you have graduated from a program, you become a Northern alum. This is an important role: satisfied graduates make the best recruiters for any college. You satisfy this role by mentioning where you received your degree and recommending Northern to family, friends, and co-workers as well as by becoming active in the Northern Alumni Association.

As an alum, it is important that you stay in touch with Northern and keep your information current for our records.

Tuition & Fees

Tuition, fees, and other charges are subject to change at any time by the College Board of Regents.

NEW MEXICO RESIDENTS                  ALL TERMS
All courses (1-4x)                      $114.50/credit

NON–NEW MEXICO RESIDENTS              ALL TERMS
All courses (1-4x)                      $425.45/credit

Tuition charges are based on enrollment from 1-12 credits. When your enrollment exceeds 12 credits, you are not charged for those from 13-18; however, any credits over 18 result in tuition charges again being assessed.

STUDENT FEES

Online Access Fee: $35 charged to all students who are taking more than 3 credits
Athletic Fee: $50 charged to all students who are taking more than 3 credits
Activity Fee: $3 per credit hour (more than 12 credit hours = $36)
Student Service Fee: $10 per credit hour (more than 12 credit hours = $120)
IT Fee: $20 per credit hour (more than 12 credit hours = $240)

NEW FEES (APPLIES TO ALL STUDENTS)

Building and Equipment renewal fee .......... $10.00 per credit hour
Library student fee ..........................$1.25 per credit hour
Security fee .................................$1.25 per credit hour

Northern used to allow non-New Mexico residents in-state tuition if they were enrolled for 6 credits or less. Recently passed legislation no longer allows that to happen.
OTHER FEES

Registration Fee (non-refundable; assessed each term) ........ $25.00
Late Registration Fee (non-refundable; added to regular fee) .. $35.00
Payment Plan Fee ........................................ $25.00
Payment Plan Late Fee ..................................... $10.00
Graduation Fee ............................................. $100.00
Additional diplomas or replacement diplomas ............... $7.50
Unofficial Transcript Fee (per transcript) ..................... $2.00
Official Transcript Fee (per transcript) ......................... $5.00
ID Card replacement ....................................... $5.00
Lab/Course Fee (per course) ................................ $75.00
CPR Fee ..................................................... $27.00
Course Fee Field Experience ................................ $50.00
Fingerprinting Fees (one-time fee) ............................ $20.00
Background Check Fee (one-time fee): ......................... $65.00
Capitol Challenge Fee ...................................... $40.00
Standard Nurse Testing Fee ................................ $112.50
Institutional Testing Fee (LDCE Exam) ......................... $20.00
Capstone Test-Business .................................... $25.00
Placement (COMPASS) Retesting Fee ......................... $20.00
GED Testing (per test) ..................................... $20.00
In-house examinations (per course) .......................... $20.00
CLEP/DSST examination (per course) ...................... $15.00

The graduation fee of $50 is a flat fee which covers costs of graduation, such as the diploma, diploma cover, honor cords, etc. It does not include the cost of cap and gown. Additional diplomas in the same fiscal year (July 1–June 30) are $7.50 each.

ESTIMATED EXPENSES FOR NEW MEXICO RESIDENT PER SEMESTER

Tuition: see pertinent section about resident vs. non-resident on page 36.
Books, Supplies, and Equipment: ....................... $600.00
Living Expenses/Other: ............................... $650.00

SPECIAL ASSESSMENTS

In the event of damage to College property, the College reserves the right to charge those responsible for replacement or repair costs.

PAYMENT POLICY

All charges incurred in connection with college attendance are payable in advance of the services rendered. Tuition, fees, and other charges are subject to change at any time by the Northern New Mexico College Board of Regents.

Once you have registered for a class, you are liable for payment in full unless you
drop the class within the period designated for a full (100%) refund. Failure to pay will result in disenrollment. Check the Course Schedule or MyNNMC for exact disenrollment dates and other deadlines for each semester.

Northern has a Payment Plan which you can automatically access by paying at least 10% of the total charges at the time you register, including the $25.00 service charge and signing up for the Payment Plan. For summer sessions, there will be two installments due on 15th of each month; for fall and spring semesters, there will be three installments due on the 15th of each month. When you enter into the agreement, you will be charged a fee of $25.00. If your payment(s) is late, you will be charged a $10.00 late payment fee.

You are responsible for payment of all financial obligations when due. If you fail to do so, there will be sufficient cause to: 1) prevent further registration; 2) withhold academic records, including transcripts and diplomas; and 3) take disciplinary action including suspension or dismissal.

The Bill+Payment System is a secure site. You can access the Bill+Payment System by clicking on the link after logging into MyNNMC (upper left hand corner of the Northern’s homepage). There you can:

1. View your tuition and fee charges for the term.
2. Make an online payment using your debit card, credit card, or electronic check.
3. Enroll online for a payment plan (Note: A $25 service charge is assessed and due at time of enrolling in a payment plan; a late fee of $10 will be assessed if the payment plan amount is not paid by the due date.)
4. Sign up for electronic refund of your financial aid or any credit balances on your student account. All refunds will be delivered via Direct Deposit.
5. Authorize a parent or third party access to your student account information to make an online payment or enroll online for a payment plan on behalf of the student.
6. Receive automatic emails sent to you and/or an authorized third party when payments are due or a new statement is posted. Note: You must activate your NNMC email account. Instructions are available at http://my.nnmc.edu

Personal checks submitted for any fees must have your student ID number written on them. If you prefer to not have your student ID on your check, you may submit payment by cashier’s check, money order, or cash. The cashier will write your student ID number on checks if you have not already done so.

Students expecting payment by a third party must turn in authorization documentation to Student Billing a minimum of 2 weeks prior to the class start date.

OTHER DEADLINES

Departments that offer assistance grants for special programs must turn in authorization documentation to Student Billing a minimum of 2 weeks prior to the class start date.

Tuition waivers for faculty and staff must be received in the Business Office a minimum of 2 weeks prior to the class start date. Note: Faculty and staff are responsible for paying 100% of all required fees and books. You may choose to set up a payment plan to pay these fees or make payments via payroll deduction. Otherwise fees must be paid in full when you register.
Failure to submit authorizations, pay in full or enroll in a payment plan in a timely manner will result in disenrollment. Disenrollment is done on a daily basis.

SOME EXCEPTIONS

Senior Citizens

1. If you are age 65 and above and are classified as a resident of New Mexico, you will be charged $5.35 per credit hour if you enroll for 6 credit hours or less in 100 to 200-level courses. If you enroll for more than 6 credit hours in such courses, charges for credit hours in excess of 6 will be charged at the regular rate of $100.45 per credit.

2. You will be charged $20.40 per credit hour if you enroll for 6 credit hours or less in 300 to 400 level courses. If you enroll for more than 6 credit hours in such courses, charges for credit hours in excess of 6 will be charged at the regular rate of $100.45 per credit. New Mexico Senior Citizens are subject to all regular student fees.

Note: Senior Citizens are responsible for paying 100% of all required fees. If enrolled in more than 3 credit hours, you will be charged a $25.00 online access fee.

COLORADO RECIPROCITY

The states of New Mexico and Colorado have entered into an agreement which permits citizens of either state to attend the other state’s colleges at in-state tuition rates. There are some restrictions. For example, Northern will permit any Colorado resident to be admitted and enroll under the terms of this agreement, limiting the privilege in only one program (Nursing), for which no more than three Colorado residents may be enrolled at any one time; Colorado restricts this reciprocity to New Mexico residents attending only those colleges near the New Mexico/Colorado border. Check with the Admissions Office to see if you are eligible.

If you are a resident of Colorado and maintain your Colorado residency while attending Northern, you may be eligible to enjoy in-state tuition rates if you enroll for not less than 15 credits per regular term. Check with the Admissions Office at the time you are admitted and/or each term when you register for classes.

Note: If you are admitted and register under this basis, you will not be eligible to claim New Mexico residency until one full year has passed since you ceased enrollment under the reciprocity agreement.

If you are granted this waiver, it is applicable to fall and spring terms only.

WESTERN UNDERGRADUATE EXCHANGE (WUE)

New Mexico is one of several states which have entered into an agreement which allows students to attend college in another state at a rate of tuition which is between in-state and out-of-state tuition. This is designed primarily to allow a citizen to pursue a degree which is not offered in his own home state but which is offered in another state which is signatory to the agreement.

If you are a resident of one of the following states, you may be eligible to enjoy a tuition rate ($150.68 per credit) which is 150% of the in-state rate: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, North Dakota, Oregon, South Dakota, Utah, Washington, or Wyoming.

To use this benefit, you must clearly state your intention to do so on your Application for Admission form [there is a box to check on the form]. Check with the Admis-
sions Office each time you register for classes. You must register for at least 15 credit hours to use this benefit.

Note: If you are admitted and register under this basis, you will not be eligible to claim New Mexico residency until one full year has passed since you ceased enrollment under the reciprocity agreement.

If you are granted this waiver, it is applicable to fall and spring terms only.

DETERMINATION OF RESIDENCY STATUS

A. At time of first admission. A person’s residency classification for tuition purposes shall be determined at time of admission and must be completed by the census date of that first enrollment in a given public postsecondary educational institution. A person not meeting the residency requirements shall be classified as a non-resident for purposes of tuition charges. The student’s classification at time of admission remains in effect unless the individual is re-admitted to the institution or until the individual petitions to become a New Mexico resident.

B. Petition for resident tuition classification. Once determined a non-resident at the time of census date, a student can petition to be classified as a New Mexico resident by completing the Petition for resident tuition classification form (see Paragraph (3) of Section B of 5.7.18.12 NMAC, procedure to petition for resident tuition classification).

[5.7.18.8 NMAC–Rp, 5.7.18.10 NMAC, 8/30/2007]

REQUIREMENTS TO ESTABLISH NEW MEXICO RESIDENCY:

To become a legal resident of New Mexico for tuition purposes each of the following requirements must be satisfied:

A. Twelve month durational requirement. A person must physically reside in New Mexico for the twelve consecutive months immediately preceding the term for which the resident classification is requested.

B. Financial independence requirement. Only persons who are financially independent may establish residency apart from parents or guardians. A student cannot be approved for residency who is financially dependent upon his or her parents or legal guardians who are non-residents of New Mexico. Dependency will be determined according to the 1954 Internal Revenue Service Code, Section 152 and is always based on the previous tax year for residency purposes. If under the age of 23 at the time the student applies for residency, a copy of his/her parents’ or guardians’ 1040 or 1040A U.S. income tax form for the previous tax year is required. If the student is shown to be a dependent on this tax form, he/she will not be considered financially independent or eligible for residency during the current year.

C. Written declaration of intent requirement. The student or person must sign a written declaration of intent to relinquish residency in any other state and to establish it in New Mexico.

D. Overt acts requirement.

(1) Overt acts are required to evidence support of the written declaration of intent to establish permanent residency in New Mexico. Any act considered inconsistent with being a New Mexico resident, such as having a valid driver’s license from another state, will cause the request for resident classification to be denied. The required overt acts are evidence of any two of the following:
(a) the applicant is financially dependent, a copy of the parent or guardian’s previous year’s income tax return showing the applicant as a dependent and the parent’s address as New Mexico; or

(b) a New Mexico high school transcript issued in the past year confirming attendance at a New Mexico public or private high school within the past twelve (12) months; or

(c) a transcript from an online high school showing a New Mexico address confirming attendance within the past twelve (12) months; or

(d) a New Mexico driver’s license or ID card with an original date of issue or a renewal date issued prior to the first day of the term or semester; or

(e) proof of payment of New Mexico state income tax for the previous year; or

(f) evidence of employment within the state of New Mexico; or

(g) New Mexico vehicle registration; or

(h) voter registration in New Mexico; or

(i) proof of residential property ownership in New Mexico; or

(j) a rental agreement within New Mexico; or

(k) utility bills showing the applicant’s name and a New Mexico address; or

(l) other evidence which would reasonably support the individual’s intent to establish and maintain New Mexico residency.

(2) The department recognizes that there may be circumstances in which a student would not be able to fulfill the requirements of an overt act as listed in this section, such as: 1) individual is physically disabled and does not have a driver’s license, or 2) individual is a convicted felon and therefore cannot vote, etc. In instances such as these, the institution will afford the student an opportunity to provide other documentary evidence or reasonable explanation which demonstrates that permanent residency in New Mexico has been established by the student.

E. Exceptions to the twelve (12) month requirement. If a student has met the requirements of one of the following exceptions, and is granted residency status, the student shall continue to be classified and reported as a resident for subsequent continuing enrollment.

(1) An individual married to a legal resident of New Mexico and providing appropriate evidence shall not be required to complete the 12-month durational requirement but must satisfy all other requirements listed in Subsections B, C, and D of 5.7.18.9 NMAC.

(2) Any person, their spouse and dependents who move to New Mexico or who now live in New Mexico and who provide appropriate evidence that they work in a permanent full-time position or practice a profession or conduct a business full-time in New Mexico, shall not be required to complete the 12-month durational requirement but must satisfy all other requirements listed in Subsections B, C, and D of 5.7.18.9 NMAC.

(3) Any person entering the active [military] service of the United States while a resident of New Mexico and who enters a state institution of postsecondary education in New Mexico after separation from such service may be classified as having been a legal resident in New Mexico during the time spent in the service provided they:
(a) have not while in the service done anything (such as voting in another state) to show abandonment of their New Mexico residency;
(b) have not established residence in some other state subsequent to being separated from service;
(c) return to New Mexico within one year after separation from service with the intention of maintaining this state as their legal residence;
(d) are not a dependent minor with parent(s) or guardian(s) whose place of residence classifies him or her as a non-resident of New Mexico.

(4) Any person, their spouse and dependents, who move to New Mexico for retirement purposes, and who provide appropriate evidence of retirement shall not be required to complete the 12-month durational requirement. They must, however, satisfy the other requirements listed in Subsections B, C, and D of 5.7.18.9 NMAC.

5.7.18.10 WAIVERS

If a student has met the requirement of one of the following waivers, the student shall continue to be considered a non-resident for reporting purposes but will receive the benefit of in-state tuition rates. In receiving such a waiver, the student does not become eligible for state-funded student financial aid, unless the regulations for a particular aid program allow for such eligibility.

A. American Indian nations, tribes and pueblos. All out-of-state members of an American Indian nation, tribe, and/or pueblo located wholly or partially in New Mexico, regardless of the residence of the member prior to acceptance at a post-secondary educational institution, shall be eligible to pay the in-state tuition rate. These include members of the following tribes or pueblos: Navajo Nation, Jicarilla Apache, Mescalero Apache, Taos Pueblo, Picuris Pueblo, Ohkay Owingeh, Santa Clara Pueblo, Nambe Pueblo, San Ildefonso Pueblo, Pojoaque Pueblo, Tesuque Pueblo, Cochiti Pueblo, Jemez Pueblo, Santo Domingo Pueblo, San Felipe Pueblo, Zia Pueblo, Santa Ana Pueblo, Sandia Pueblo, Isleta Pueblo, Laguna Pueblo, Acoma Pueblo, Zuni Pueblo, and the Ute Mountain tribe.

B. Armed forces. Any person, their spouse or dependent child, not otherwise entitled to claim residence, who is a member of the armed forces of the United States or armed forces of a foreign country assigned to active duty in the state of New Mexico, will be assessed in-state tuition rates.

(1) Assignment to active duty within New Mexico must be certified by the military person’s commanding officer upon the student’s initial enrollment. Such students may continue paying resident rates for as long as they attend consecutive semesters at the same institution.

(2) Pursuant to Section 21-1-4.5 NMSA 1978, a spouse or child of an active member of the armed forces who dies or is killed becomes a resident of New Mexico within sixty (60) days of the date of death.

(3) Pursuant to Section 21-1-4.5 NMSA 1978, if an active member of the armed forces is stationed outside New Mexico following assignment to duty in New Mexico, and the member’s spouse or child has established residence in New Mexico and registers a letter of intent to establish and continue residing in New Mexico, the spouse or child shall be assessed in-state tuition rates.
C. National Guard. Pursuant to Section 20-4-14, NMSA 1978, an active member of the National Guard and the member’s spouse and children shall be deemed in-state residents for purposes of determining tuition and fees at all state institutions of higher learning.

D. Summer session. During summer sessions, non-resident tuition may be waived according to the institution’s tuition policy.

E. Certain Texas residents. Pursuant to Section 21-1-3D, NMSA 1978, for the purposes of tuition payment and budget and revenue calculations, the board of regents of any post-secondary, state educational institution, as defined in Article 12, Section 11 of the constitution of New Mexico (specifically, NMHU, ENMU, NMSU, or WNMU), may determine that any Texas resident who resides within a (one hundred thirty-five) 135 mile radius of that institution may qualify for in-state tuition rates.

F. Colorado and Arizona reciprocity. Tuition reciprocity participants from Colorado and Arizona shall be selected by eligible institutions to pay in-state tuition rates based on criteria set forth by each eligible institution. The department will notify each eligible institution of the maximum waivers allocated on an annual basis.

G. Athletic scholarship recipients. Pursuant to Section 21-1-3E, NMSA 1978, for the purposes of tuition payment and budget and revenue calculations, any student (U.S. citizens and foreign nationals) receiving an athletic scholarship from a post-secondary educational institution set forth in Article 12, Section 11 of the Constitution of New Mexico (specifically, UNM, NMSU, NMHU, ENMU, [or] WNMU, or NNMC) may qualify for in-state tuition rates.

H. Competitive scholarship recipients. Any student participating in this program shall be recognized as a competitive scholar and reported as such, unless the student petitions for and is granted residency status.

I. Graduate assistants, including research and teaching assistants, employed at least one-fourth time (10 hours weekly), will be assessed in-state tuition rates. To be eligible, students (U.S. citizens and foreign nationals) must be enrolled full-time, as defined in the graduate catalogue of the public postsecondary institution, during regular terms.

J. Nondiscrimination principle. Any tuition or state-funded financial aid that is granted to residents of New Mexico shall also be granted on the same terms to all persons, regardless of immigration status, who have attended a secondary educational institution in New Mexico for at least one year and who have either graduated from a New Mexico high school or received a General Educational Development (GED) certificate in New Mexico. State-funded financial aid programs with an employment component may require U.S citizenship or eligible non-citizen status.

[5.7.18.10 NMAC–Rp, 5.7.18.12 NMAC, 8/30 /2007; A, 5/30 /2008]

APPEAL OF RESIDENCY

If, after your residency classification has been assigned, you feel that the admissions office has made a wrongful determination, you should contact the Dean of Students to appeal. If you are still not satisfied, you may direct a written letter of appeal to the Chairperson of the Student Appeals Committee. According to state law and the New Mexico Higher Education Department, Northern’s appellate process is your last recourse prior to the courts (citation: HED Rule 910.10, effective 6/19/92).
Refunds

TUITION AND FEES

Refunds are computed from the course cancellation or enrollment drop date according to the following schedules:

<table>
<thead>
<tr>
<th>COURSE LENGTH</th>
<th>PERCENTAGE OF REFUND</th>
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<tbody>
<tr>
<td>(in weeks)</td>
<td>1st</td>
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<tr>
<td>16-longer</td>
<td>100%</td>
</tr>
<tr>
<td>12-15</td>
<td>100%</td>
</tr>
<tr>
<td>9-11</td>
<td>100%</td>
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<tr>
<td>8</td>
<td>100%</td>
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<tr>
<td>6-7</td>
<td>100%</td>
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<tr>
<td>3-5</td>
<td>100%</td>
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<tr>
<td>1-2</td>
<td>None</td>
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</tbody>
</table>

*Note:* No refund is made on regular or late registration fees, or in the case of disciplinary suspension or dismissal. If you are dismissed for falsification of records, eligibility for a refund will be entirely at the option of the College.

REFUNDS APPEAL

If you believe that the College's policy for the refunding of charges has not been properly implemented, you may appeal to the Student Appeals Committee by providing the committee chair a letter of appeal, stating in detail what you believe to be inappropriate or incorrect with the decision. If the Student Appeals Committee upholds your appeal, the refund will be adjusted appropriately.

DROPPING/WITHDRAWING FROM COURSES

Once you have registered, you may drop (during the refund period) or withdraw (after the refund period) from any course online—without special permission—at www.nnmc.edu. Click on MyNNMC, then on Banner Connect, and follow the directions. You may not drop or withdraw from a course by telephone, nor may anyone other than you or your instructor drop or withdraw you from a course.

If it is established that you have never attended or have at least three consecutive absences during the first three weeks of a regular term (first week of a summer session) without prior knowledge of your instructor, that instructor has the right to withdraw you from the course—has the right to, but does not have to withdraw you. If you should stop attending a class after the deadlines mentioned above, do not assume that you will be withdrawn by your instructor—follow the instructions in the previous paragraph to avoid being billed or receiving an “F” for the course(s).

If you drop a course within the refund period (the first two weeks of a regular fall or spring semester or the first week of a summer session), your enrollment in that course will not appear on your transcript. If you drop during the third week of a regular term, or after the first week of a summer session, no record of your enrollment in that course will appear, and you will not receive a refund.
Deadlines for withdrawing from full-term courses and less than full-term courses:

<table>
<thead>
<tr>
<th>COURSE LENGTH</th>
<th>DEADLINE TO WITHDRAW</th>
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</thead>
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<tr>
<td>2-7 days</td>
<td>before scheduled class</td>
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<tr>
<td>2 weeks</td>
<td>end 2nd day of course</td>
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<tr>
<td>3 weeks</td>
<td>end 1st week</td>
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<td>4 weeks</td>
<td>end 2nd week</td>
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<td>5 weeks</td>
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<td>end 10th week</td>
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<td>13 weeks</td>
<td>end 11th week</td>
</tr>
<tr>
<td>14-16 weeks</td>
<td>end 12th week</td>
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</tbody>
</table>

STUDENTS RECEIVING ASSISTANCE UNDER TITLE IV FUNDS

If you are or will be receiving federal funds under Title IV during any period of enrollment and if during that time your enrollment is terminated (your registration is cancelled, you withdraw, or you are expelled) or you stop attending classes before completing more than 60 percent of the enrollment period, you will be subject to repayment of all or a portion of that aid. The amount of aid which you might be subject to repay is determined by regulations as set in Section 484B of the Higher Education Act, which also specifies the order of return of the Title IV funds to the programs from which they were awarded. Note: Students will receive financial aid refunds via Direct Deposit.

Detailed information concerning the method of calculating such a refund may be obtained through Northern’s Office of Financial Aid.

COURSE CANCELLATION REFUNDS

Normally prior to the first day of class, the Provost will cancel those classes having insufficient enrollment. An email message will be sent to your college email address, informing you that one of your classes has been cancelled. If the Provost deems it advisable to wait until the first day of class to make the determination, the class will be met by a department representative, the students informed of the cancellation and given an opportunity to immediately change their schedules.

Those fees which are normally non-refundable will be refunded if the cancellation completely withdraws the student from all courses for the term.

BOOKSTORE REFUNDS

Textbook purchases will be fully refunded within 10 working days from the start of classes. For courses offered for a weekend and/or one week, you will have only until the first day of class to return for a full refund. For any purchases made after the first
10 days, the student will have only 48 hours to return for a full refund. New textbooks are fully refundable only when returned in the same condition as purchased. No book purchased during the week of mid-terms or finals will be refunded; however, you may sell them back at the end of the term during the book buy-back period.

If your course has been cancelled, bring a copy of the cancellation (e.g., a new copy of your schedule showing “CC” on the line for that course) and your receipt to the Bookstore within 48 hours of the cancellation, and you will receive a full refund. New books must be in their new condition; if a shrink-wrapped book's wrapper has been broken, the refund amount will be discounted by a stocking fee.

Non-text merchandise is fully refundable within 7 days of receipt. Merchandise must be in original salable condition. No refund is given on magazines or newspapers.

Note: You must retain your receipt to process a return. If you have paid by check and wish a refund, you may have a 3-day waiting period before refunds are made.

GRADUATION FEE REFUNDS

If, after submitting your Graduation Application, you should decide not to graduate as scheduled or if you fail to meet the requirements for graduation, you will receive no refund.

Financial Aid

Northern is committed to ensuring that the opportunity for a post secondary education not be denied to any student because of a student’s limited finances. To fulfill this goal, Northern’s Office of Financial Aid administers a broad spectrum of grants, scholarships, student employment, and loans to meet the financial need of all its students.

The ability of your family to meet your cost of education will be determined by your family’s financial status in terms of income, family size, assets, and additional family members attending post secondary institutions.

The principle and primary responsibility for financing a college education is yours, and, if you are dependent upon them financially, your parents. Financial Aid is considered as supplementary to other sources of funds or income. Parents with financially dependent children should be prepared to make some financial sacrifice to pay for the education of their children.

Aid awarded to entering freshmen and transfer students is contingent upon completion of all admission requirements.

The Office of Financial Aid is required to define and enforce a standard of academic progress for financial aid recipients. If you are receiving financial aid, you must fulfill various requirements and you must complete an eligible program of study within a reasonable timeframe.

If you completely withdraw from or receive failing grades in all courses you may have to repay funds to NNMC, the Department of Education, or both. The amount of the repayment will be contingent upon your costs, the amount of aid received and when you completely withdrew from all courses. All overpayments must be repaid before any future financial aid can be disbursed.

The Office of Financial Aid, located at the Española Campus in the Montoya Admin-
administration Building, is open Monday through Thursday, 8 am to 5 pm, and on Friday from 8 a.m. to 12 p.m. and 1 p.m. to 5 p.m. The Office of Financial Aid will be open Tuesday and Wednesday from 8 a.m. to 6 p.m. the first week of each semester. We encourage you to visit our web site at www.nnmc.edu.

**APPLYING FOR FINANCIAL AID**

Submit an application for financial aid, preferably by March 1, to the Department of Education, using the Free Application for Federal Student Aid (FAFSA) at www.fafsa.ed.gov. If your application is received after the deadline, supplemental grant awards will be considered as funding permits.

**GENERAL ELIGIBILITY REQUIREMENTS**

By completing the FAFSA, you may be eligible for all federal, state and institutional programs. To receive assistance under any program administered by Northern, you must:

1. Meet United States citizenship requirements for federal aid; non citizens must meet state requirements for certain state aid; and
2. Make satisfactory academic progress toward the completion of your program of study (refer to Satisfactory Academic Program Requirement later in this section); and
3. Not be in default on a Federal Perkins Loan, a Federal Stafford Loan, or Federal Direct Student Loan; and
4. Not owe a refund/overpayment on a Federal Pell Grant, Federal Supplemental Educational Opportunity Grant, Federal Student Loans; and
5. Have been accepted and enrolled in an eligible program of study.

*Please note:* Federal financial aid pays for all courses except ENG 106N and PD 108N.

**Types of Aid**

Northern participates in the following federal and state programs. Unless otherwise indicated, students must meet ALL General Eligibility Requirements as mentioned above.

**Northern’s Bridge Scholarship:** This one-time, tuition-only scholarship is offered to current year high school graduates or GED recipients. A recipient MUST be a NM resident who graduated from a NM accredited public or private school with a graduating grade point average of a 2.0 or better. The ‘Bridge’ scholarship pays for ENG 106N and PD 108N. A completed FAFSA form is required.

**New Mexico legislative lottery Scholarship:** This is a tuition-only scholarship. A recipient MUST be a NM resident who is a current-year graduate from a NM accredited public or private high school or a GED recipient who has successfully completed his/her first regular semester at Northern with 12 or more credit hours and a grade point average of 2.5 or better. A student can receive this scholarship for up to 8 semesters if declared a bachelor’s degree program and 4 semesters if declared an associate degree. The Legislative Lottery scholarship pays for ENG 106N and PD 108N. A FAFSA form is not required; however, we encourage students to complete the form.

**Federal Pell Grant:** Intended to be the “floor” of your financial aid package and is usually combined with other forms of student financial aid to meet your financial need.
Federal Supplemental Educational Opportunity Grant (FSEOG): Available if you have exceptional financial need. Priority is given to students who receive a Federal Pell Grant. An FSEOG does not have to be repaid.

Federal TEACH Grant (TEACH): Through the College Cost Reduction and Access Act of 2007, Congress created the Teacher Education Assistance for College and Higher Education (TEACH) Grant Program that provides grants of up to $4,000 per year to students who intend to teach in a public or private elementary or secondary school that serves students from low-income families. Contact the Financial Aid Office to learn more about the TEACH Grant Program.

New Mexico Student Incentive Grant (NMSIG): Combines federal and state funds to provide aid for New Mexico undergraduate students with substantial financial need.

Federal College Work Study Program (FWS): Provides employment to students who demonstrate financial need, allowing you to earn money to help pay your educational expenses. When awarded, you can work on-campus or at selected off-campus employment sites.

New Mexico Work Study Program (SWS): Provides employment opportunities to qualified students. Although the program parallels the Federal College Work Study Program, an eligible student may not necessarily have an unmet need to participate. To be eligible, you must be a New Mexico resident.

FEDERAL LOAN PROGRAMS

Northern participates in the following Federal Loan programs:

The William D. Ford Federal Direct Loan (subsidized and unsubsidized) and the Federal Perkins Loan. These loans are available to eligible students to help pay for educational expenses that are not covered by other financial aid. To qualify, students must complete a FAFSA and be enrolled in at least six credit hours. All funds received must be used for educational expenses.

New Mexico Teaching and Health Professions: Student Loan–for–Service Programs. These loans provide New Mexico residents with loans to complete nursing, radiology and education (teaching) programs. These loans are repaid through service in a designated area that is under-served by licensed registered nurses, certified radiologists, and teachers. To be eligible, the recipient must demonstrate financial need and be enrolled in six or more credit hours per semester. Information is available on www.hed.state.nm.us or at Northern’s Office of Financial Aid.

SCHOLARSHIPS

There are numerous scholarships offered to students attending Northern. For a complete list of all scholarships, and their eligibility criteria, visit www.nnmc.edu or visit Northern’s Office of Financial Aid on the Española campus.

OTHER TYPES OF ASSISTANCE

American Opportunity Tax Credit: These tax credits may be claimed for qualified tuition and related expenses for each student in the taxpayer’s family. Please contact your tax preparer or visit the IRS website at www.irs.gov for more information.
NNMC Foundation Scholarships: The Northern New Mexico College Foundation—a non-profit 505(c) (3) corporation—awards scholarships to qualified and deserving students. Since 1996, over 800 students have received scholarships ranging from $500 to $5,000. The application and guidelines are posted on the College website February 1 of each year. Students can also inquire at the Foundation office located in the Joseph P. Montoya Administration building, AD Room 128 or visit foundation.nnmc.edu

Tribal Scholarships: If you are a Native American tribal member with financial need, you may be eligible for a tribal scholarship. Contact your Tribal Scholarship Agency for specific requirements.

New Mexico Vietnam Veterans: Administered by the New Mexico Commission on Higher Education for Vietnam veterans who were residents of New Mexico at the time of original entry into the armed forces and who were awarded the Vietnam Campaign Medal. To apply for this scholarship, contact the New Mexico Veterans Service Commission in Santa Fe at 505.827.6300.

Veterans’ Educational Benefits (The GI Bills): Most programs at Northern are approved by the Veterans’ Service Commission (Veterans’ Approval Office) for the education of veterans, war orphans, and other eligible persons. If you are eligible under one of the many current laws, contact the Veterans Representative at 505.747.2150, who is responsible for certifying to the VA the enrollment of eligible persons.

SATISFACTORY ACADEMIC PROGRESS (SAP) POLICY SUMMARY

The federal government mandates that students must be making satisfactory academic progress (SAP) toward a degree or certificate in order to maintain financial aid eligibility. Satisfactory academic progress is measured each term by qualitative (grade-based), quantitative (PACE) and maximum time frame. The standards listed below shall be used to determine eligibility for participation in financial aid programs at Northern New Mexico College (NNMC). Though this policy establishes the minimum standards for all financial aid programs at NNMC, an individual aid program may have unique qualitative and/or quantitative standards to the program as mandated by law or the program’s governing entity (e.g., Legislative 3% Scholarship and the Legislative Lottery Scholarship.)

Minimum Standards of Satisfactory Academic Progress (SAP)

You must be meeting at least the minimum standards for SAP by the end of any given enrollment period at NNMC to maintain financial aid eligibility:

1. Qualitative: Cumulative Grade Point Average (GPA)

   Students must meet the minimum of a 2.0 cumulative GPA.

2. Quantitative: PACE of Progression (Completion Rate)

   A student’s academic progress will be measured by comparing the number of attempted credit hours with the credit hours earned (i.e., received a grade of A, B, C, D, or CR). This includes any course for which the student has remained enrolled past the add/drop period. A student must earn 70 percent of credits attempted to maintain satisfactory academic progress.
3. Maximum Time Frame for Degree/Certificate Completion

Students will be limited to 150% of the published length of the program.

Examples:

**Associates in Early Childhood Education Program** requires 65 credit hours
65 credit hours x 150% = 98 credit hours maximum

**Bachelor’s in Education** requires 132 credit hours
132 credit hours x 150% = 198 credit hours maximum

4. The following are considered when evaluating a student’s satisfactory academic progress:

**Withdrawal, incompletes, and failures**: are considered attempted but not earned hours.

**Repeated courses**: A student is allowed to repeat a course once if previously passed. A student is allowed to repeat a course twice if previously failed. Repeated courses are included in the calculation of both attempted and earned hours.

**Audited courses**: Are not included for financial aid purposes.

**Remedial courses**: Up to 30 hours of remedial courses are not included in the calculation of both attempted and earned hours, and passing grades (CR) are calculated as a 2.5 grade point average for financial aid purposes.

**Transfer credits**: All transfer hours are included in the calculation (even if you received no federal student aid for those courses) of both attempted and earned hours but not in the calculation of GPA.

5. Changing a Program of Study and/or Pursuing Additional Degree

Students are allowed to change majors but may not exceed the maximum time frame as noted in item 3 above.

6. Semester Satisfactory Academic Progress Review

Those students not meeting the requirements stated will be placed on one of the following statuses: warning, probation or suspension during the next semester of enrollment and will receive a letter to that effect. Depending on the circumstance, a student will be placed on one of the following:

- **Warning**: status assigned to a student who fails to make SAP. Student may continue to receive Financial Aid for one payment period. No appeal necessary for this status. To be removed from financial aid warning status, you must attain the required cumulative GPA and/or credit completion ratio standards by the end of your warning period. You will be suspended at the end of your warning term if you fail to attain the required standards.

- **Probation**: you will be placed on financial aid satisfactory progress probation if a satisfactory academic progress appeal is approved. You are eligible for financial aid while on probation. During your probationary term, you must attain the required cumulative GPA and credit completion ratio or you must successfully follow the academic plan submitted with your SAP appeal. Failure to attain the required GPA and/or credit completion ratio will result in suspension of financial aid eligibility. If you do not attain required GPA and/or credit completion ratio but successfully follow the academic plan submitted with your SAP appeal, you may submit a follow-up appeal showing you have met the terms of your academic plan.

- **Suspension**: if you do not attain the required cumulative GPA and/or credit com-
pletion ratio during your probation period, or exceed your maximum timeframe of 150% of the published degree credits required to complete your program, you will be placed on financial aid suspension. You have an opportunity to appeal suspension. While on suspension you are not eligible to receive financial aid. (The exceptions are external scholarships).

You may attend Northern at your own expense until you attain the cumulative GPA and cumulative credit completion requirement.

7. Appeal Procedure

Student must submit an appeal using the Financial Aid Appeal form. Attach a typed and signed letter to the Financial Aid Appeal form documenting clearly the extenuating circumstances that hindered you from meeting SAP along with proper documentation noted below. Extenuating circumstances that interfered with your ability to meet SAP standards might include but are not limited to:

- **Illness, accident, or injury** experienced by you or a significant person in your life. Documentation required: physician’s statement, police report, or other documentation from a third party professional; hospital billing statement.

- **Death of a family member** or significant person in your life. Documentation required: a copy of the obituary or death certificate.

- **Divorce experienced by you or parent.** Documentation required: attorney’s letter on law firm’s letterhead or copy of divorce decree.

- **Reinstatement after an academic dismissal** or extended break in your enrollment. Documentation required: advisor’s written statement.

- **Personal problems or issues** with your spouse, family, roommate, or other significant person. Documentation required: written statement from medical doctor, counselor, attorney, or other professional advisor.

- **Successfully following an academic plan during the probationary term, yet remaining below the overall completion 70% completion ratio** or minimum 2.0 GPA requirement.

The Financial Aid Director will review the appeal and make one of three decisions:

- **Denied:** The Director may deny the appeal. If the appeal is denied, the student will not be eligible to receive financial aid at NNMC. The student will be responsible for his/her tuition. If the denied student successfully completes credits in the future, he or she may submit another appeal to the Financial Aid Office. Based on successful coursework, he or she may be reinstated.

- **Probation:** After reviewing the appeal based on the documentation provided and if it is mathematically possible for the student to make SAP at the end of the next semester, the Director will grant the student one additional semester of aid. During that semester the student will be on probation.

- **Reinstate:** After reviewing the appeal and based on the students extenuating circumstances, the Director may feel that the student deserves another opportunity to receive financial aid. However, based on the student’s past academic performance and expected enrollment, it will not be mathematically possible for the student to make SAP at the end of the next semester, therefore the student will be required to complete an Academic Plan of Action calculating the number of semesters that it takes for the
student to make SAP. The student must abide by the plan every semester. Failure to abide by the plan will result in suspension of the student’s financial aid.

8. Academic Plan of Action (APA)

Students who are close to or have reached their 150% allowable timeframe will be required to meet with their Academic Advisor to complete an APA. This plan will determine if the student is able to complete their degree within the allowable timeframe and continue receiving aid, or the student will not complete their program of study within the 150% timeframe, and lose all financial aid eligibility. The student must abide by this plan every semester, failure to do so will result in suspension of the financial aid.

The Financial Aid Director will review the Academic Plan of Action and make one of two decisions:

- **Denied:** The Director will deny the appeal if after reviewing the APA the student will not complete their degree within 3 semesters or the student will not meet the required SAP eligibility within 3 semesters. The student will not be eligible to receive Financial Aid and will be responsible for his/her tuition.

- **Approved:** The Financial Aid Director will approve the appeal if based on the APA the student will complete their degree within 3 semesters or will meet the required AAP eligibility within the 3 semesters. Failure to abide by the plan will result in suspension of the student’s financial aid.

9. Satisfactory Academic Progress for Student Loans

Students MUST meet the minimum SAP requirements to apply for and/or to continue receiving both Federal Direct Subsidized/Unsubsidized Loans and Federal Perkins Loan. This is non-appealable.

10. All Decisions by The Financial Aid Director Are Considered Final and Non-Appealable.

**FINANCIAL AID DISBURSEMENTS**

Beginning 2011-2012 Northern will no longer issue Financial Aid Refunds via paper check. *Electronic refunds will be issued as follows:*

- All refunds will be disbursed through direct deposit or will be placed on a bank card for those students who do not have a banking institution.

- To set up direct deposit, visit aid.nnmc.edu and select the link **REFUNDS: HOW TO SET UP DIRECT DEPOSIT** for instructions.

- Students who do not have a banking institution will need to visit the Business Office to set up an account.

- The Business Office will notify students regarding the specific disbursement date(s) for the semester.

**Student Services Information**

**ACCESSIBILITY RESOURCES**

If you have any type of disability, you may avail yourself of the educational and personal support provided in this area. If you have questions about the availability of facilities for people with disabilities, or for any type of assistance, contact Rebecca
Cabildo, the Coordinator of our Accessibility Services department, at 505.747.2152.

**OFFICE OF VETERANS’ AFFAIRS**

This office serves the advisement and certification needs for students and their dependents eligible for veterans’ educational benefits under any of the various G.I. Bills. For assistance, contact Pam Montrose at 505.747.2151.

**NEW MEXICO EDUCATIONAL OPPORTUNITY CENTER (EOC)**

This is a federally-funded TRIO program, authorized by Public Law 94-482, which provides services to ten north central New Mexico counties to people who are low income, adults (19 and over), and first-generation students. Its primary function is to recruit for any and all New Mexico colleges and to assist applicants with admissions, financial aid processes, job outlook, career orientation, and academic advisement.

The Educational Opportunity Center’s main office is located on the Española campus with satellite offices in Bernalillo, Santa Fe, Taos, and Las Vegas, New Mexico. EOC staff work with Northern New Mexico College in providing quality service to our students. For assistance, call 505.747.2200.

**COLLEGE ASSISTANCE MIGRANT PROGRAM**

The CAMP program is a federally-funded program that provides academic support services, and financial resources for migrant/seasonal farmworkers throughout their first year of college. CAMP provides tuition assistance, book stipends, tutoring services, academic advisement, and monthly stipends to eligible full-time students for their first year of college at Northern. The program serves 35 students annually. For information, contact the CAMP office at 505.747.2200.

**EL PUENTE—SUMMER BRIDGE PROGRAM**

This intensive Accelerated Learning Academy supports students who are required to take developmental courses in math and English composition. *El Puente* increases students’ college readiness and provides a “bridge” to freshman-level math and English courses while assisting in the transition from high school to college, providing an extended orientation and offering various co-curricular projects and activities. *El Puente* is free to eligible students accepted into the program (pending available funds).

**EXITO! COUNSELING OFFICE**

The EXITO! Title V counseling office is a member of the American College Counseling Association (since 2012), and currently offers year round unlimited mental health counseling sessions; four groups of support for different populations (women, men, GLBQT, and AA groups); referrals to outside counseling services; and assistance with campus health prevention efforts for mental illness, addiction, and suicide issues in our communities; the counselor is available to speak in classrooms on a variety of such subjects.

The office is located in Montoya Administration Bldg., 241-C, and more information is available at www.nnmc.edu, under Current Students, at the Student Health link. The phone number is 505.747.2256, and the office is open Monday—Thursday, from 9 a.m.-5 p.m., with later or earlier appointments available, as needed.
FIRST YEAR EXPERIENCE PROGRAM

This learner-centered program offers Learning Communities, Linked Courses, intensive academic advisement, and a specially designed FYE class, HUM 100: The History and Culture of Northern New Mexico (a General Education requirement). We believe these opportunities increase academic success, encourage social networking, and enhance the overall college experience in the early years at Northern.

MATH CENTER

Do you need to improve your math skills? The Math Center, located in the Student Success Center, offers assistance through individual tutoring, study groups, and math tutorial software. To schedule an appointment or to get more information, call the Math Center at 505.747.2276.

WRITING CENTER

Do you need to improve your writing skills? If you feel challenged by the writing process, from brainstorming and organization to drafting and revising, the tutors at Northern’s Writing Center are available by appointment for one-on-one sessions throughout the week. Appointments are generally for half-hour working periods, concentrating on a single aspect of your personal writing process.

The Writing Center is located in AD 129. For an appointment, hours of operation, or further information, call the Writing Center at 505.747.2294.

TUTORIAL PROGRAM

As a student at Northern, you are eligible for free tutoring in several academic subjects. Both professional and peer tutors are used on either a one-to-one or small group basis to help you master course material or to overcome difficulties in understanding texts, preparing for exams, or developing good study habits. To take advantage of this service, contact Brenda Martinez in the Student Success Center at 505.747.2199.

PERSONAL AND CAREER DEVELOPMENT

You may find interesting and helpful courses among our offerings, such as “Becoming a Master Student.” These courses help you develop basic skills you can use to enhance your educational and career outlook. For more detailed information, contact our Student Advisement Center, 505.747.2150, or the Student Success Center, 505.747.2199.

STUDENT ACTIVITIES

All students are encouraged to become aware of and involved in co-curricular activities. Because the student population at Northern is so diverse, activities are set up to serve as many students as possible.

All student activities are coordinated by the Student Senate and the Student Support Services department. Activities range from social to athletic and cultural events. Opportunities exist for becoming a member of the Student Senate or for joining such varied clubs as the literary club, engineering club, etc., or for joining our honor society, Alpha Iota Sigma (a chapter of Phi Theta Kappa, the international honor society for two-year colleges).
STUDENT SENATE

The Student Senate is comprised of the elected officers of the Associated Students of Northern New Mexico College, which is the chartered organization representing students and their interests.

You may obtain more detailed information about the Student Senate and college clubs by contacting the Coordinator of Student Activities, Mr. Richard Sedillo, 505.747.2287, or by reviewing the information contained in the Student Handbook. For information about Phi Theta Kappa, contact Dr. Brenda Linnell at 505.747.2217.

STUDENT PHOTO ID

Each credit-student will be issued an unrestricted photo ID immediately upon payment of the term’s full tuition and fees or upon having signed up for Northern’s Payment Plan. The card will verify those cases for which inter-campus transportation and/or meal plans have been paid. Validation will take place at registration during each subsequent term. You are required to present your current student ID when requesting service from any Northern department.

Students who are officially enrolled in the Adult Basic Education or High School Equivalency Programs will be issued a photo ID, without charge, restricted only in terms of specific beginning and ending dates of their program (as established by the programs, but not to exceed the normal ending date of a term).

Photo IDs will be issued to those enrolled in Continuing Education/Community Service courses which have a minimum length of seven weeks. Beginning and ending dates of the courses will be put onto the cards. Students may use gymnasium facilities only if their validated photo ID is in their possession at all times while in the gymnasium.

INSURANCE

Information about available insurance programs and claims is available through the Coordinator of Student Activities at 505.747.2287.

If you are an international student who will be attending under a student visa, you are required to obtain health and accident insurance.

In addition, students in some specific programs and/or courses must obtain specific types of insurance before enrolling. For further information, check with the Department Chairperson responsible for your particular major, such as Massage Therapy, Nursing, Radiologic Science, Cosmetology, etc.

Auxiliary Services

TRANSPORTATION SERVICES

For information about transportation between campuses, call the Cashier’s office at either campus.

FOOD SERVICES

Northern provides food service at its Española campus.
BOOKSTORE SERVICES

The College Bookstore on the Española campus is a full service bookstore. Students should familiarize themselves with Bookstore hours and policies posted on Northern’s website at www.nnmc.edu under Current Students at the Bookstore link. If you are enrolling in Auto Mechanics, Barbering, Cosmetology, Electricity, Plumbing, Spanish Colonial Furniture Making, or Welding, you will need to order a kit when you register for classes.

The Bookstore policy allows book buy-backs during finals week at the end of each term. No receipt is necessary.

Textbook purchases are fully refundable within 10 days of the start of classes, or within 2 days of purchase thereafter. You must present a receipt for this service.

LIBRARY SERVICES

The main library facility is at Northern’s Española campus; materials appropriate to El Rito programs are housed in the library facility on the El Rito campus. A Northern ID card is required to borrow materials but the facilities are open to students, faculty, staff, and the community for quiet study, research, viewing of audiovisual materials, and computer usage. Only five books in one subject area may be checked out at one time.

Electronic books as well as subscription library databases consisting of full text journal articles in various disciplines are made available on campus and remotely twenty-four hours daily, seven days a week; however, Northern ID numbers are required to gain access to them from remote sites. All of these options are available through the Northern Library website, including the library book catalog. Those community members who are not enrolled as students must pay an annual library-use fee to have borrowing privileges.

The Library provides orientation sessions for class groups and/or individualized instruction on the use of library database utilization. In addition, the library provides a copy machine, computers for library database access as well as Internet access and Microsoft Office products, group study rooms, coffee shop, WiFi, an audiovisual viewing and listening space, Interlibrary loan and reciprocal borrowing privileges. For more detailed information, look on Northern’s website under “Library” or call 505.747.2243.

PARKING

In general, the only reserved parking is for those who are handicapped and whose automobile shows a valid handicapped placard. Unless you have a physical disability and possess the required placard, do not park in spaces reserved specifically for the physically disabled; your vehicle will be ticketed or towed. The fine for violating handicapped parking is expensive.

ON–CAMPUS SPEED LIMITS

On-campus driving is restricted to a maximum of 10 mph, or less, depending on the traffic flow. You are expected to obey all traffic signs and give the right of way to anyone not in an automobile who is traveling between buildings and/or parking lots.
CHILDREN ON CAMPUS
You may not bring your children to your classroom or to the Eagle Memorial Sports Complex unless the child is attending a children’s class offered by the College. Children are not to be left unattended on campus.

Other Services
In addition to the services already listed, a number of others are provided by varied programs at Northern: Adult Basic Education (ABE), High School Equivalency Program (HEP), General Education Development (GED) testing, and Continuing Education and Community Services (CE/CS).

ADULT BASIC EDUCATION (ABE)
This program provides instruction throughout northern New Mexico in the area of GED test preparation, pre-GED, English and math basic skills brush-up, Integrated Life Skills, literacy improvement, English for speakers of other languages (ESOL), and U.S. citizenship preparation. For information, call 505.747.2195 or 505.747.2198.

HIGH SCHOOL EQUIVALENCY PROGRAM (HEP)
The Northern New Mexico College High School Equivalency Program (HEP) is a Federal Program funded by the Office of Migrant Education, a department of the United States Department of Education.

The mission of Northern’s HEP is to provide academic instruction, support services, and financial resources for migrant/seasonal farmworkers pursuing a high school equivalency diploma. Students must be at least 16 years of age. For information, contact the HEP office at the Española campus at 505.747.2144 or 505.747.5441.

Note: Students enrolled in either the ABE or HEP programs are not eligible for admission to the college until they have earned their GED.

GED TESTING
Northern New Mexico College is the designated testing center for Rio Arriba County. For further information, contact Pam Montrose at the Española campus at 505.747.2151.

CONTINUING EDUCATION AND COMMUNITY SERVICES (CE/CS)
This is the non-credit division of the College which provides communities in our service area with special interest courses using conference, workshop, and seminar formats.

Business, professional, or community groups interested in meeting to discuss topics of special interest at either the Española or the El Rito campus may contact the Office of Continuing Education/Community Services at 505.747.2119 or 505.747.5447.

Emphasizing its community service component, the Office of Continuing Education and Community Services actively seeks to identify educational needs of the community and to serve those needs by using existing resources and through cooperative efforts with other educational institutions and service agencies.
STUDENT RECORDS AND FERPA

The Office of the Registrar is responsible for the maintenance of your educational records at Northern New Mexico College. Such records include but are not limited to student transcripts, academic folders and faculty grade reports. Annual notice concerning our policy is made available in each semester's published Schedule of Classes, in the Student Handbook, and in each catalog.

The following information provides policies and procedures as they pertain to educational records:

Access to and Confidentiality of Student Records. The confidentiality of educational records is governed by a federal law, the Family Educational Rights and Privacy Act, 34 CFR (hereafter referred to as FERPA). Under that law, you have certain rights with regard to the inspection, access, and correction of inaccuracies in your records. Under certain circumstances, parents or guardians of students may also enjoy such privilege. Under the provision of this Act, the following policies apply:

1. If you are currently enrolled or have previously attended Northern, you may inspect your educational records by obtaining an appointment to review your records with the Registrar. At the time of the review you will be asked to produce a photo ID to validate your identity. “Educational records” consist of any record (regardless of the medium in which it exists) which is maintained by the College and which is directly related to you, the student, with the exception of the following types of records:
   a. Personal records kept by a faculty or staff member which have never been revealed or made available to another person unless to the maker’s temporary substitute.
   b. Employment records of an individual whose employment is not contingent on the fact that he is a student, provided that the record is used only in relation to the individual’s employment. Transcripts submitted for the purposes of employment are not part of your educational record.
   c. Records maintained by a college security unit if the record is maintained solely for law enforcement purposes, is revealed only to law enforcement agencies of the same jurisdiction, and the unit does not have access to education records maintained by the college.
   d. Alumni records which contain information about you after you are no longer in attendance at the College and the records do not relate to you as a student.

2. You may challenge (in writing) inaccuracies or misleading items; however, you may not challenge the fairness of a grade nor may you challenge the information in any transcript which did not originate at Northern. In support of a written challenge, you may request and obtain a photocopy (at nominal charge) of any item under dispute. Direct any challenges, in writing, to the attention of the Registrar.

3. Your records will not be released without your written consent, except to college officials with a legitimate educational interest.
   a. A college official is one who is employed by Northern in an administrative, supervisory, or support staff position (academic or research); is a member of the Board of Regents; or is employed by or is under contract to the College to perform a special task, such as, perhaps, an attorney or auditor.
   b. An educational interest is legitimate if the official is performing a task that is...
specified in his job description or by a contract agreement; performing a task related to a student’s education; performing a task related to the discipline of a student; or providing a service or benefit relating to the college, the student, or the student’s family, such as job placement or financial aid. Included under the area of legitimate interest would be the National Student Clearinghouse.

4. Exceptions to the requirement that you provide written authorization include:
   a. Access, upon request, to officials of another school in which you seek or intend to enroll. In this case, we will make a reasonable attempt to notify you of the transfer of information.
   b. Access to certain officials of the U.S. Department of Education, the Office of Veterans Affairs, the Bureau of Homeland Security, and state and local educational authorities in connection with certain state or federally supported education programs.
   c. Access to law enforcement agents pursuant to Section 507 of the USA Patriot Act. Upon such access you will be notified as required by NM House Memorial 2, Laws of 2003.
   d. Access in connection with your request for or receipt of financial aid, as necessary to determine eligibility, amount, or conditions of the financial aid, or to enforce the terms and conditions of the aid.
   e. Access to organizations conducting certain studies for or on behalf of the College.
   f. Access to accrediting organizations to carry out their functions.
   g. Access to parents/guardians who show proof that you were claimed as a dependent for income tax purposes in the previous tax year.
   h. Access to comply with a judicial order or a lawfully issued subpoena, although the college has an obligation to make a reasonable attempt to give you prior notice before complying with the subpoena. An exception to the “reasonable attempt” exists when the subpoena is issued for a federal grand jury or for law enforcement purposes.
   i. Access to appropriate parties in a health or safety emergency.

Notwithstanding other exceptions, certain personal information, called Directory Information, may be released without your written authority. This includes your name, mailing address, major field of study, classification, enrollment status (full- or part-time), dates of attendance, participation in officially recognized activities and sports (including weight, height, or photograph of athletic team members), honors and degrees awarded, and the name of the education agency or college attended immediately prior to attending Northern.

In addition to the release of information permitted under FERPA guidelines, the National Defense Authorization Act of 1995, the National Defense Authorization Act for 1996, and the Omnibus Consolidated Appropriations Act for 1997 allow the Department of Defense (under special authority granted under what is called the Solomon Amendment) to request the following information about you under its own special definition of “directory information.” This exception has been created in order to permit the Secretary of Defense access to the following particular information for recruitment purposes: Your name, address, telephone listing, date of birth, level of education, aca-
demic major, degrees received, and the name of the educational institution in which you had been most recently enrolled (prior to enrollment at Northern). The only students excluded under this definition are those who are under the age of seventeen and those seventeen or older who have signed a written request denying access to their records by a third party. Also excluded are those above the age of forty-two.

5. When a transcript is released, the recipient is notified by Northern that the record may not be released to any other person.

Details concerning your rights and privileges under the Family Educational Rights and Privacy Act are available in the Registrar’s Office at the Española Campus.


**Directory Information.** Directory information may be released without your written consent unless you have requested in writing that directory information be withheld. You may specify that individual portions of the directory information or the entire listing be restricted without your written consent. A form to implement such a restriction may be obtained on-line or from the Office of Admissions and Records. If no restriction is received by the Registrar, your information will be classified as directory information until such a restriction is placed.

**Restriction of Access.** You may request this restriction only during a term in which you are then enrolled. If you have applied a restriction to your records, it will continue in effect after you graduate and/or otherwise leave the college.

A brief version of FERPA (FERPA for Dummies) may be found on Northern’s website at www.nnmc.edu by following links to either Current Students or Future Students.

**TRANSCRIPTS**

*Obtaining a Northern transcript or having a transcript sent on your behalf:*

In order to obtain an official transcript for yourself or to have one sent to a person, agency, or school, you must submit a written request to the Registrar’s Office. You may pick up a form at the Registrar’s Office, write/fax a letter to 505.747.5449, or request a transcript by e-mail. If you have questions, please call 505.747.2138. A copy of the request form can be found on Northern’s website at www.nnmc.edu under Current Students at the Registrar link.

We ask that you not take advantage of our no-cost service by keeping the number you request at any one time down to not more than three copies weekly.

Each transcript will be issued at no cost. However, no transcripts will be issued unless all institutional obligations are paid (including loans issued through the instrumentality of Northern).

You may request that your transcript be sent via a secure email system (eScript) directly to whomever you provide an email address for. Be sure to verify that the receiving party is willing to accept an electronic transcript before deciding to have us send one by that method.

You can obtain an unofficial copy of your transcript by visiting our website, clicking on MyNNMC, and following the appropriate links.
TRANSCRIPTS FROM OTHER INSTITUTIONS

Transcripts from other institutions which you have had sent to Northern for purposes of establishing admission eligibility for regular status do not belong to you and will not be returned to you. Do not expect that these transcripts will forever remain a physical part of your official educational record. Once their purpose has been served, they may legally be destroyed in accordance with state policies dealing with records retention. In unusual circumstances, we may make a photocopy of another institution's transcript, but it will be reduced in size, so it cannot be modified.

CHANGE OF NAME

If you wish to process a change of name for your academic record, you must bring appropriate documentation (at least two types of identification showing the new name) to the Office of Admissions. Examples of such documentation include a marriage certificate, birth certificate, or court order for legal name change. A name change will be processed only if you are a currently enrolled student. Diplomas will be issued only for the official name under which your admission is granted or as officially amended. In addition, name changes are not made for alumni.

Standards of Conduct

Students at Northern are expected to act in a responsible manner and to abide by all College policies while on Northern’s campuses.

An individual who enrolls at Northern can rightfully expect an environment conducive to teaching and learning. This assures each student that a safe and healthy environment exists at Northern. To ensure the attainment of this goal, Northern has developed Standards of Conduct for all students. These standards identify behavior that impedes the teaching and learning process. We ask that each of you assist in assuring that Northern is a place where quality teaching and learning will occur in a friendly setting.

Northern’s Student Handbook contains detailed information concerning specific standards expected from each student, information about disciplinary sanctions which could be invoked for infractions of the standards of conduct, and the appellate process applicable to appeals of disciplinary action imposed under the code. The Student Handbook is considered an official part of this catalog even though it is published in a separate document.

PLAGIARISM

Dishonesty in connection with tests, quizzes, or coursework assignments may be cause for dismissal from the College.

Plagiarism is the most common type of academic dishonesty. Plagiarism consists of any representation of another person’s work as one’s own without proper acknowledgment. Examples include but are not limited to 1) submitting as one’s work a paper which includes a part copied from a book or article without identifying the quoted selection and/or sources, 2) presenting an author’s ideas as though they were your own original ideas, or 3) using work by another student with your name as the author.

When an instructor suspects a student of academic dishonesty, the instructor will
bring it to the student’s attention. If the problem is not resolved to the instructor’s satisfaction, the incident will be reported to the department or program chairperson for follow-up action.

**Substance Abuse Policy**

**OUR PHILOSOPHY**
Northern is committed to a safe working and learning environment for its faculty, staff, students, and the general public. Because substance abuse affects people’s performance, conduct, reliability, and general ability to learn and complete assigned tasks, Northern has adopted the following policy on substance abuse:

**OUR POLICY**
While you are on College property, you are denied the unauthorized use, manufacture, distribution, dispensation, sale, possession, or transfer of controlled substances, including the unauthorized use or possession of, or being under the influence of, alcohol or alcoholic beverages.

**PENALTY FOR VIOLATION**
Violation of this policy may result in such disciplinary action as dismissal and referral for investigation and/or prosecution by appropriate law enforcement agencies.

**DRUG TESTING**
Routine drug testing is not permitted; however, if there is reasonable suspicion that a specific individual is in violation of this policy, that person may be required to undergo testing as a condition of continued enrollment as a student. This does not preclude the College, at its discretion, from conducting random drug testing programs for students who might be participating in athletic activities conducted or sponsored by the College.

**Student Right-To-Know and Campus Security Policies**
In compliance with the provisions of Public Laws 101-542 and 102-26, Northern has established policies governing the availability of information concerning graduation rates and campus security.

**GRADUATION RATES**
Northern will produce and make readily available, upon request, to current students and to each prospective student enrolling or entering into any financial obligation with Northern, the completion/graduation rate and transfer rate of certificate or degree-seeking, full-time undergraduate students. Specific questions concerning this policy should be directed to the Director of Institutional Research at 505.747.2118.
CAMPUSS SECURITY

All students, faculty, and staff are to report to the Director of Campus Security any criminal activity occurring within the campus facilities or during any college-sponsored activity. No type of criminal activity within the campus or during college activities will be tolerated.

Criminal activities include but are not limited to murder, rape, robbery, aggravated assault, burglary, motor vehicle theft, liquor law violation, drug abuse, and weapons possession. Under the terms of the law, in September of each year the College prepares, publishes, and distributes information which is available upon request to current students and employees, and to any applicant for enrollment or employment.

In addition, Section 485(f)(1) of the Higher Education Act of 1965 (20 USC 1092(f)(1) requires that the College notify the campus community how to obtain information provided by the state under the Violent Crime Control and Law Enforcement Act of 1994 (42 USC 14071(j))* concerning registered sex offenders. For our area, this information can be obtained from the New Mexico Department of Public Safety website (www.nmsexoffender.com).

Specific questions concerning this policy should be directed to the Dean of Student Services.

* Commonly referred to as the Megan Act.
Notes:
Department of Fine Arts

The mission of the Fine Arts Department is to provide you with the opportunity to enrich your life through study of the traditional fine arts (art, dance, music, theatre, film, and southwest heritage arts), and to prepare you for entry into baccalaureate programs.

Native American students attending the Pueblo of Pojoaque’s POEH Center for the Arts are eligible to have many of their courses count against program requirements in the concentration of Art, thus enabling them to earn credit and, if otherwise eligible, qualify for federal financial aid.

Donna Winchell, MEd  Chair  747.2292  ddwinchell@nnmc.edu
Matthew Leder, MM  Music Director  747.2296  mleder@nnmc.edu
Marcos Cavalcante, DM  Music  747.2293  mscavalcante@nnmc.edu
Judith Vejvoda, MFA  Art  747.2295  jvejvoda@nnmc.edu

Associate of Arts ART

This program is designed to maximize transfer of credit to a four-year program. In addition to a generous exposure to general education courses, you will concentrate your efforts in art.

GENERAL EDUCATION (36 CR)

Area I. Communications (9 cr)
Area II. Mathematics (3 cr)
Area III. Laboratory Sciences (8 cr)
Area IV. Social/Behavioral Sciences (6-9 cr)
Area V. Humanities and Fine Arts (6-9 cr)

HUM 100 FYE: History and Culture of Northern New Mexico (3)
Area VI. Library Technology (1 cr)

LT 101 Library Research Skills (1)

ART REQUIREMENTS PROGRAM (31-33 CR)

ART 105 Introduction to Art (3)
ART 107 History of Art I (3)
ART 110 Drawing I (3)
ART 120 Painting I (3)
ART 122 Design Elements in Art (3)
ART 160 Pottery I (3)
ART 170 Photography I (3)
ART 208 History of NM Art and Architecture (3)
ART 211 History of Art II (3)
ART 233 Printmaking I (3)

Choose one course from the following:

ART 150 Bookmaking (3)
ART 221 Drawing II (3)
ART 232 Painting II (3)
ART 235 Watercolor (3)
ART 237 Sculpture (3)
ART 240 Portrait Painting (3)
ART 260 Pottery II (3)
ART 270 Photography II (3)
FA 100 Introduction to Weaving (1-3)

TOTAL CREDITS: 67-69

Associate of Arts

DANCE

This program is designed to maximize transfer of credit to a four-year program. In addition to a generous exposure to general education courses, you will concentrate your efforts in various styles of dance.

GENERAL EDUCATION (36 CR)

Area I. Communications (9 cr)
Area II. Mathematics (3 cr)
Area III. Laboratory Sciences (8 cr)
Area IV. Social/Behavioral Sciences (6-9 cr)
Area V. Humanities and Fine Arts (6-9 cr)

HUM 100 FYE: History and Culture of Northern New Mexico (3)
Area VI. Library Technology (1 cr)

LT 101 Library Research Skills (1)

PROGRAM REQUIREMENTS (32-34 CR)

DANC 126 Modern Dance (2)
DANC 139 Folklorico Dance I (2)
DANC 149 Ballet I (2)
DANC 169 Flamenco Dance I (2)
DANC 211 Choreography (3)
DANC 212 Improvisation (2)
DANC 214 Kinesiology (3) or HCSI 114 Kinesiology for Massage (2)
DANC 240 Dance Appreciation (3)

Prerequisite: ENG 109 or adequate score on the Course Placement Evaluation (CPE)

DANC 245 History of Dance (3)
DANC 292 Dance Repertory (1)
DANC 295 Dance Portfolio (3)
THE 120 Introduction to Theatre I (3)
THE 250 Stage Management (2)

Choose one of the following (2-3 cr)

ART 170 Photography I (3)
DANC 110 Fitness for Dancers (2)
DANC 139 Folklorico Dance II (2)
DANC 150 Hip-Hop and Jazz I (2)
DANC 249 Ballet II (2)
DANC 182 Salsa Dance I (2)
DANC 250 Hip-Hop and Jazz II (2)
DANC 282 Salsa Dance II (2)
DANC 269 Flamenco Dance II (2)
MUS 105 Music Appreciation (3)

Prerequisite: ENG 109 or adequate score on CPE

THE 196 Intro to Light and Sound (3)

TOTAL CREDITS: 68-70
Associate of Arts  
**FILM & DIGITAL MEDIA ARTS (FDMA)**

The two-year AA FDMA Program is for students interested in pursuing a career in creative industries including Film, Television, Radio, Audio Production, Digital Photography, and Design. This program provides training for entry-level Film and Digital Media technical positions, and a foundation for students seeking to transfer to a four-year program.

**GENERAL EDUCATION (36 CR)**

*Area I. Communications (9 cr)*

*Area II. Mathematics (3 cr)*

*Area III. Laboratory Sciences (8 cr)*

*Area IV. Social/Behavioral Sciences (6-9 cr)*

*Area V. Humanities and Fine Arts (6-9 cr)*

| HUM 100 FYE: History and Culture of Northern New Mexico (3) |

*Area VI. Library Technology (1 cr)*

| LT 101 Library Research Skills (1) |

**FDMA PROGRAM REQUIREMENTS (35-39 CR)**

*Program Core Requirements (24 cr)*

- FDMA 101 Intro to Digital Video Production (4)
- FDMA 107 Digital Media Literacy (4)
- FDMA 111 Digital Media Production I (4)
- FDMA 211 Digital Media Production II (4)
- FDMA 280 History of Cinema (3)
- FDMA 295 Digital Media Portfolio (2)
- ART 170 Photography I (3)

*Choose 8-12 credits from the following:*

- FDMA 102 Intro Digital Audio Documentary (4)
- FDMA 110 *Non-linear editing: Lightworks®* (4)
- FDMA 115 Intro to Documentary Film making (4)
- FDMA 120 Digital Music Production Techniques (4)
- FDMA 125 Digital Audio Production (4)
- FDMA 140 Digital Imaging I: Adobe Photoshop® (4)
- FDMA 155 Digital Animation I: 3-D MAX (4)
- FDMA 175 Web Design I (4)
- FDMA 201 Advanced Digital Video Production (4)
- FDMA 240 Digital Imaging II: Adobe Photoshop® (4)
- FDMA 255 Digital Animation II (4)
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
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<tbody>
<tr>
<td>FDMA 275</td>
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<td>FDMA 290</td>
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<td>FDMA 296</td>
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<td>Digital Media Production Internship</td>
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<tr>
<td>FTT 103</td>
<td>9</td>
<td>Film Crew I</td>
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<tr>
<td>FTT 104</td>
<td>9</td>
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</tr>
<tr>
<td>FTT 105</td>
<td>6</td>
<td>Film Crew III-Internship</td>
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Choose 3 credits from the following:

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<tr>
<td>ART 110</td>
<td>3</td>
<td>Drawing I</td>
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<td>ART 120</td>
<td>3</td>
<td>Painting I</td>
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<tr>
<td>ART 122</td>
<td>3</td>
<td>Design Elements in Art</td>
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<td>MUS 102</td>
<td>3</td>
<td>Music Theory I</td>
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<tr>
<td>THE 196</td>
<td>3</td>
<td>Light and Sound</td>
</tr>
<tr>
<td>THE 132</td>
<td>3</td>
<td>Stagecraft</td>
</tr>
<tr>
<td>THE 122</td>
<td>3</td>
<td>Acting I</td>
</tr>
<tr>
<td>THE 124</td>
<td>3</td>
<td>Acting for the Camera</td>
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</table>

**TOTAL CREDITS: 71-75**

**Certificate**

**FILM TECHNICIAN**

This program prepares you for entry-level jobs in the craft and skills portion of the film industry. You will study film set etiquette, terminology, film history, basic equipment handling, and OSHA safety rules to enable you to work on a movie set.

**GENERAL EDUCATION (7-8 CR)**

**Communications (4 cr)**

- **ENG 108N** Basic Composition I (4) or a higher level course

**Mathematics (3-4 cr)**

- **MATH 100N** Fundamentals of Math (4) or a higher level course

**PROGRAM REQUIREMENTS (24 CR)**

- **FTT 103** Film Crew I (9)
- **FTT 104** Film Crew II (9)
- **FTT 105** Film Crew III-Internship (6)

**TOTAL CREDITS: 31-32**
Bachelor of MUSIC

This program is designed for those interested in a general liberal arts education with an emphasis in music.

**Acceptance into the program:** Although students may enroll in any music course for which they qualify, an application to the program and acceptance into the major after a formal performance audition is required before being considered as a degree-seeking music major. Such applicants must demonstrate a cumulative GPA of at least a 2.50; continued participation requires maintaining a minimum 2.00 GPA, with no grade less than a C. Interested students should contact the Music Program Director at 505.747.2296 for information, advisement, and an application packet.

Students enrolled in applied lessons will take a performance evaluation (PE) every semester, which will determine a portion of their grade for lessons. Students enrolled in the fourth semester of applied lessons will give a 20-minute shared recital in lieu of the juried examination. At least 2 weeks before giving all required recitals, students are required to receive a passing recommendation on a recital preview performance evaluation with at least two faculty members in attendance. All students enrolled in applied lessons are also required to concurrently enroll in convocation. Passage of a lower division exam covering music theory and aural skills, and an upper division performance evaluation, are required before admittance into the upper division. Transfer credits are awarded at the discretion of the Director. An examination may be required for all transfer credits. Concentrations in a specific instrument or performance area will be accomplished through lessons and ensembles on that instrument.

**Ensembles:** Specific performance group requirements are controlled by the degree plan in each concentration area and are subject to the music advisor's judgment in the best interest of that student. All students enrolled in applied lessons must participate in an ensemble appropriate to and required by their degree program.

**GENERAL EDUCATION (39 CRS)**

**Area I. Communications (9 cr)**

**Area II. Mathematics (3 cr)**

**Area III. Laboratory Sciences (8 cr)**

**Area IV. Social/Behavioral Sciences (6-9 cr)**

**Area V. Humanities and Fine Arts (6-9 cr)**

HUM 100 FYE: History and Culture of Northern New Mexico (3)

**Area VI. Library Technology (1 cr)**

LT 101 Library Research Skills (1)

**Area VII. Foreign Language (3 cr)**

**Lower division requirements (36-38 crs)**

MUS 100 Aural Skills I (1)
<table>
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<th>Course Title</th>
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<tbody>
<tr>
<td>MUS 106</td>
<td>Aural Skills II (1)</td>
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<tr>
<td>MUS 200</td>
<td>Aural Skills III (1)</td>
<td></td>
</tr>
<tr>
<td>MUS 206</td>
<td>Aural Skills IV (1)</td>
<td></td>
</tr>
<tr>
<td>MUS 131</td>
<td>Introduction to Music (3)</td>
<td></td>
</tr>
<tr>
<td>MUS 150</td>
<td>Music Theory I (3)</td>
<td></td>
</tr>
<tr>
<td>MUS 151</td>
<td>Music Theory II (3)</td>
<td></td>
</tr>
<tr>
<td>MUS 224</td>
<td>Music Theory III (3)</td>
<td></td>
</tr>
<tr>
<td>MUS 225</td>
<td>Music Theory IV (3)</td>
<td></td>
</tr>
<tr>
<td>MUS 104</td>
<td>Ensemble I (1)*</td>
<td></td>
</tr>
</tbody>
</table>

*Courses that fit requirement for Ensembles = Jazz Major Ensemble, Gospel Choir, Eagle Choir, Mixed Chorus, Women’s Ensemble, Musica Folklorica Ensemble, Mariachi Ensemble

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>MUS 120</td>
<td>Ensemble II (1)*</td>
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</tr>
<tr>
<td>MUS 243</td>
<td>Ensemble III (1)*</td>
<td></td>
</tr>
<tr>
<td>MUS 244</td>
<td>Ensemble IV (1)*</td>
<td></td>
</tr>
<tr>
<td>MUS 140</td>
<td>Applied Lessons I (2)</td>
<td></td>
</tr>
<tr>
<td>MUS 141</td>
<td>Applied Lessons II (2)</td>
<td></td>
</tr>
<tr>
<td>MUS 241</td>
<td>Applied Lessons III (2)</td>
<td></td>
</tr>
<tr>
<td>MUS 242</td>
<td>Applied Lessons IV (2)</td>
<td></td>
</tr>
<tr>
<td>MUS 291</td>
<td>Recital (1)</td>
<td></td>
</tr>
<tr>
<td>MUS 249</td>
<td>Chamber Music I (1)</td>
<td></td>
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<tr>
<td>MUS XXX</td>
<td>Music Elective of choice (3)</td>
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<tr>
<td>MUS 230</td>
<td>Class Piano 3 (1)* or test out</td>
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</tr>
<tr>
<td>MUS 321</td>
<td>Class Piano 4 (1)* or test out</td>
<td></td>
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<td>CONVO 1</td>
<td>Convocation 1 (0)</td>
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<td>CONVO 2</td>
<td>Convocation 2 (0)</td>
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<tr>
<td>CONVO 3</td>
<td>Convocation 3 (0)</td>
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<tr>
<td>CONVO 4</td>
<td>Convocation 4 (0)</td>
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### Upper-division Core requirements (38 cr)

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<tr>
<td>MUS 310</td>
<td>Western Music History I (3) (WIC)</td>
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<td>MUS 324</td>
<td>Western Music History II (3)</td>
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<tr>
<td>MUS 340</td>
<td>Applied Lessons V (3)</td>
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<tr>
<td>MUS 341</td>
<td>Applied Lessons VI (3)</td>
<td></td>
</tr>
<tr>
<td>MUS 440</td>
<td>Applied Lessons VII (3)</td>
<td></td>
</tr>
<tr>
<td>MUS 441</td>
<td>Applied Lessons VIII (3)</td>
<td></td>
</tr>
<tr>
<td>MUS 313</td>
<td>Ensemble V (1)*</td>
<td></td>
</tr>
<tr>
<td>MUS 314</td>
<td>Ensemble VI (1)*</td>
<td></td>
</tr>
<tr>
<td>MUS 410</td>
<td>Ensemble VII (1)*</td>
<td></td>
</tr>
<tr>
<td>MUS 411</td>
<td>Ensemble VIII (1)*</td>
<td></td>
</tr>
<tr>
<td>MUS 349</td>
<td>Chamber Music 2 (2)</td>
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</tr>
<tr>
<td>MUS 449</td>
<td>Chamber Music 3 (2)</td>
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<tr>
<td>MUS 391</td>
<td>Junior Recital (1)</td>
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<tr>
<td>MUS 491</td>
<td>Senior Recital (2)</td>
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<tr>
<td>MUS 306</td>
<td>Conducting I (3)</td>
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<tr>
<td>Course Code</td>
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<td>Credits</td>
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<tr>
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<tr>
<td>MUS 307</td>
<td>Pedagogy</td>
<td>(3)</td>
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<tr>
<td>MUS 381</td>
<td>Music Technology</td>
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<td>CONVO 7</td>
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<td>CONVO 8</td>
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**UPPER DIVISION CONCENTRATIONS**

**Instrumental Performance (21 cr)**

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<tbody>
<tr>
<td>MUS 322</td>
<td>Music Theory Elective I</td>
<td>(3)</td>
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<tr>
<td>MUS 323</td>
<td>Music Theory Elective II</td>
<td>(3)</td>
</tr>
<tr>
<td>MUS 424</td>
<td>Music History Elective (3)* any semester, topic variable</td>
<td>(3)</td>
</tr>
<tr>
<td>MUS 435</td>
<td>Instrumentation and Orchestration</td>
<td>(3)</td>
</tr>
<tr>
<td>MUS 407</td>
<td>Music Literature (major instrument)</td>
<td>(3)</td>
</tr>
<tr>
<td>MUS 403</td>
<td>Performance Practice</td>
<td>(3)</td>
</tr>
<tr>
<td>MUS 307</td>
<td>Conducting 2</td>
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**Contemporary Music (27 cr)**

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<tbody>
<tr>
<td>MUS 305</td>
<td>Contemporary Theory I</td>
<td>(3)</td>
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<td>MUS 325</td>
<td>Contemporary Theory II</td>
<td>(3)</td>
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<tr>
<td>MUS 204</td>
<td>Jazz Keyboard Skills I (3)</td>
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<tr>
<td>MUS 425</td>
<td>Contemporary Music History I</td>
<td>(3)</td>
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<td>MUS 426</td>
<td>Contemporary Music History II</td>
<td>(3)</td>
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<tr>
<td>MUS 433</td>
<td>Contemporary Arranging</td>
<td>(3)</td>
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<tr>
<td>MUS 403</td>
<td>Performance Practice</td>
<td>(3)</td>
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<tr>
<td>MUS 351</td>
<td>Contemporary Improvisation</td>
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<td>MUS 436</td>
<td>Transcription and Composition</td>
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**New Mexican Music (21 cr)**

<table>
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<td>MUS 322</td>
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<tr>
<td>MUS 323</td>
<td>Music Theory Elective II</td>
<td>(3)</td>
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<tr>
<td>MUS 427</td>
<td>New Mexican Music History</td>
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<tr>
<td>MUS 433</td>
<td>Contemporary Arranging</td>
<td>(3)</td>
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<tr>
<td>MUS 428</td>
<td>New Mexican Music Literature</td>
<td>(3)</td>
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<tr>
<td>MUS 403</td>
<td>Performance Practice</td>
<td>(3)</td>
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<tr>
<td>MUS 436</td>
<td>Transcription and Composition</td>
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**Voice Performance (23 cr)**

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<tr>
<td>MUS 450</td>
<td>Diction for Singers</td>
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<tr>
<td>MUS 322</td>
<td>Music Theory Elective I</td>
<td>(3)</td>
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<tr>
<td>MUS 323</td>
<td>Music Theory Elective II</td>
<td>(3)</td>
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<tr>
<td>MUS 424</td>
<td>Music History Elective (3) * any semester; topic variable</td>
<td>(3)</td>
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<tr>
<td>MUS 435</td>
<td>Instrumentation and Orchestration</td>
<td>(3)</td>
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<tr>
<td>MUS 407</td>
<td>Music Literature (major instrument)</td>
<td>(3)</td>
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<tr>
<td>Course</td>
<td>Credits</td>
<td>Description</td>
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<tr>
<td>DANC 149</td>
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<td>Ballet I</td>
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<td>THE 122</td>
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**TOTAL CREDITS: 130-136**

**SEQUENCE OF COURSES**

**Lower Division**

**Semester 1**

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<tr>
<td>SPCH 130</td>
<td>3</td>
<td>Public Speaking</td>
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<tr>
<td>MUS 131</td>
<td>3</td>
<td>Introduction to Music</td>
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<td>MUS 150</td>
<td>3</td>
<td>Music Theory I</td>
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<tr>
<td>MUS 100</td>
<td>1</td>
<td>Aural Skills I</td>
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<tr>
<td>MUS 140</td>
<td>2</td>
<td>Applied Lessons I</td>
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<tr>
<td>MUS 104</td>
<td>1</td>
<td>Ensemble I</td>
</tr>
<tr>
<td>MUS 230</td>
<td>1</td>
<td>Class piano 3</td>
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**TOTAL: 17 credits**

**Semester 2**

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<tr>
<td>ENG 112 or ENG 116</td>
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<td>Technical Writing</td>
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<td>Area II Math Elective</td>
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<td>Area III Lab Science Elective</td>
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<td>MUS 151</td>
<td>3</td>
<td>Music Theory II</td>
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<td>MUS 106</td>
<td>1</td>
<td>Aural Skills II</td>
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<td>MUS 141</td>
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<td>Applied Lessons II</td>
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<tr>
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<td>MUS 321</td>
<td>1</td>
<td>Class piano 4</td>
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**TOTAL: 18 credits**

**Semester 3**

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<tr>
<td>Area III Lab Science Elective</td>
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<td>MUS 224</td>
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<td>MUS 200</td>
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<td>MUS 241</td>
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<td>MUS 243</td>
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<td>MUS 249</td>
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</table>

**TOTAL: 18 credits**
Semester 4

Area IV  Social/Behavioral Science (3 cr)
Area V  Humanities & Fine Arts (3 cr)
MUS  225  Music Theory IV (3 cr)
MUS  206  Aural Skills IV (1 cr)
MUS  242  Applied Lessons IV (2 cr)
MUS  2XX  Music elective (3 cr)
MUS  244  Ensemble IV (1 cr)
MUS  291  Recital (1 cr)

TOTAL: 17 credits

Upper Division

INSTRUMENTAL PERFORMANCE CONCENTRATION

Semester 5

MUS  322  Music Theory V (3 cr)
MUS  310  Western Music History I (3 cr)
MUS  340  Applied Lessons V (3 cr)
MUS  313  Ensemble V (1 cr)
MUS  349  Chamber Music II (2 cr)
MUS  306  Conducting I (3 cr)
MUS  381  Music Technology (3 cr)
CONVO 5  Convocation 5 (0 cr)

TOTAL: 18 credits

Semester 6

MUS  323  Music Theory VI (3 cr)
MUS  324  Western Music History II (3 cr)
MUS  341  Applied Lessons VI (3 cr)
MUS  314  Ensemble VI (1 cr)
MUS  391  Junior Recital (1 cr)
MUS  307  Conducting II (3 cr)
CONVO 6  Convocation 6 (0 cr)

TOTAL: 14 credits

Semester 7

MUS  424  Music History Elective I (3 cr)
MUS  440  Applied Lessons VII (3 cr)
MUS  410  Ensemble VII (1 cr)
MUS  449  Chamber Music III (2 cr)
MUS  403  Performance Practice (3)
MUS  435  Instrumentation/Orchestration (3)
CONVO 7  Convocation 7 (0 cr)

TOTAL: 15 credits
Semester 8
MUS 407 Music Literature (3 cr)
MUS 441 Applied Lessons VIII (3 cr)
MUS 411 Ensemble VIII (1 cr)
MUS 491 Senior Recital (2 cr)
MUS 365 Pedagogy (3 cr)
CONVO 8 Convocation 8 (0 cr)
TOTAL: 12 credits

CONTEMPORARY MUSIC CONCENTRATION

Semester 5
MUS 305 Contemporary Theory I (3 cr)
MUS 310 Western Music History I (3 cr)
MUS 340 Applied Lessons V (3 cr)
MUS 313 Ensemble V (1 cr)
MUS 349 Chamber Music II (2 cr)
MUS 306 Conducting I (3 cr)
MUS 381 Music Technology (3 cr)
CONVO 5 Convocation 5 (0 cr)
TOTAL: 18 credits

Semester 6
MUS 325 Contemporary Theory II (3 cr)
MUS 324 Western Music History II (3 cr)
MUS 341 Applied Lessons VI (3 cr)
MUS 314 Ensemble VI (1 cr)
MUS 391 Junior Recital (1 cr)
MUS 204 Jazz Keyboard Skills I (3 cr)
CONVO 6 Convocation 6 (0 cr)
TOTAL: 14 credits

Semester 7
MUS 425 Contemporary Music Hist I (3)
MUS 440 Applied Lessons VII (3 cr)
MUS 410 Ensemble VII (1 cr)
MUS 449 Chamber Music III (2 cr)
MUS 351 Contemporary Improv (3)
MUS 403 Performance Practice (3)
MUS 433 Contemp. Arr. (3 cr)
CONVO 7 Convocation 7 (0 cr)
TOTAL: 18 credits
Semester 8
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<td>2 cr</td>
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<td>MUS 365</td>
<td>Pedagogy</td>
<td>3 cr</td>
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<tr>
<td>MUS 436</td>
<td>Transcription/Composition</td>
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TOTAL: 15 credits

NEW MEXICAN MUSIC CONCENTRATION

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<td>MUS 310</td>
<td>Western Music History I</td>
<td>3 cr</td>
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<td>MUS 340</td>
<td>Applied Lessons V</td>
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<tr>
<td>MUS 313</td>
<td>Ensemble V</td>
<td>1 cr</td>
</tr>
<tr>
<td>MUS 349</td>
<td>Chamber music II</td>
<td>2 cr</td>
</tr>
<tr>
<td>MUS 306</td>
<td>Conducting I</td>
<td>3 cr</td>
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<tr>
<td>MUS 381</td>
<td>Music Technology</td>
<td>3 cr</td>
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TOTAL: 18 credits

Semester 6
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<td>MUS 324</td>
<td>Western Music History II</td>
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<td>MUS 341</td>
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<td>3 cr</td>
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<tr>
<td>MUS 314</td>
<td>Ensemble VI</td>
<td>1 cr</td>
</tr>
<tr>
<td>MUS 391</td>
<td>Junior Recital</td>
<td>1 cr</td>
</tr>
<tr>
<td>MUS 307</td>
<td>Conducting II</td>
<td>3 cr</td>
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TOTAL: 14 credits

Semester 7
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<td>MUS 440</td>
<td>Applied Lessons VII</td>
<td>3 cr</td>
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<td>MUS 410</td>
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<tr>
<td>MUS 449</td>
<td>Chamber Music III</td>
<td>2 cr</td>
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<tr>
<td>MUS 403</td>
<td>Performance Practice</td>
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<td>MUS 433</td>
<td>Contemporary Arranging</td>
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TOTAL: 15 credits
### Semester 8

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<td>MUS 428</td>
<td>New Mexican Music Lit (3)</td>
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<tr>
<td>MUS 441</td>
<td>Applied Lessons VIII (3 cr)</td>
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<tr>
<td>MUS 411</td>
<td>Ensemble VIII (1 cr)</td>
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<tr>
<td>MUS 491</td>
<td>Senior Recital (2 cr)</td>
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<tr>
<td>MUS 365</td>
<td>Pedagogy (3 cr)</td>
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<td>MUS 436</td>
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**TOTAL: 15 credits**

### VOICE CONCENTRATION

#### Semester 5

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<td>MUS 310</td>
<td>Western Music History I (3 cr)</td>
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<td>MUS 340</td>
<td>Applied Lessons V (3 cr)</td>
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<td>Ensemble V (1 cr)</td>
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<tr>
<td>MUS 349</td>
<td>Chamber Music II (2 cr)</td>
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<td>MUS 306</td>
<td>Conducting I (3 cr)</td>
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<td>MUS 381</td>
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**TOTAL: 18 credits**

#### Semester 6

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<tr>
<td>MUS 324</td>
<td>Western Music History II (3 cr)</td>
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<tr>
<td>MUS 341</td>
<td>Applied Lessons VI (3 cr)</td>
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<td>MUS 314</td>
<td>Ensemble VI (1 cr)</td>
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<td>MUS 391</td>
<td>Junior Recital (1 cr)</td>
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<tr>
<td>DANC 149</td>
<td>Ballet I (2 cr)</td>
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**TOTAL: 13 credits**

#### Semester 7

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<td>MUS 410</td>
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<td>MUS 449</td>
<td>Chamber Music III (2 cr)</td>
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<td>MUS 450</td>
<td>Diction for Singers (3)</td>
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**TOTAL: 15 credits**
### Associate of Arts

**MUSIC**

This program is designed for those interested in pursuing a career in music by continuing with Bachelor's degree study at NNMC or other regional institutions. It is identical to the first two years of the Bachelor's degree in music.

Students enrolled in applied lessons will take a performance evaluation (PE) every semester, which will determine a portion of their grade for lessons. Students enrolled in the fourth semester of applied lessons will give a 20-minute shared recital in lieu of the juried examination. At least 2 weeks before giving the MUS 291 recital, students are required to receive a passing recommendation on a recital preview performance evaluation with at least two faculty members in attendance. All students enrolled in applied lessons are also required to concurrently enroll in convocation. Passage of a lower division exam covering music theory and aural skills, and an upper division performance evaluation, are required before admittance into the upper division. Transfer credits are awarded at the discretion of the Director. An examination may be required for all transfer credits. Concentrations in a specific instrument or performance area will be accomplished through lessons and ensembles on that instrument.

**Ensembles:** Specific performance group requirements are controlled by the degree plan in each concentration area and are subject to the music advisor's judgment in the best interest of that student. All students enrolled in applied lessons must participate in an ensemble appropriate to and required by their degree program.

### GENERAL EDUCATION (36 CR)

**Area I. Communications (9 cr)**

**Area II. Mathematics (3 cr)**

**Area III. Laboratory Sciences (8 cr)**

**Area IV. Social/Behavioral Sciences (6-9 cr)**

**Area V. Humanities and Fine Arts (6-9 cr)**

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<tr>
<th>Course</th>
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<tr>
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**Semester 8**

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<td>MUS 491</td>
<td>Senior Recital (2 cr)</td>
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<td>MUS 365</td>
<td>Pedagogy (3 cr)</td>
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<td>THE 122</td>
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**TOTAL: 15 credits**
Area VI. Library Technology (1 cr)

<table>
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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>LT 101</td>
<td>Library Research Skills (1)</td>
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**PROGRAM REQUIREMENTS (36-38 CR)**

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<td>MUS 131</td>
<td>Intro to Music (3)</td>
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<td>MUS 120</td>
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<td>MUS 243</td>
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<td>MUS 242</td>
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<td>MUS 291</td>
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<td>MUS 321</td>
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*Courses that fit requirement for Ensembles = Jazz Major Ensemble, Gospel Choir, Eagle Choir, Mixed Chorus, Women’s Ensemble, Musica Folklorica Ensemble, Mariachi Ensemble

**TOTAL CREDITS: 71-73**

**SUGGESTED SEQUENCE OF STUDY**

**Semester 1**

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<td>MUS 131</td>
<td>Introduction to Music (3 cr)</td>
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<td>MUS 150</td>
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<td>MUS 100</td>
<td>Aural Skills I (1 cr)</td>
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<tr>
<td>MUS 140</td>
<td>Applied Lessons I (2 cr)</td>
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<tr>
<td>MUS 104</td>
<td>Ensemble I (1 cr)</td>
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MUS 230 Class piano III (1 cr)* or test out
CONVO 1 Convocation 1 (0 cr)
TOTAL: 17 credits

Semester 2

ENG 112 or ENG 116 Technical Writing (3 cr)
Area II Math Elective (3 cr)
Area III Lab Science Elective 1 (4 cr)
MUS 151 Music Theory II (3 cr)
MUS 200 Aural Skills II (1 cr)
MUS 141 Applied Lessons II (2 cr)
MUS 120 Ensemble II (1 cr)
MUS 321 Class piano IV (1 cr)* or test out
CONVO 2 Convocation 2 (0 cr)
TOTAL: 18 credits

Semester 3

Area III Lab Science Elective (4 cr)
Area IV Social/Behavioral Science (3 cr)
Area V Humanities & Fine Arts (3 cr)
MUS 224 Music Theory III (3 cr)
MUS 200 Aural Skills III (1 cr)
MUS 241 Applied Lessons III (2 cr)
MUS 243 Ensemble III (1 cr)
MUS 249 Chamber Music I (1 cr)
CONVO 3 Convocation 3 (0 cr)
TOTAL: 18 credits

Semester 4

Social Sciences 3 (3 cr)
Humanities (3 cr)
Library Research Skills (1 cr)
MUS 224 Music Theory IV (3 cr)
MUS 206 Aural Skills IV (1 cr)
MUS 242 Applied Lessons IV (2 cr)
Music Elective (3 cr)
MUS 244 Ensemble IV (1 cr)
Recital (0 cr)
TOTAL: 17 credits
Associate of Arts
SOUTHWEST HERITAGE ARTS

This program is designed to maximize transfer of credit to a four-year program. In addition to a generous exposure to general education courses, you will concentrate your efforts in southwest heritage arts.

GENERAL EDUCATION (36 CR)

Area I. Communications (9 cr)
Area II. Mathematics (3 cr)
Area III. Laboratory Sciences (8 cr)
Area IV. Social/Behavioral Sciences (6-9 cr)
Area V. Humanities and Fine Arts (6-9 cr)

HUM 100 FYE: History and Culture of Northern New Mexico (3)

Area VI. Library Technology (1 cr)
LT 101 Library Research Skills (1)

PROGRAM REQUIREMENTS (29-31 CR)

ART 115 Traditional Woodcarving (3)
ART 130 Tinsmithing I (3)
ART 152 Traditional Spanish Colonial Retablo Making (3)
ART 158 Bulto Making (3)
ART 180 Micaceous Pottery I (3)
ART 208 History of NM Art and Architecture (3)
SCFM 110L Spanish Col Furniture Making Lab (4)
ART 231 Tinsmithing II or ART 150 Basic Jewelry and Metalworking (3)*
FA 100 Intro. to Weaving (1-3) or ART 156 Pueblo Sash Weaving (3)*

Choose ONE course from the following:

ART 110 Drawing I (3)
ART 120 Painting I (3)
ART 122 Design Elements in Art (3)
ART 155 Pueblo Embroidery (3)*
ART 160 Pottery I (3)
ART 170 Photography I (3)
ART 190 Silversmithing (3)*

* Poeh Ctr. Only

TOTAL CREDITS: 65-67
Associate of Applied Science  
SPANISH-COLONIAL FURNITURE MAKING

This program prepares you for entry-level woodworking positions specializing in the Spanish Colonial style.

GENERAL EDUCATION (19-20 CR)

Communications (6 cr)

ENG 111  English Composition I (3)

*Choose ONE of the following:*

ENG 112  English Composition II (3)
ENG 116  Technical Writing (3)
SPCH 130  Public Speaking (3)

Math/Computers/Lab Sciences (6-7 cr)

BCIS 102  Computer Literacy (3)
MATH  Elective at/above MATH 130 (4)

Social/Behavioral Sciences (3 cr)

Elective (3)

Humanities and Fine Arts (3 cr)

HIST 260  History of NM (3)
HUM 100  FYE: History and Culture of Northern New Mexico (3)

Library Technology (1 cr)

LT 101  Library Research Skills (1)

PROGRAM REQUIREMENTS (46 CR)

SCFM 150  Introduction to Spanish Colonial Furniture (3)
SCFM 150L  Introduction to Spanish Colonial Furniture Lab (9)
SCFM 160L  Spanish Colonial Furniture Making Lab (12)
SCFM 170L  Advanced Spanish Colonial Furniture Making Lab (12)
DRFT 100  Introduction to Computer Aided Drafting (4)
ART 170  Photography I (3)
Elective (3)

TOTAL CREDITS: 66-67
Certificate
SPANISH-COLONIAL FURNITURE MAKING

This program will prepare you for entry-level employment in the furniture-making field in existing shops or in your own wood-working business, with an emphasis on the Spanish-Colonial style.

GENERAL EDUCATION (7-8 CR)

Communications (4 cr)
ENG 108N Basic Composition I (4)

Mathematics (3-4 cr)
MATH 100N (4) or a higher level math course (3)

PROGRAM REQUIREMENTS (36 CR)

SCFM 150 Introduction to Spanish Colonial Furniture (3)
SCFM 150L Introduction to Spanish Colonial Furniture Lab (9)
SCFM 160L Spanish Colonial Furniture Making Lab (12)
SCFM 170L Advanced Spanish Colonial Furniture Making Lab (12)

TOTAL CREDITS: 43-44

Associate of Arts
THEATRE

This program is designed to maximize transfer of credit to a four-year program. In addition to a generous exposure to general education courses, you will concentrate your efforts in theatre.

GENERAL EDUCATION (36 CR)

Area I. Communications (9 cr)
Area II. Mathematics (3 cr)
Area III. Laboratory Sciences (8 cr)
Area IV. Social/Behavioral Sciences (6-9 cr)
Area V. Humanities and Fine Arts (6-9 cr)
HUM 100 FYE: History and Culture of Northern New Mexico (3)

Area VI. Library Technology (1 cr)
LT 101 Library Research Skills (1)

PROGRAM REQUIREMENTS (34 CR)

THE 120 Introduction to Theatre I (3)
THE 122  Acting I (3)
THE 124  Acting for Film, TV, and Commercial (3)
THE 126  Speech and Movement for Theatre (2)
OR
THE 228  Performance Poetry (2)
THE 130  History of Theatre (3)
THE 132  Stagecraft (3)
THE 150  Stage Production (2)
THE 218  Acting II (3)
THE 224  Playwriting (3)
THE 238  Teatro Chicana/o (3)

Choose six (6) credit hours from the following:

THE 134  Introduction to Costuming (2)
THE 196  Introduction to Light and Sound (3)
THE 220  Introduction to Theatre II (3)
THE 225  Creative Drama Techniques for the Classroom K-12 (3)
THE 226  Directing & Play Production (2)
THE 250  Stage Management (2)
THE 290  Design for the Theatre (3)
THE 296  Advanced Light & Sound (3)

TOTAL CRedITS: 70

Associate of Arts
TECHNICAL THEATRE

This program is designed to maximize transfer of credit to a four-year program. In addition to a generous exposure to general education courses, you will concentrate your efforts in one of the following areas of specialization.

GENERAL EDUCATION (36 CR)

Area I. Communications (9 cr)

Area II. Mathematics (3 cr)

Area III. Laboratory Sciences (8 cr)

Area IV. Social/Behavioral Sciences (6-9 cr)

Area V. Humanities and Fine Arts (6-9 cr)

Area VI. Library Technology (1 cr)
**PROGRAM REQUIREMENTS (34 CR)**

<table>
<thead>
<tr>
<th>Course</th>
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<td>THE 120</td>
<td>Introduction to Theatre I</td>
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<td>THE 290</td>
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<tr>
<td>THE 296</td>
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</table>

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<td>THE 250</td>
<td>Stage Management</td>
<td>2</td>
</tr>
</tbody>
</table>

**TOTAL CREDITS: 69**
Department of Humanities, Social Sciences, & Language and Letters

The mission of the Humanities, Social Sciences, & Language and Letters Department is to provide high quality academic course work, either leading to the Bachelor's in Integrated Studies, an associate degree, or in preparation for transfer into a baccalaureate degree program. Additionally, this department provides excellent scholastic support in the many general education courses required for any degree program pursued at Northern. Our programs are relevant to students' personal and professional needs; they develop critical thinking skills and help transform individuals into organized, focused, empowered, and independent lifelong learners.

Our programs are organized into two categories: Humanities and Social Science. These include a Bachelor of Arts degree in Integrated Studies in the Humanities and Social Sciences, with a choice of emphasis in Humanities, Psychology, or Pueblo Indian Studies.

We also offer associate of arts degrees and associate of applied science programs designed to help you prepare for employment and/or transfer to a four-year program.

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Bachelor of Arts
INTEGRATED STUDIES in the
HUMANITIES and SOCIAL SCIENCES:
Humanities, Psychology, Pueblo Indian Studies

This degree will prepare students for many careers that require reliable and flexible thinking and communication, such as in local and state government, public service, and managerial careers. It will also provide a solid basis for those wishing to pursue advanced degrees in various fields, including psychology, law, and cultural anthropology. This is an academic degree that seeks to provide not only the skills and knowledge promised by a liberal arts education but also the encouragement that will allow students to use the skills and knowledge to become effective and inspired leaders.


Area I. Communications (9 cr)
ENG 111 English Composition I (3)
ENG 112 English Composition II (3)
SPCH 130 Public Speaking (3)

Area II. Mathematics (3 cr)
Choose one of the following courses:
MATH 145 Introduction to Probability and Statistics (3) *
MATH 150 College Algebra (3)
MATH 151 Conceptual Mathematics (3)
Prerequisite: Math 129

Area III. Laboratory Sciences (8 cr)

Area IV. Social/Behavioral Sciences (6-9 cr)**
PIS 200 Introduction to Pueblo Indian Studies (3)
PSY 105 General Psychology (3)
Select one more Area IV course from the list on page 26 (0-3).

Area V. Humanities and Fine Arts (6-9 cr)**
HUM 100 FYE: History and Culture of Northern New Mexico (3)
Select one or two more Area V courses from the list on page 27 (3-6).

Area VI. Library Technology (1 cr)
LT 101 Library Research Skills (1)

Area VII. Foreign Language (3 cr)
(All PIS students must take PIS 245 to satisfy Area VII.)
* Students choosing the emphasis in Psychology must take MATH 145; students choosing other emphases may choose MATH 150 or MATH 151.
**Students must complete at least 15 credits between areas IV & V, maintaining at least two disciplines in each area.
INTEGRATED STUDIES CORE PROGRAM REQUIREMENTS (34 CR)

Students must take all courses from Groups A and B, and 9 hours from Group C. In addition to the Integrated Studies core, students must complete all requirements for their specific emphasis.

Group A: Integrating Core (9 cr)

HSS 288 Foundations of Integrated Studies (3)
HSS 388 Integrated Studies II (3)
HSS 488 Integrated Studies III (3) (WIC)

Group B: The Dialogues (16 cr)

HSS 311 Readings in the Social Sciences (4)
HSS 320 Genesis of Mathematics and Science (4)
HSS 414 Humanity and Creativity (4)
HSS 421 History, Literature, Art, and Philosophy (4)

Group C: Cross Disciplinary Requirements (9 cr)

Students must take at least three hours in each of the two emphases other than the primary emphasis for a total of nine credit hours. For example, if the primary emphasis is psychology, a student could take six hours of Pueblo Indian Studies courses and three hours of Humanities courses. At least six of these hours must be upper division.

INTEGRATED STUDIES EMPHASIS REQUIREMENTS

Students must choose one of the following emphases or concentrations: Humanities, Psychology, or Pueblo Indian Studies.

Humanities Emphasis (27 cr)

Students must complete a total of 27 credits, including at least three credits (i.e., one course) from each of the four groups below. Of the 27 credits in this emphasis, at least 15 credits must be in upper-division courses; the rest may be chosen from the classes listed below or from within the prefixes that fall under the umbrella of humanities courses (courses with a prefix of ENG, HUM, HIST, and PHIL).

Group A: Philosophy

PHIL 300 Comparative Metaphysics (3)
PHIL 364 Great Works of Western Philosophy (3)
PHIL 366 Great Works of Asian Thought (3)
PHIL 452 Philosophy of Technology (3)

Group B: Humanistic Approaches to Myth, Psyche, and Religion

ENG 324 Literature as Psychological Insight (3)
HUM 390 Topics in the Study of Religion (3)
HUM 460 Mythic Ways of Knowing (3)

Group C: Literature

ENG 265/PIS 265 Native American Literature I (3)
ENG 266/PIS 266 Native American Literature II (3)
ENG 318 Oral Traditions: Folk Stories (3)
ENG 456 Shakespearean Plays (3)
ENG 468 Ecocriticism (3)

Group D: Critical Thinking
PHIL 250 Critical Thinking (3)

Elective Requirement for Humanities Emphasis (28 cr)
The remaining 28 credits for the baccalaureate degree (totaling 128 credits) with this emphasis are electives. No more than four hours of HPER, and no more than six studio hours, may count toward the degree.

Psychology Emphasis (30 cr)
Students must complete all courses from Group A and at least 12 hours from Group B. Topic courses and independent studies may qualify in any group for substitute credits, with departmental approval. This emphasis articulates with the AA in Substance Abuse Counseling and with the AA in Human Services in the Social Sciences and General Studies.

Group A. The following 18 credit hours are required:
PHIL 250 Critical Thinking (3)
PSY 210 Theories of Personality (3)
PSY 232 Abnormal Psychology (3)
PSY 290 Developmental Psychology (3)
PSY 321 Research Design in Psychology (3)
PSY 421 Research in Psychology (3)

Group B. Students must choose 12 credits from the following courses:
PSY 260 Family Systems Theory (3)
PSY 301 Biopsychology (3)
PSY 302 Issues in Death and Dying (3)
PSY 305 Positive Psychology (3)
PSY 370 Social Psychology (3)
PSY 400 Topics in Psychology (3)
PSY 410 Comparative Perspectives in Psychology (3)
PSY 411 Human Ecology (3)
PSY 456 Grief Theory and Process (3)
PSY 477 Gender and Sexuality (3)

Additional Electives for Psychology Emphasis (25 cr)
The remaining 25 credits for the baccalaureate degree (totaling 128 credits) with this emphasis are electives. No more than four hours of HPER, and no more than six studio hours, may count toward the degree.

Pueblo Indian Studies Emphasis (24 cr)
Twenty-four credits, at least 12 upper division, must be completed from the courses listed below. Students must complete all courses in Group A and at least 18 hours in
Group B. Topics courses and independent studies may qualify for substitute credits with permission of the department chair. (This emphasis articulates with the A.A. in Pueblo Indian Studies.)

**Group A. The following 6 credit hours are required:**

- PIS 458 Advanced Research (3)
- PIS 488 Pueblo Indian Studies Senior Seminar (3)

**Group B. At least 18 hours must be chosen from the following courses:**

- PIS 220 Pueblo Arts, Crafts, and Cultures (3)
- PIS 240 Research Topics in Pueblo Indian Studies (1-6)
- PIS 242 Pueblo Indian Women’s Lives (3)
- PIS 250 Internship in Tribal Leadership I (3)
- PIS 251 Internship in Tribal Leadership II (3)
- PIS 252 Pueblo Indian History (3)
- PIS 256 Pueblo Indian Government (3)
- PIS 258 Indian Gaming, Entrepreneurship, Sovereignty, & Casinos (3)
- PIS 265/ENG 265 Native American Literature I (3)
- PIS 266/ENG 266 Native American Literature II (3)
- PIS 346/HUM 346 Tourism and the Arts in New Mexico Pueblos (3)
- PIS 370 Pueblo Indians and Education (3)
- PIS 372 Pueblo Health Concepts and Practices (3)
- PIS 381/HUM 381 Spirit of Place: Native Senses of Place (3)
- PIS 386 Special Topics in PIS (3)
- PIS 483 Tewa Ethnobiology: Plants & Animals of the Tewa World (3)
- PIS 484 Agricultural Practices of the Pueblo World (3)

**Additional Electives for PIS Emphasis (31 cr)**

The remaining 31 credits for the baccalaureate degree (totaling 128 credits) with this emphasis are electives. No more than four credits of HPER, and no more than six studio hours, may count toward the degree.

**TOTAL CREDITS: 128**

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**Associate of Arts**

**CRIMINAL JUSTICE**

This program is designed to prepare students for entry-level positions in law enforcement or related agencies and for transfer into a four-year program.

**GENERAL EDUCATION (36 CR) SEE PAGES 25-28.**

**Area I. Communications (9 cr)**

**Area II. Mathematics (3 cr)**

- MATH 145 Introduction to Probability and Statistics (3)
OR
MATH 150 College Algebra (3)

Area III. Laboratory Sciences (8 cr)

Area IV. Social/Behavioral Sciences (6-9 cr)
PSY 105 General Psychology (3)
SOC 101 Introduction to Sociology (3)
Choose one additional survey course from the list on page 26 (0-3).

Area V. Humanities and Fine Arts (6-9 cr)
HUM 100 FYE: History and Culture of Northern New Mexico (3)
Choose one or two Area V courses from the list on page 27 (3-6)

Area VI. Library Technology (1 cr)
LT 101 Library Research Skills (1)

PROGRAM REQUIREMENTS (28 CR)
CJ 111 Introduction to Criminal Justice System (4)
CJ 132 Introduction to Criminology (3)
CJ 201 Criminal Law (3)
CJ 202 Courts and Criminal Justice (3)
CJ 221 Criminal Justice & Comm. Relations (3)
CJ 224 Introduction to Corrections (3)
CJ 233 Juvenile Justice Procedures (3)

Choose one of the following two courses:
CJ 231 Criminal Investigation (3)
CJ 228 Forensic Investigation (3)

Choose one elective with one of the following prefixes: CJ, SOC, PSY(3)

TOTAL CREDITS: 64

Associate of Arts

LIBERAL ARTS

This program provides a strong academic foundation for successful transfer to various bachelor degrees, such as the Bachelor of Arts in Integrated Studies at Northern or a Bachelor of Arts in University Studies at other institutions. This degree fosters exploration of differing perspectives and fields of study and provides development of essential skills of critical thinking, communication, and creativity, and supports awareness of community and diversity. Students earning an AA degree in Liberal Arts will identify a concentration as an emphasis for the degree.


Area I. Communications (9 cr)
Area II. Mathematics (3 cr)

Area III. Laboratory Sciences (8 cr)

Area IV. Social/Behavioral Sciences (6-9 cr)

Area V. Humanities and Fine Arts (6-9 cr)
  HUM 100 FYE: History and Culture of Northern New Mexico (3)
  Select one or two of the Area V courses listed on page 27.

Area VI. Library Technology (1 cr)
  LT 101 Library Research Skills (1)

PROGRAM REQUIREMENTS (27 CR)

Foundations in the Liberal Arts (9 cr)
  Critical Thinking: PHIL 250 Critical Thinking (3)
  Language other than English: SPAN courses or PIS 245 (3)
  Creative Studies (3): Choose one course from the following list of courses
    ENG 221 Creative Writing
    ART 105, 107, 208, or 211
    MUS 105
    THE 120, 130, 224, or 238
    DANC 240 or 245
    FDMA 101, 102, 115, 280

Concentration in a Specific Discipline (9 cr)
  Students are required to take three courses (9 credit hours) from one of
  the following academic areas:
    Philosophy (PHIL)
    History (HIST)
    Literature (ENG, excluding ENG 111, 112, and 116)
    Sociology (SOC)
    Psychology (PSY)
  Students may choose to create a concentration of Cultural Studies, which would
  combine approved courses with ENG, PIS, HUM, HIS, PHIL, SOC, CHIC, or ANTH
  prefixes.

Electives (9 cr)
  Must be taken from the following discipline areas:
    Area I. Communications
    Area II. Mathematics
    Area III. Laboratory Sciences
    Area IV. Social/Behavioral Sciences
    Area V. Humanities and Fine Arts

Elective from any discipline (3 cr)

TOTAL CREDITS: 63
Associate of Arts
HUMAN SERVICES in the SOCIAL SCIENCES

This program will provide an environment that broadens perspectives, builds self-awareness, and develops effective skills for human services work. This is designed for students wishing to complete a baccalaureate degree in the social sciences, including psychology, sociology, or social work.


Area I. Communications (9 cr)
   ENG 111  English Composition I (3)
   ENG 112  English Composition II (3)
   SPCH 130  Public Speaking (3)

Area II. Mathematics (3 cr)
   MATH 145  Introduction to Probability and Statistics (3)
   OR
   MATH 150  College Algebra (3)

Area III. Laboratory Sciences (8 cr)

Area IV. Social/Behavioral Sciences (9 cr)
   ANTH 102  Introduction to Social and Cultural Anthropology (3)
   PSY 105  General Psychology (3)
   SOC 101  Introduction to Sociology (3)

Area V. Humanities and Fine Arts (6 cr)
   HUM 100  FYE: History and Culture of Northern New Mexico (3)
   Select one Area V course from the list of courses on page 27 (3).

Area VI. Library Technology (1 cr)
   LT 101  Library Research Skills (1)

PROGRAM REQUIREMENTS (30 CR)
   PSY 210  Theories of Personality & Counseling (3)
   PSY 215  Basic Counseling Skills (3)
   PSY 232  Abnormal Psychology (3)
   PSY 260  Family Systems Theory and Counseling Applications (3)
   PSY 275  Group Process (3)
   PSY 280  Practicum for Human Services (3)
   PSY 290  Developmental Psychology (3)
   SOC 140  Sociology of Substance Abuse (3)
   OR
   SOC 141  Effects of Alcohol and Drug Abuse (3)
   SOC 216  Ethnic and Intercultural Relations (3)
   SOC 225  Marriage & Family (3)

TOTAL CREDITS: 66
Associate of Applied Science

POLICE SCIENCE

This program is designed specifically to allow police officers who have completed the New Mexico Law Enforcement Academy to complete an associate degree within the field of law enforcement.

When students apply to Northern for this major, they must supply the Registrar a copy of their Law Enforcement Academy certificate of completion in order to obtain credit for the training.


Area I. Communications (6 cr)
- ENG 111 English Composition I (3)
- SPCH 130 Public Speaking (3)

Areas II and III. Mathematics/Computers/Laboratory Science (6 cr)
- BCIS 102 Computer Literacy (3)
- MATH 145 Intro to Probability & Statistics (3)

Area IV. Social/Behavioral Sciences (6 cr)
- PSCI 210 State and Local Government (3)
- SOC 101 Introduction to Sociology (3)

Area V. Humanities and Fine Arts (6 cr)
- HUM 100 FYE: History and Culture of Northern New Mexico (3)
- PHIL 220 Ethics (3)

Area VI. Library Technology (1 cr)
- LT 101 Library Research Skills (1)

PROGRAM REQUIREMENTS (43 CR)
- CJ 228 Forensic Investigation (3)
- ENG 116 Technical Writing (3)
- SOC 140 Sociology of Alcohol & Substance Abuse (3)
- SPAN 100, 101/102 or 111/112 (3)

NM Law Enforcement Academy Certification which includes credit for the following courses (31 cr):
- CJ 111 Introduction to Criminal Justice (4)
- CJ 201 Criminal Law (3)
- HPER Electives (2) [meets graduation requirement]
- SOC 213 Deviant Behavior (3)

Law Enforcement Electives (19):
- LE 130 Patrol, Communications, and Investigations (6)
- LE 235 Traffic Enforcement and Accident Investigation (3)
- LE 236 Police Proficiency I (3)
LE 237 Police Proficiency II (3)
LE 238 Police Proficiency III (3)
LE 239 First Responder for Law Enforcement (1)

TOTAL CREDITS: 68

Associate of Arts
PUEBLO INDIAN STUDIES

This program is committed to broadening students’ knowledge in the histories, languages, culture, art, and contemporary situations of Pueblo Indian nations and peoples. It is designed to protect the integrity and identity of the Pueblo populations of New Mexico and Arizona and to create a learning environment conducive to critical and creative thought.

It not only stresses sound academic preparation in the classroom but also encourages students to interact and conduct research with Pueblo Indian governments, organizations, and communities, with whom Northern continues to form strong partnerships.

Completion of this program will provide a foundation for degrees in the social sciences, intercultural and interdisciplinary studies, and for employment in Pueblo Indian enterprises, including Pueblo Indian government offices, casinos, schools, health clinics, etc.


Area I. Communications (9 cr)
Area II. Mathematics (3 cr)
Area III. Laboratory Sciences (8 cr)
Area IV. Social/Behavioral Sciences (6-9 cr)
Area V. Humanities and Fine Arts (6-9 cr)
   HUM 100 FYE: History and Culture of Northern New Mexico (3)
   Select one or two Area V courses from the list of courses on page 27 (3-6).

Area VI. Library Technology (1 cr)
   LT 101 Library Research Skills (1)

PROGRAM REQUIREMENTS (30 CR)

The following six credit hours are required:
   PIS 200 Introduction to Pueblo Indian Studies (3)
   PIS 245 Special Topics in Tribal Languages (3)

Choose 24 credits from the following courses:
   PIS 220 Pueblo arts, Crafts, and Culture (3)
   PIS 240 Research Topics in Pueblo Indian Studies (1-6)
   PIS 242 Pueblo Indian Women’s Lives (3)
PIS 250 Internship in Tribal Leadership I (3)
PIS 251 Internship in Tribal Leadership II (3)
PIS 252 Pueblo Indian History (3)
PIS 256 Pueblo Indian Government (3)
PIS 258/BA 258 Indian Gaming, Entrepreneurship, Sovereignty & Casinos (3)
PIS 265/ENG 265 Native American Literature I (3)
PIS 266/ENG 266 Native American Literature II (3)

TOTAL CREDITS: 66

Certificate
REIDENTIAL ASSISTANT

This program is for Resident Assistants at Santa Fe Indian School. It meets the requirements established by the U.S. Department of Education for meeting the requirements for staff working in a residential setting.

The prerequisite for entering and remaining in this program is a current certification in CPR/First Aid.

GENERAL EDUCATION (12-13 CR)

Area I. Communications (3-4 cr)
ENG 109N Basic Composition II (4)

Area II. Mathematics (3-4 cr)
MATH 100N Fundamentals of Mathematics (4)

Area V. Humanities and Fine Arts (6 cr)
Choose 2 courses from the following:
ENG 265 Native American Literature I (3)
HIST 250 American Indian History (3)
PIS 200 Introduction to Pueblo Indian Studies (3)

PROGRAM REQUIREMENTS (21 CR)

HSCI 109 CPR/First Aid (.5)
PSY 150 Personal Growth (3)
PSY 215 Basic Counseling Skills (3)
ED 220 Educational Psychology (3)
PSY 229 Adolescence Psychology (3)
PSY 260 Family Systems Theory and Counseling Application (3)
PSY 262 Intervening in Adolescent Behavior (3)
SOC 140 Sociology of Substance Abuse (3)

TOTAL CREDITS: 33-34
Associate of Arts  
SUBSTANCE ABUSE COUNSELOR

This program will provide an environment that broadens perspectives, builds self-awareness, and develops effective skills for substance abuse counseling. This program is designed for students wishing to complete a baccalaureate degree in the social sciences, including psychology, sociology, or social work, with an emphasis in substance abuse counseling. This degree also prepares students for licensing as a Substance Abuse Counselor in New Mexico.


Area I. Communications (9 cr)
- ENG 111 English Composition I (3)
- SPCH 130 Public Speaking (3)
- ENG 112 English Composition II (3)

Area II. Mathematics (3 cr)
- MATH 145 Introduction to Probability and Statistics (3)

Area III. Laboratory Sciences (8 cr)
- BIOL 110/L Survey of Modern Biology w/Lab (4)
  Students may substitute BIOL 201/L for BIOL 110/L.
  Choose one other Area III survey course (with lab) from the list on page 26.

Area IV. Social/Behavioral Sciences (9 cr)
- ANTH 102 Introduction to Social and Cultural Anthropology (3)
- PSY 105 General Psychology (3)
- SOC 101 Introduction to Sociology (3)

Area V. Humanities and Fine Arts (6 cr)
- HUM 100 FYE: History and Culture of Northern New Mexico (3)
  Students must select one other Area V course from the list on page 27 (3).

Area VI. Library Technology (1 cr)
- LT 101 Library Research Skills (1)

PROGRAM REQUIREMENTS (33 CR)
- PSY 210 Theories of Personality and Counseling Applications (3)
- PSY 215 Basic Counseling Skills (3)
- PSY 232 Abnormal Psychology (3)
- PSY 240 Alcohol & Drug Abuse Evaluation & Assessment (3)
- PSY 241 Alcohol & Drug Abuse Treatment & Referral (3)
- PSY 260 Family Systems Theory and Counseling Applications (3)
- PSY 275 Group Process (3)
- PSY 281 Practicum—Substance Abuse Counselors (3)
- SOC 140 Sociology of Alcohol & Drug Abuse (3)
SOC 141 Effects of Alcohol and Drug Abuse (3)
SOC 213 Deviant Behavior (3)

TOTAL CREDITS: 69

Associate of Applied Science
SUBSTANCE ABUSE COUNSELOR

This program is designed to prepare students to become Substance Abuse Counselors.


Area I. Communications (6 cr)

ENG 111 English Composition I (3)
Choose one of the following courses:
ENG 112 English Composition II (3)
SPCH 130 Public Speaking (3)

Areas II and III. Mathematics/Computers/Laboratory Science (7 cr)

Choose one Area III survey course (with lab) from the list of courses on page 26 (4).
Choose one of the following courses:
BCIS 102 Computer Literacy (3)
MATH 145 Introduction to Probability and Statistics (3) or
MATH 150 College Algebra (3)

Area IV. Social/Behavioral Sciences (9 cr)

ANTH 102 Introduction to Social and Cultural Anthropology (3)
PSY 105 General Psychology (3)
SOC 101 Introduction to Sociology (3)

Area V. Humanities and Fine Arts (3 cr)

HUM 100 FYE: History and Culture of Northern New Mexico (3)

Area VI. Library Technology (1 cr)

LT 101 Library Research Skills (1)

PROGRAM REQUIREMENTS (39 CR)

PSY 210 Theories of Personality and Counseling Applications (3)
PSY 215 Basic Counseling Skills (3)
PSY 232 Abnormal Psychology (3)
PSY 240 Alcohol & Drug Abuse Evaluation & Assessment (3)
PSY 241 Alcohol & Drug Abuse Treatment & Referral (3)
PSY 260 Family Systems Theory and Counseling Applications (3)
PSY 275 Group Process (3)
PSY 281 Practicum-Substance Abuse Counselors (3)
PSY 290 Developmental Psychology (3)
SOC 140 Sociology of Alcohol and Drug Abuse (3)
SOC 141 Effects of Alcohol and Drug Abuse (3)
SOC 213 Deviant Behavior (3)
Elective in Social/Behavioral Sciences (3)

TOTAL CREDITS: 65
Department of Biology, Chemistry & Environmental Sciences

The mission of the Biology, Chemistry and Environmental Science Department at NNMC is to provide a progressive and balanced learning experience to prepare students for placement in advanced professional programs, and applied technical and research-oriented careers. Our department is committed to student education in fundamental concepts, laboratory and field techniques, research principles and practices that are aligned with marketable skills and the pursuit of life-long scholarship to meet the needs of our culturally rich and diverse student population.

Many of the courses in the associate programs offered by this department are designed to transfer to four-year programs. The Associate of Science degree in Science is specifically designed to represent the first two-years of a general four-year science program.

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Associate of Applied Science
AGROECOLOGY and SUSTAINABLE SYSTEMS

This program will provide an interdisciplinary survey of the concepts, principles, and tools from diverse fields that contribute to understanding of the challenges related to agricultural production and sustainability such as climate change, environmental degradation, and unequal distribution of limited resources. The program introduces perspectives from the natural and social sciences, arts, humanities, and professional disciplines. It explores how their interconnection increases the prospects for a sustainable future as one of working with rather than working against natural systems. Students will study natural and human-engineered systems for diversity, stability, and resilience. Students can receive permaculture training (through local entities) and receive course credit as part of this degree.

GENERAL EDUCATION (22 CR) SEE PAGES 25-28.

Area I. Communications (6 cr)

ENG 111 English Composition I (3)
Choose one of the following:
ENG 112 English Composition II (3)
ENG 116 Technical Writing (3)
SPCH 130 Public Speaking (3)

Areas II and III. Mathematics/Computers/Laboratory Science (9 cr)

BCIS 102 Computer Literacy (3)
MATH 145 Intro to Probability and Statistics (3)
MATH 150 College Algebra (3)

Area IV. Social/Behavioral Sciences (3 cr)

Area V. Humanities and Fine Arts (3 cr)

HUM 100 FYE: History and Culture of Northern New Mexico (3)

Area VI. Library Technology (1 cr)

LT 101 Library Research Skills (1)

PROGRAM REQUIREMENTS (44 CR)

ES 112/L Introduction to Environmental Science I with lab (4)
BIOL 203/L Ecology and Evolution with lab(4)
BIOL 210/L Microbiology (4)
BA 214 Small Business Management (3)
ES 211 Introduction to Soil Science and Management (3)
ES 211L Introduction to Soil Science and Management Lab (1)
ES 225 Principles of Agriculture Ecology (3)
ES 250 Watershed and Hydrology Management (3)
ES 257 Economics of Food & Agriculture in Industrial Development (3)
ES 265 Principles of Sustainable Agriculture (3)
Bachelor of Science
BIOLOGY

This program prepares you to pursue a graduate degree in biology or to go on to professional schools in the health sciences. Training in biology also prepares you for a wide variety of career choices, including careers in research in academic, government, and private research laboratories, science teaching, positions in the biomedical, biotechnology, and pharmaceutical industries, and other related fields. While many positions are open to those holding a BS degree, some may only be open to those holding advanced graduate degrees.

Matriculation into this program is dependent upon:

1) your having been granted final regular admission to Northern;
2) your having a cumulative grade point average of at least 2.50 in all coursework attempted at Northern and/or other institutions;
3) your having completed 48 credits of college-level work, including the following required courses: BIOL 151/L, BIOL 201/L, BIOL 202/L, BIOL 203/L, and BIOL 204/L, CHEM 121/L, CHEM 122/L, and MATH 150; and
4) submission of a personal statement to the program director in which you outline your interest in biology and your career goals.


Area I. Communications (9 cr)
Area II. Mathematics (3 cr)
Area III. Laboratory Sciences (8 cr)
   BIOL 201/L Introduction to Molecular and Cell Biology with lab (4)
   BIOL 202/L Principles of Genetics with lab (4)
Area IV. Social/Behavioral Sciences (6-9 cr)
Area V. Humanities and Fine Arts (6-9 cr)
   HUM 100 FYE: History and Culture of Northern New Mexico (3)
   PHIL 220 Ethics (3)
Area VI. Library Technology (1 cr)
   LT 101 Library Research Skills (1)
Area VII. Foreign Language (3 cr)
PROGRAM REQUIREMENTS (74 CR)

Biology Core Curriculum (12)

BIOL 151/L Science and Society with Lab (4)
BIOL 203/L Ecology and Evolution with Lab (4)
BIOL 204/L Plant and Animal Form and Function with Lab (4)

Required Seminar and Research Experience (5)

BIOL 292 Undergraduate Research Experience (3)
or
BIOL 392 Undergraduate Research Experience (3)
BIOL 472 Undergraduate Seminar in Biology (1)
BIOL 492 Biology Capstone Project (1)

300-level courses from the following (8):

BIOL 329 Cellular and Molecular Biology (4)
BIOL 349/L Essentials of Anatomy and Physiology with lab (4)
BIOL 351/L General Microbiology with lab (4)
BIOL 360/L Plant Biology with lab (4)
BIOL 371/L Invertebrate Biology with lab (4)
BIOL 386 Vertebrate Zoology (4)

400-level courses from the following (16)

BIOL 406 Stream Ecology and Field Methods (3)
BIOL 410 Bioinformatics (3)
BIOL 412/L Developmental Biology with lab (4)
BIOL 416/L Cells and Tissues with lab (4)
BIOL 418 Conservation Biology (3)
BIOL 422/L Comparative Vertebrate Anatomy with lab (4)
BIOL 425 Molecular Genetics (4)
BIOL 426/L Neurobiology with lab (4)
BIOL 431 Drugs and Their Actions (3)
BIOL 435/L Comparative Animal Physiology with lab (4)
BIOL 451/L General Ecology with lab (4)
BIOL 456 Immunology (4)
BIOL 467 Evolutionary Plant Ecology (3)

REQUIRED SUPPORTIVE COURSES IN MATH, CHEMISTRY, and PHYSICS (33 CR)

Mathematics (10)

MATH 145 Introduction to Probability and Statistics (3)
MATH 155 Trigonometry (3)
MATH 162 Calculus I (4)

Chemistry (15)

CHEM 121/L General Chemistry I with lab (4)
CHEM 122/L General Chemistry II with lab (4)
CHEM 301/L Organic Chemistry I with lab (4)
CHEM 341 Survey of Biochemistry (3)

Physics (8)
PHYS 121/L Applied Physics I with lab (4)
PHYS 122/L Applied Physics II with lab (4)

MINOR Concentrations or Elective Credits (20 cr)
Minor concentrations are not required, but you may choose one of the following (20 cr):

Mathematics (20)
MATH 163 Calculus II (4)
MATH 264 Calculus III (4)
Choose any 4 additional upper-division (300-400) mathematics courses.

Chemistry and Physics (20)
CHEM 302/L Organic Chemistry II with lab (4)
CHEM 311 Physical Chemistry (3)
PHYS 262/L General Physics with Lab (4)
Choose any 3 of the following:
PHYS 302 Optics (3)
PHYS 330 Introduction to Modern Physics (3)
PHYS 331 Thermodynamics and Statistical Mechanics (3)
PHYS 405 Electricity and Magnetism (3)

If you do not choose a minor concentration, you must choose 20 additional credits of elective coursework in biology, chemistry, physics, mathematics, the humanities, or the social sciences. If you took BIOL 292, then at least 7 of these elective credits must be at the upper-division level; if you took BIOL 392, then at least 4 of these elective credits must be at the upper-division level.

TOTAL CREDITS: 133
Associate of Science
BIOLOGY

The associate of science in biology program prepares you to pursue a baccalaureate degree in biology for pre-professional medical studies. While some positions are open to holders of the associate degree, most of the opportunities exist at the bachelor, master, and doctoral levels.


Area I. Communications (9 cr)
Area II. Mathematics (3 cr)
Area III. Laboratory Sciences (8 cr)
  BIOL 201/L Introduction to Molecular and Cell Biology with lab (4) (Fall)
    Prerequisite: CHEM 121L
  BIOL 202/L Principles of Genetics with lab (4)
    Prerequisite: BIOL 201/L
Area IV. Social/Behavioral Sciences (6-9 cr)
Area V. Humanities and Fine Arts (6-9 cr)
  HUM 100 FYE: History and Culture of Northern New Mexico (3)
  PHIL 220 Ethics (3)
Area VI. Library Technology (1 cr)
  LT 101 Library Research Skills (1)

PROGRAM REQUIREMENTS (35 CR)
  BIOL 151/L Science and Society w/lab* (4)
    Prerequisite: ENG 111
  BIOL 203/L Ecology and Evolution with lab (4) (Fall)
    Prerequisite: BIOL 202/L and MATH 150
  BIOL 204/L Plant and Animal Form and Function with lab (4) (Spring)
    Prerequisite: BIOL 203/L and CHEM 122/L
  CHEM 121/L General Chemistry I with Lab (4)
    Prerequisite: MATH 130, high school chemistry, or ACT score of 19 or higher in Natural Science.
  CHEM 122/L General Chemistry II with Lab (4)
    Prerequisite: CHEM 121/L
  MATH 145 Introduction to Probability and Statistics (3)
    Prerequisite: MATH 130 or adequate score on the Course Placement Evaluation
  PHYS 121/L Applied Physics I with lab (4)
    Prerequisite: MATH 130 or adequate score on the Course Placement Evaluation

Electives (choose 8 cr from the following):
  BIOL 160/L Biotechnology Seminar I with lab (4) (Fall)
    Prerequisite: BIOL 110/L or higher level BIOL
BIOL 210/L Microbiology with lab (4)
Prerequisite: CHEM 110/L
BIOL 260/L Biotechnology Seminar II with lab (4)
Prerequisite: BIOL 160/L
BIOL 290 Undergraduate Research Experience I (3)
BIOL 292 Undergraduate Research Experience II (3)
Prerequisite: BIOL 290
CHEM 221/L Quantitative Analysis with lab (4) (Spring)
Prerequisite: CHEM 122/L and MATH 145
ES 112/L Environmental Science with lab (4) (Fall)
MATH 155 Trigonometry (3)*
Prerequisite: MATH 150
MATH 162 Calculus I (4)*
Prerequisite: MATH 150 and MATH 155 or MATH 160

*Students wishing to pursue a BS in Biology are strongly encouraged to take Math 155 Trigonometry and Math 162 Calculus I, as they are also requirements for the BS in Biology program.

TOTAL CREDITS: 71

Associate of Applied Science
CHEMICAL TECHNICIAN

This program provides you with the concepts and practical skills needed for employment as a chemical technician. It is designed to complement training for full-time employment or for students seeking such employment. You may use this program in planning to transfer to related academic programs.

GENERAL EDUCATION (31 CR) SEE PAGES 25-28

Area I. Communications (9 cr)

Areas II and III. Mathematics/Computers/Laboratory Science (12 cr)
BCIS 102 Computer Literacy (3)
MATH 145 Introduction to Probability & Statistics (3)
MATH 150 College Algebra (3)
MATH 155 Trigonometry (3)

Area IV. Social/Behavioral Sciences (3 cr)
SOC 211 Small Group Communications Studies (3)

Area V. Humanities and Fine Arts (6 cr)
HUM 100 FYE: History and Culture of Northern New Mexico (3)
PHIL 220 Ethics (3)

Area VI. Library Technology (1 cr)
LT 101 Library Research Skills (1)
PROGRAM REQUIREMENTS (38 CR)

CHEM 121/L General Chemistry I with lab (4)
CHEM 122/L General Chemistry II with lab (4)
CHEM 210/L Integrated Organic & Biochemistry with lab (4)
CHEM 221/L Quantitative Analysis with lab (4)
CHEM 260 Standard Laboratory Protocols (4)
CS 105 Introduction to Databases (3)
CS 205 Databases (3)
ES 126 Introduction to Waste Management (3)
ES 134 OSHA Health and Safety (3)
ES 138 Environmental & Occupational Law and Regulations (3)
Elective (3)

TOTAL CREDITS: 69

Bachelor of Science
ENVIRONMENTAL SCIENCE


Area I. Communications (9 cr)
    ENG 111  English Composition I (3)
    ENG 116  Technical Writing (3)
    SPCH 130  Public Speaking (3)

Area II. Mathematics (10 cr)
    MATH 145  Introduction to Probability and Statistics (3)
    MATH 150  College Algebra (3)
    MATH 162  Calculus I (4)

Area III. Laboratory Sciences (24 cr)
    BIOL 202/L Genetics with Lab (4)
    BIOL 203/L Ecology and Evolution with Lab (4)
    BIOL 210/L Microbiology with Lab (4)
    CHEM 121/L General Chemistry I with Lab (4)
    CHEM 210/L Integrated Organic & Biochemistry with Lab (4)

Choose one of the following:
    ES 201L Environmental Physical and Chemical Processes with Lab (4)
    CHEM 122/L General Chemistry II with Lab (4)

Area IV. Social/Behavioral Sciences (6-9 cr)

Area V. Humanities and Fine Arts (6-9 cr)
    HUM 100  FYE: History and Culture of Northern New Mexico (3)
    PHIL 220  Ethics (3)
Area VI. Library Technology (1 cr)
   LT 101 Library Research Skills (1)

Area VII. Foreign Language (3 cr)

PROGRAM REQUIREMENTS (34 CR)

ES 112/L Introduction to Environmental Sciences I with Lab (4)
ES 325 Principles of Physical Hydrology (3)
ES 203 Introduction to GIS/GPS and Cartography (3)
ES 320 Environmental Ethics (3)
ES 338 Environmental Law and Regulations (3)
ES 3XX Undergraduate Research Experience (3)
ES 250 Watershed and Hydrology Management (3)
ES 401 Community Participation in Environmental Planning (3)
ES 412 Environmental Health and Toxicology (3)
ES 415 Energy and Resource Development (3) (WIC)
ES 480 Senior Capstone—Field Experience (3)

YOU MUST CHOOSE ONE OF THE FOLLOWING MAJORS (35-37 CR):

Agriculture (36 cr)
   BIOL 360/L Plant Biology with Lab (4)
   ES 211/L Introduction to Soil Science and Management (4)
   ES 225 Principles of Agricultural Ecology (3)
   ES 308 Invasive Species (3)
   ES 311 Plant Pathology (3)
   ES 340 Principles in Crop Production (3)
   ES 365 Principles of Sustainable Agriculture (3)
   ES 410 Soil Testing and Interpretation (3)
   ES 410L Soil Testing and Interpretation Lab (1)
   ES 411 Soil Management and Fertility (3)
   ES 416 Irrigation and Drainage (3)
   ES 457 Economics, Food, & Agriculture in Industrial Development (3)
Electives (3 cr) Upper-division courses (as approved by dept. advisor)

Environmental Science and Monitoring (35 cr)
   ES 121 Environmental Air Monitoring (3)
   ES 307 Atmospheric Science (3)
   ES 330 Principles of Environmental and Occupational Health (3)
   RAD 234 Introduction to Radiation Science and Technology (4)
   ES 333 Radiation Biology (3)
   ES 336 Environmental Sampling and Instrumentation (3)
   ES 336L Environmental Sampling and Instrumentation Lab (3)
   ES 400 Environmental Management (3)
   ES 402 Environment, Economics, and Sustainability (3)
   ES 410 Soil Testing and Interpretation (3)
ES 410L Soil Testing and Interpretation Lab (1)
Electives (3 cr) Upper-division courses (as approved by dept. advisor)

**Concentration Area: Natural Resources Science and Management (37 cr)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ES 103</td>
<td>Introduction to Natural Resource Mgmt &amp; Science (3)</td>
<td></td>
</tr>
<tr>
<td>FOR 113</td>
<td>Dendrology</td>
<td>(3)</td>
</tr>
<tr>
<td>ES 120</td>
<td>Forest and Range Ecology (3)</td>
<td></td>
</tr>
<tr>
<td>ES 308</td>
<td>Invasive Species</td>
<td>(3)</td>
</tr>
<tr>
<td>ES 310</td>
<td>Mensuration and Biometrics (3)</td>
<td></td>
</tr>
<tr>
<td>ES 317</td>
<td>Rangeland Management (3)</td>
<td></td>
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<tr>
<td>ES 318</td>
<td>Silviculture (3) (WIC)</td>
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<tr>
<td>ES 404</td>
<td>Forest Health, Restoration, and Management (3)</td>
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<tr>
<td>ES 410</td>
<td>Soil Testing and Interpretation (3)</td>
<td></td>
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<tr>
<td>ES 410</td>
<td>Soil Testing and Interpretation Lab (1)</td>
<td></td>
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<tr>
<td>ES 411</td>
<td>Soil Management and Fertility (3)</td>
<td></td>
</tr>
<tr>
<td>ES 414</td>
<td>Wildland Fire Management (3)</td>
<td></td>
</tr>
<tr>
<td>ES 319</td>
<td>Principles of Wildlife Science &amp; Mgmt (3)</td>
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</tr>
</tbody>
</table>

**TOTAL CREDITS: 131-133**

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**Associate of Applied Science**

**ENVIRONMENTAL SCIENCE**

This program is designed to provide the technical skills needed to competently gather, record, and analyze critical environmental data to perform simple health risk assessments and evaluations.

**GENERAL EDUCATION (33 CR) SEE PAGES 25-28.**

**Area I. Communications (9 cr)**

- ENG 111 English Composition I (3)
- ENG 116 Technical Writing (3)
- SPCH 130 Public Speaking (3)

**Areas II and III. Mathematics/Computers/Laboratory Science (14 cr)**

- BIOL 203/L Ecology and Evolution with lab (4)
- ES 112/L Introduction to Environmental Science with lab (4)
- MATH 145 Introduction to Probability and Statistics (3)
- MATH 150 College Algebra (3)

**Area IV. Social/Behavioral Sciences (3 cr)**

- SOC 211 Small Group Communications Studies (3)

**Area V. Humanities and Fine Arts (6 cr)**

- HUM 100 FYE: History and Culture of Northern New Mexico (3)
- PHIL 220 Ethics (3)
Area VI. Library Technology (1 cr)
  LT 101 Library Research Skills (1)

PROGRAM REQUIREMENTS (39 CR)
  BIOL 210/L Microbiology with lab (4)
  CHEM 121/L General Chemistry I with lab (4)
  CHEM 210/L Integrated Organic & Biochemistry with lab (4)
  ES 121 Environmental Air Monitoring (3)
  ES 203 Introduction to GIS/GPS (3)
  ES 236 Environmental Sampling and Instrumentation (3)
  ES 238 Environmental Law and Regulations (3)
  ES 250 Watershed and Hydrology Management (3)
  RAD 234L Introduction to Radiation Science and Technology (4)
  RAD 238L Introduction to Radiation Protection (4)

*Choose one of the following:*
  ES 201/L Environmental Physical and Chemical Processes with lab (4)
  CHEM 122/L General Chemistry II with lab (4)

TOTAL CREDITS: 72

Certificate
ENVIRONMENTAL MONITORING

This program provides hands-on training in environmental monitoring methods at Los Alamos National Laboratory. It is intended for current employees of the environmental programs of the 4 ACCORD tribes (Santa Clara, San Ildefonso, Jemez, and Cochiti). Students pursuing this specific program are exempt from Northern’s minimum residency requirement.

GENERAL EDUCATION (8 CR)

Area I. Communications (4 cr)
  ENG 108N Basic Composition I (4)

Area II. Mathematics (4 cr)
  MATH 102N Basic Algebra (4) or MATH 103N (4) or higher level math.

PROGRAM REQUIREMENTS (11 CR)
  ES 100 Environment, Safety, Health, and Radiation (2)
  ES 121 Environmental Air Monitoring (3)
  ES 123 Environmental Hydrology & Ecology (3)
  ES 260 Environmental Radioactivity (3)

TOTAL CREDITS: 19
Associate of Applied Science
LABORATORY BIOTECHNOLOGY

The Laboratory Biotechnology program is designed to train you as a laboratory technician with industrial, medical, or research laboratories. The program provides a practical background and experience with the techniques and instruments used for the isolation and analysis of biomedical and biotechnological samples.

Students in this program may participate in internships with the National Center for Genome Research (NCGR) in Santa Fe or in similar summer institutes at universities throughout the nation.


Area I. Communications (6 cr)

Areas II and III. Mathematics/Computers/Laboratory Science (6 cr)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>MATH 145</td>
<td>Introduction to Probability and Statistics (3)</td>
</tr>
<tr>
<td>MATH 150</td>
<td>College Algebra (3)</td>
</tr>
</tbody>
</table>

Area IV. Social/Behavioral Sciences (3 cr) Area V. Humanities and Fine Arts (9 cr)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUM 100</td>
<td>FYE: History and Culture of Northern New Mexico (3)</td>
</tr>
<tr>
<td>PHIL 110</td>
<td>Introduction to Philosophical Problems (3)</td>
</tr>
<tr>
<td>PHIL 220</td>
<td>Ethics (3)</td>
</tr>
</tbody>
</table>

Area VI. Library Technology (1 cr)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>LT 101</td>
<td>Library Research Skills (1)</td>
</tr>
</tbody>
</table>

PROGRAM REQUIREMENTS (43 CR)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 201/L</td>
<td>Principles of Molecular and Cell Biology with lab (4)</td>
</tr>
<tr>
<td>BIOL 202/L</td>
<td>Principles of Genetics with lab (4)</td>
</tr>
<tr>
<td>BIOL 160/L</td>
<td>Biotechnology Seminar I (4)</td>
</tr>
<tr>
<td>BIOL 210/L</td>
<td>Microbiology with lab (4)</td>
</tr>
<tr>
<td>BIOL 260/L</td>
<td>Biotechnology Seminar II with lab (4)</td>
</tr>
<tr>
<td>BIOL 290</td>
<td>Undergraduate Research Experience I (3)</td>
</tr>
<tr>
<td>BIOL 292</td>
<td>Undergraduate Research Experience II (3)</td>
</tr>
<tr>
<td>CHEM 121/L</td>
<td>General Chemistry I with lab (4)</td>
</tr>
<tr>
<td>CHEM 122/L</td>
<td>General Chemistry II with lab (4)</td>
</tr>
<tr>
<td>CHEM 210/L</td>
<td>Integrated Organic &amp; Biochemistry (4)</td>
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<tr>
<td>ES 134</td>
<td>OSHA Health/Safety (3)</td>
</tr>
<tr>
<td>HSCI 125</td>
<td>Medical Terminology (2)</td>
</tr>
</tbody>
</table>

TOTAL CREDITS: 68
Associate of Applied Science
NATURAL RESOURCES MANAGEMENT

This program is designed to provide entry-level skills for employment with state and federal natural resource management agencies. In addition, when you complete this program, you will have completed the coursework needed to either transfer to a four-year program to pursue a degree in the field of range ecology or continue towards Northern’s Bachelor of Science degree in Environmental Science with a concentration in natural resource management.


Area I. Communications (9 cr)
- ENG 111 English Composition I (3)
- ENG 116 Technical Writing (3)
- SPCH 130 Public Speaking (3)

Areas II and III. Mathematics/Computers/Laboratory Science (29 cr)
- BIOL 202/L Principles of Genetics with lab (4)
- BIOL 203/L Ecology and Evolution with lab (4)
- CHEM 121/L General Chemistry I with lab (4)
- ES 112/L Introduction to Environmental Science I with lab (4)
- GEOL 101/L Physical Geology with lab (4)
- BCIS 102 Computer Literacy (3)
- MATH 145 Introduction to Probability and Statistics (3)
- MATH 150 College Algebra (3)

Area IV. Social/Behavioral Sciences (6 cr)

Area V. Humanities and Fine Arts (6 cr)
- HUM 100 FYE: History and Culture of Northern New Mexico (3)
- PHIL 220 Ethics (3)

Area VI. Library Technology (1 cr)
- LT 101 Library Research Skills (1)

PROGRAM REQUIREMENTS (20 CR)
- ES 103 Introduction to Natural Resource Mgmt & Science (3)
- ES 120 Forest and Range Ecology (3)
- ES 203 Introduction to GIS/GPS and Cartography (3)
- ES 211 Introduction to Soil Science and Management (3)
- ES 211L Introduction to Soil Science and Management Lab (1)
- ES 217 Rangeland Management (3)
- ES 250 Watershed and Hydrology Management (3)
- ES 299 Practicum in Environmental Science (1)

TOTAL CREDITS: 71
Associate of Applied Science
PRE-FORESTRY

This program is designed to provide entry-level skills for employment with the U.S. Forest Service or with other state and federal natural resource management agencies. In addition, when you complete this program, you will have completed the coursework needed to transfer to four-year programs to pursue a degree in the forestry discipline.


Area I. Communications (9 cr)
- ENG 111 English Composition I (3)
- ENG 116 Technical Writing (3)
- SPCH 130 Public Speaking (3)

Areas II and III. Mathematics/Computers/Laboratory Science (29 cr)
- BIOL 202/L Genetics with lab (4)
- BIOL 203/L Ecology and Evolution with lab (4)
- CHEM 121/L General Chemistry I with lab (4)
- ES 112/L Introduction to Environmental Science I with lab (4)
- GEOL 101/L Physical Geology with lab (4)
- BCIS 102 Computer Literacy (3)
- MATH 145 Introduction to Probability and Statistics (3)
- MATH 150 College Algebra (3)

Area IV. Social/Behavioral Sciences (3 cr)

Area V. Humanities and Fine Arts (6 cr)
- HUM 100 FYE: History and Culture of Northern New Mexico (3)
- PHIL 220 Ethics (3)

Area VI. Library Technology (1 cr)
- LT 101 Library Research Skills (1)

PROGRAM REQUIREMENTS (23 CR)
- ES 103 Introduction to Natural Resource Mgmt & Science (3)
- ES 203 GIS and GPS (3)
- ES 120 Forest and Range Ecology (3)
- ES 210 Soil Management and Fertility (3)
- ES 210L Soil Management and Fertility Lab (1)
- ES 217 Rangeland Management (3)
- ES 250 Watershed and Hydrology Management (3)
- ES 299 Special Environmental Topics (1)
- FOR 113 Dendrology (3)

TOTAL CREDITS: 71
Associate of Applied Science
RADIATION PROTECTION

This program is designed to prepare you for a career as a Health Protection Technician in environmental programs and scientific laboratories. The program prepares you to conduct radiation surveys, interpret survey data, assess personnel protection requirements, and instruct personnel in appropriate protective procedures and environmental clean-up.


Area I. Communications (6 cr)
- ENG 111 English Composition I (3)
- ENG 116 Technical Writing (3)

Areas II and III. Mathematics/Computers/Laboratory Science (33 cr)
- BIOL 201/L Principles of Molecular and Cell Biology with lab (4)
- BIOL 202/L Genetics with lab (4)
- CHEM 121/L General Chemistry I with lab (4)
- CHEM 122/L General Chemistry II with lab (4)
- BCIS 102 Computer Literacy (3)
- MATH 130 Intermediate Algebra (4)
- MATH 145 Introduction to Probability and Statistics (3)
- MATH 150 College Algebra (3)
- PHYS 121/L Applied Physics I with lab (4)

Area IV. Social/Behavioral Sciences (3 cr)

Area V. Humanities and Fine Arts (3 cr)
- HUM 100 FYE: History and Culture of Northern New Mexico (3)

Area VI. Library Technology (1 cr)
- LT 101 Library Research Skills (1)

PROGRAM REQUIREMENTS (19 CR)
- RDPR 233 Radiation Biology (3)
- RDPR 234 Introduction to Radiation Science & Technology (4)
- RDPR 238 Introduction to Radiation Protection (4)
- RDPR 242 Problems in Radiation Protection (4)
- RDPR 243 Practical Radiological Programs and Sampling Methods (4)

TOTAL CREDITS: 65
Technical Certificate
RADIATION CONTROL TECHNICIAN

This certificate is designed to prepare you for entry-level skills required for employment in the nuclear industry. This program prepares you to conduct radiation surveys, interpret survey data, assess personnel protection requirements, and recommend personnel in appropriate personnel protective procedures for the protection of human health.

Qualified radiation protection technicians work at Department of Energy (DOE) National Laboratories, medical facilities, research laboratories, nuclear power plants under the direction of the Nuclear Regulatory Commission (NRC) medical facilities, and industries that work with radioactive material. In addition to specialized classroom and laboratory instruction, students are required to complete supervised field experience.

GENERAL EDUCATION (7 CR)

Area I. Communications (3 cr)
  ENG 111 English Composition (3)

Area II. Mathematics (4 cr)
  MATH 130 Intermediate Algebra (4)

PROGRAM REQUIREMENTS (25 CR)

  ES 134 OSHA Health and Safety (3)
  RDPR 233 Radiation Biology (3)
  RDPR 234 Introduction to Radiation Science & Technology (4)
  RDPR 238 Introduction to Radiation Protection (4)
  RDPR 242 Problems in Radiation Protection (4)
  RDPR 243 Practical Radiological Programs and Sampling Methods (4)
  RDPR 250 Supervised Field Experience (3)

TOTAL CREDITS: 32
Associate of Science
SCIENCE

If you wish to transfer into a four-year program and earn a degree in one of the many fields of science, you should pursue this degree. The science department provides basic courses in biology, chemistry, engineering, geology, and physics, in addition to courses in computer science, and anatomy & physiology for students wishing to transfer to allied science programs.

GENERAL EDUCATION (43 CR) SEE PAGES 25-28.

Area I. Communications (9 cr)

Area II. Mathematics (10 cr)
- MATH 150 College Algebra (3)
- MATH 155 Trigonometry (3)
- MATH 162 Calculus I (4)

Area III. Laboratory Sciences (8 cr)
Choose one of the following three 2-semester sequences (with lab)
- BIOL 201/L Principles of Molecular and Cell Biology with lab (4)
- BIOL 202/L Principles of Genetics with lab (4)
- CHEM 121/L General Chemistry I with lab (4)
- CHEM 122/L General Chemistry II with lab (4)
- PHYS 215/L Engineering Physics I with lab (4)
- PHYS 216/L Engineering Physics II with lab (4)

Area IV. Social/Behavioral Sciences (6-9 cr)

Area V. Humanities and Fine Arts (6-9 cr)
- HUM 100 FYE: History and Culture of Northern New Mexico (3)
- PHIL 220 Ethics (3)

Area VI. Library Technology (1 cr)
- LT 101 Library Research Skills (1)

PROGRAM REQUIREMENTS (29 CR)
- BCIS 102 Computer Literacy (3)
- CS 132 Introduction to Programming (3)
- MATH 145 Introduction to Probability and Statistics (3)

Two additional semesters of lab courses (8 cr): Choose from BIOL, CHEM, or PHYS.
Approved Electives (12)

TOTAL CREDITS: 72
**Associate of Applied Science**  
**WILDLAND FIRE SCIENCE**

This program is designed to prepare you for a career in Wildland Fire Management. The program provides entry- and advanced-level fire suppression and management skills. Skill areas in program requirements develop student efficiency and performance in safety, ethical decision making, communications, aviation, business management, fire behavior predictions, fire line tactics, ignition and equipment applicable to wildland and prescribed fire, water hydraulics, chain saw operation, and recognition of environmental factors affecting start and spread of wildland fires.

Additional skills are designed to produce efficiency in performance of single operations resource positions while on and off duty times, before and during assignment. The degree is targeted towards operational Incident Command positions, but is also applicable to logistic and financial/administration Incident Command positions. All of the Wildland Fire courses meet National Wildfire Coordination Group standards.

**GENERAL EDUCATION (32 CR) SEE PAGES 25-28.**

**Area I. Communications (9 cr)**
- ENG 111 English Composition I (3)
- SPCH 130 Public Speaking (3)
- ENG 116 Technical Writing (3)

**Areas II and III. Mathematics/Computers/Laboratory Science (11 cr)**
- ES 112 Introduction to Environmental Science (3)
- ES 112L Introduction to Environmental Science Lab (1)
- BCIS 102 Computer Literacy (3)
- MATH 130 Intermediate Algebra (4)

**Area IV. Social/Behavioral Sciences (5 cr)**
- PSY 105 General Psychology (3)
- Electives (2)

**Area V. Humanities and Fine Arts (6 cr)**
- HUM 100 FYE: History and Culture of Northern New Mexico (3)
- PHIL 220 Ethics (3)

**Area VI. Library Technology (1 cr)**
- LT 101 Library Research Skills (1)

**PROGRAM REQUIREMENTS (38.50 CR)**
- ES 137 OSHA Hazmat First Responder (1.5)
- ES 203 Introduction to GIS/GPS & Cartography (2)
- ES 103 Introduction to Natural Resource Management (3)
- ES 120 Forest and Range Ecology (3 cr)
- WFS 130 Basic Wildland Fire Fighter Training (includes S-190 I-100 and L-180) (3)
Certificate

WILDLAND FIRE SCIENCE

This program prepares you for entry-level employment in Wildland Fire Management. It provides entry-level fire suppression and management skills. The student develops efficiency and performance in safety, ethical decision-making, communications, aviation, business management, fire line tactics, water hydraulics, chainsaw operation, and recognition of environmental factors affecting start and spread of wildland fires.

The certificate is targeted towards operational Incident Command positions. Completion of this certificate provides the student with the background needed to pursue an Associate Degree in Wildland Fire Science.

GENERAL EDUCATION (8 CR)

Area I. Communications (4 cr)

ENG 109N Basic Composition II (4)

Area II. Mathematics (4 cr)

MATH 102N Basic Algebra (4)

OR

MATH 103N (4) or higher level math.

PROGRAM REQUIREMENTS (21.75 CR)

ES 137 OSHA Hazmat First Responder (1.5)

WFS 130 Basic Wildland Fire Fighter Training (includes S-190, I-100 and L-180) (3)
WFS 260  Incident Business Management (1)
WFS 270  Basic Air Operations (1)
WFS 134  Lookouts, Communications, Escape Routes & Escape Zones (1)
WFS 131  Advanced Fire Fighter Training (S-131) (.5)
WFS 280  Followership to Leadership (1.5)
WFS 215  Fire Operations in the Wildland/Urban Interface (3)
WFS 290  Fundamentals of Fire Behavior (2)
WFS 211  Portable Pumps and Water Use (2)
WFS 212  Chain Saws (3)
WFS 230  Crew Boss (2.25)

TOTAL CREDITS: 29.75
VITICULTURE and ENOLOGY
This is a new program at Northern, effective Fall 2013

The Viticulture and Enology Science and Technology Alliance (VESTA), a National Center of Excellence funded by the National Science Foundation, offers convenient online education programs in viticulture and enology. VESTA is made up of partnerships with educational institutions across the country bringing together the best information and resources of the grape and wine industry
• Certificate and AAS program options
• Convenient online courses
• Hands-on learning opportunities in every class
• Job postings

The Sostenga Center at Northern New Mexico College is a partner institution with VESTA creating outstanding opportunities for northern New Mexico residents to access the National network for education, hands-on learning, and job placement in grape production and wine making.

To learn more about VESTA programs and resources in New Mexico contact Dr. Camilla Bustamante at 505-747-5454 or cbustamante@nnmc.edu

For more information about VESTA national programs and resources visit http://www.vesta-usa.org/ or call 417-836-8967.

Associates of Applied Science
VITICULTURE

The Associate of Applied Science in Viticulture will provide you with the skills for working in a commercial vineyard and provides opportunities for students to participate in hands-on field experiences through partnerships developed in northern and north central New Mexico, thus providing students with laboratory experience in their location. This certificate is taught with the Viticulture Enology Science and Technology Alliance (VESTA) program.

GENERAL EDUCATION (30 CR)

Area I: Communications (9 cr)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>3</td>
<td>English Composition I (3)</td>
</tr>
<tr>
<td>ENG 116</td>
<td>3</td>
<td>Technical Writing (3)</td>
</tr>
<tr>
<td>SPCH 130</td>
<td>3</td>
<td>Public Speaking (3)</td>
</tr>
</tbody>
</table>

Area II and Area III: Math/Computers/lab sciences (14cr)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCIS 102</td>
<td>3</td>
<td>Computer Literacy (3)</td>
</tr>
<tr>
<td>MATH 132</td>
<td>3</td>
<td>Applied Trades Math II or higher (3)</td>
</tr>
<tr>
<td>CHEM 121/L</td>
<td>4</td>
<td>General Chemistry with lab (4)</td>
</tr>
<tr>
<td>BIOL 201/L</td>
<td>4</td>
<td>Introduction to Molecular and Cell Biology with lab (4)</td>
</tr>
</tbody>
</table>

Prerequisite: CHEM 121/L
Area IV: Social/Behavioral Sciences (3 cr)
   Elective (3)  Choose from Anthropology, Economics, Geography, Political Science, Psychology, or Sociology

Area V: Humanities and Fine Arts (3 cr)
   HUM 100  FYE: History and Culture of Northern New Mexico (3)

Area VI: Library Technology (1 cr)
   LT 101  Library Research Skills (1)

PROGRAM REQUIREMENTS (27 CR)
   VIN 105  Molecular Principles in Grape and Wine (4)
   VIN 111  Introduction to Viticulture and Vineyard Management (3)
   VIN 112  Botanical Viticulture (4)
   VIN 113  Winter Viticulture Technology (2)
   VIN 114  Spring Viticulture Technology (2)
   VIN 115  Summer/Fall Viticulture Technology (2)
   VIN 211  Integrated Pest Management (2)
   VIN 213  Regional Vineyard Management (2)
   VIN 293  Soils for Viticulture (3)
   VIN 146  Introduction to Enology (3)

TOTAL CREDITS: 57

Certificate
Viticulture

The Certificate in Viticulture will provide you with the basic skills for working in a commercial vineyard and provides opportunities for students to participate in hands-on field experiences through partnerships developed with area vineyards and wineries, thus providing students with laboratory experience in their location. This certificate is taught with the Viticulture Enology Science and Technology Alliance (VESTA) program.

GENERAL EDUCATION (7 CR)

Area I: Communications (4 cr)
   ENG 109N  Basic Composition II (4)

Area II: Mathematics (3 cr)
   MATH 104N  Applied Trades Math (3)

PROGRAM REQUIREMENTS (16 CR)
   VIN 111  Introduction to Viticulture and Vineyard Management (3)
   VIN 113  Winter Viticulture Technology (2)
   VIN 114  Spring Viticulture Technology (2)
**ARTS & SCIENCES**

VIN 115 Summer/Fall Viticulture Technology (2)
VIN 211 Integrated Pest Management (2)
VIN 213 Regional Vineyard Management (2)
VIN 293 Soils for Viticulture (3)

*Choose one of the following (3-4)*
VIN 146 Introduction to Enology (3)
BIO 134 General Botany (4)

**TOTAL CREDITS: 26-27**

**Associates of Applied Science**

**ENOLOGY**

The Associate of Applied Science in Enology will provide you with the skills for working in a commercial personal winery and provides opportunities for students to participate in hands-on field experiences through partnerships developed in the northern and north central New Mexico wine industry and is designed to prepare individuals with the technical skills and ability to build expertise in this area. This AAS is taught with the Viticulture Enology Science and Technology Alliance (VESTA) program.

**GENERAL EDUCATION (30 CR)**

**Area I: Communications (9 cr)**
- ENG 111 English Composition I (3)
- ENG 116 Technical Writing (3)
- SPCH 130 Public Speaking (3)

**Area II and Area III: Math/Computers/lab sciences (14cr)**
- BCIS 102 Computer Literacy (3)
- MATH 132 Applied Trades Math II or higher (3)
- CHEM 121/L General Chemistry with lab (4)
- BIOL 201/L Introduction to Molecular and Cell Biology with lab (4)
  *Prerequisite: CHEM 121/L*

**Area IV: Social/Behavioral Sciences (3 cr)**
- Elective (3) Choose from Anthropology, Economics, Geography, Political Science, Psychology, or Sociology

**Area V: Humanities and Fine Arts (3 cr)**
- HUM 100 FYE: History and Culture of Northern New Mexico (3)

**Area VI: Library Technology (1 cr)**
- LT 101 Library Research Skills (1)

**PROGRAM REQUIREMENTS (28 CR)**

VIN 105 Molecular Principles in Grape and Wine (4)
VIN 116 Introduction to Enology (3)
VIN 130 Intermediate Enology (3)
VIN 148 Winery Sanitation (3)
VIN 160 Winery Equipment Operation Introduction to Wine (2)
VIN 210 Microorganisms (2)
VIN 259 Cellar Operations Technology (2)
VIN 266 Sensory Evaluation (3)
VIN 268 Wine and Must Analysis (3)
VIN 257 Fall Wine Production Technology (3)

TOTAL CREDITS: 58

Certificate
ENOLOGY

The Certificate in Enology is designed to prepare individuals for positions within the New Mexico wine industry. This certificate is taught with the Viticulture Enology Science and Technology Alliance (VESTA) program.

GENERAL EDUCATION (7 CR)

Area I: Communications (4 cr)
ENG 109N Basic Composition II (4)

Area II: Mathematics (3 cr)
MATH 104N Applied Trades Math (3)

PROGRAM REQUIREMENTS (24 CR)

VIN 116 Introduction to Enology (3)
VIN 130 Intermediate Enology (3)
VIN 148 Winery Sanitation (3)
VIN 160 Winery Equipment Operation Introduction to Wine (2)
VIN 210 Microorganisms (2)
VIN 259 Cellar Operations Technology (2)
VIN 266 Sensory Evaluation (3)
VIN 268 Wine and Must Analysis (3)
VIN 257 Fall Wine Production Technology (3)

TOTAL CREDITS: 31
Department of Math and Physical Sciences

The Department of Mathematics and Physical Sciences provides fundamental knowledge in mathematics engaging the student in problem solving, analytical and logical thinking through the basic method of inquiry. The department is committed to equipping students with the mathematical tools needed for its application to diverse fields.

Many of the courses in the associate programs offered by this department are designed to transfer to four-year programs. The Associate of Science degree in Science is specifically designed to represent the first two-years of a general four-year science program.

David Torres, PhD  Chair  747-2174  davytorres@nnmc.edu
Claudia Aprea, PhD  Geophysics  747-2268  cmaprea@nnmc.edu
Ajit Hira, PhD  Physics  747.2419  hira@nnmc.edu

Bachelor of Science
MATHEMATICS

ADMISSION REQUIREMENTS:
1) Completion of the General Education Common Core, plus an additional 13 credit hours which must include Calculus I
2) A cumulative GPA of at least 2.50.


Area I. Communications (9 cr)

Area II. Mathematics (3 cr)

Area III. Laboratory Sciences (8 cr)

Area IV. Social/Behavioral Sciences (6-9 cr)

Area V. Humanities and Fine Arts (6-9 cr)

Area VI. Library Technology (1 cr)

Area VII. Foreign Language (3 cr)
## PROGRAM REQUIREMENTS (37 CR)

### Required Supporting Courses in Physics and Chemistry (8 cr)

- **CHEM 121/L General Chemistry I with Lab (4)**
- **AND**
- **CHEM 122/L General Chemistry II with Lab (4)**
- **OR**
- **PHYS 121/L Applied Physics I with Lab (4)**
- **AND**
- **PHYS 122/L Applied Physics II with Lab (4)**
- **OR**
- **CHEM 121/L General Chemistry I with Lab (4)**
- **AND**
- **PHYS 121/L Applied Physics I with Lab (4)**

### Required supporting course in Computer Science (4 cr)

- **EECE 152L Computer Programming (4)**

## CORE CURRICULUM (25 CR)

- **MATH 162 Calculus I (4)**
- **MATH 163 Calculus II (4)**
- **MATH 264 Calculus III (4)**
- **MATH 375 Numerical Computing (3) (WIC)**
  - **OR**
  - **MATH 275 Intro to Numerical Computing (3)**
- **MATH 314 Linear Algebra with Applications (3)**
  - **OR**
  - **MATH 294 Intro to Linear Algebra with Applications (3)**
- **MATH 316 Applied Ordinary Differential Equations (3)**
  - **OR**
  - **MATH 296 Intro to Applied Ordinary Differential Equations (3)**
- **MATH 401 Advanced Calculus I (4)**

## MAJOR (27 CR)

### Applied Mathematics (24 cr)

- **MATH 311 Vector Analysis (3)**
- **MATH 312 Partial Differential Equations for Engineering (3)**
- **MATH 313 Complex Variables for Engineering (3)**
- **MATH 327 Discrete Structures (3)**
- **MATH 345 Elements of Applied Statistics and Probability Theory (3)**
- **MATH 395 Practicum in Mathematics (6)**
- **MATH 466 Mathematical Methods in Science and Engineering (3)**

- Choose one of the following (3):
  - **MATH 402 Advanced Calculus II (3)**
  - **MATH 441 Probability (3)**
  - **MATH 464 Applied Matrix Theory (3)**
CONCENTRATIONS
Along with your major, you may complete a concentration if you wish. For the BS in Mathematics, we suggest one of the following four concentrations.

General Engineering (21 cr)

- ME 202  Engineering Statics (3)
- ME 302  Mechanics of Materials (3)
- EECE 203L  Circuit Analysis I (3)
- ME 160L  General Engineering Design I (3)
- ME 301  Thermodynamics (3)
- ME 306  Dynamics (3)
- ME 317  Fluid Mechanics (3)

Information Technology (22 cr)

- EECE 132  Computer Networks I (3)
- IT 210  Information Technology Systems (4)
- EECE 231  Intermediate Programming (3)
- IT 250  Introduction to Databases (3)
- EECE 330  Computer Networks II (3)
- EECE 342  Wireless and Mobil Computing (3)
- EECE 440  Advanced Computer Networks (3)

Chemistry (19 cr)

- CHEM 121/L  General Chemistry I with Lab (4) *
- CHEM 122/L  General Chemistry II with Lab (4) *
- CHEM 301/L  Organic Chemistry I with Lab (4)
- CHEM 302/L  Organic Chemistry II with Lab (4)
- CHEM 311  Physical Chemistry (3)

*No course can count more than once toward a degree at Northern. If you pursue this concentration, you will not have taken CHEM 121/L and 122/L as part of the “supporting courses” on page 114.

Physics (20 cr)

- PHYS 215/L  Engineering Physics with Lab (4)
- PHYS 262/L  General Physics with Lab (4)
- PHYS 331  Thermodynamics and Statistical Methods (3)
- PHYS 302  Optics (3)
- PHYS 330  Introduction to Modern Physics (3)
- PHYS 405  Electricity and Magnetism (3)

Should you choose not to pursue a concentration, you must complete enough approved upper-division (300 or above) math, chemistry, engineering, or physics courses in order to fulfill our requirement of at least 40 cr of upper-division coursework.

In order to fulfill the graduation requirement of 128 credits for the program, you will have to enroll in an additional 3-25 credits of approved electives depending on if a concentration area is chosen.
## Associate of Science
### MATHEMATICS

**GENERAL EDUCATION (36 CR) SEE PAGES 25-28.**

**Area I. Communications (9 cr)**

**Area II. Mathematics (3 cr)**
- MATH 150 College Algebra (3)

**Area III. Laboratory Sciences (8 cr)**

**Area IV. Social/Behavioral Sciences (6-9 cr)**

**Area V. Humanities and Fine Arts (6-9 cr)**
- HUM 100 FYE: History and Culture of Northern New Mexico (3)

**Area VI. Library Technology (1 cr)**
- LT 101 Library Research Skills (1)

### PROGRAM REQUIREMENTS (35 CR)

- MATH 145 Introduction to Probability and Statistics (3)
- MATH 155 Trigonometry and Pre-Calculus (4)
- MATH 162 Calculus I (4)
- MATH 163 Calculus II (4)
- MATH 264 Calculus III (4)
- MATH 294 Intro to Linear Algebra with Applications (3)
- MATH 296 Intro to Applied Ordinary Differential Equations (3)
- MATH 295 Practicum (3) (or a course in an applied field different than math).
- MATH 275 Intro to Numerical Computing (3)
- EECE 152L Computer Programming (4)

**TOTAL CREDITS: 71**
Department of Career Technical Education

The Department of Career and Technical Education (CTE) supervises the instruction over all of the Career and Technical programs. Students can pursue associate of applied science degrees and certificates in the CTE programs offered at Northern, including Adobe Construction, Auto Body Repair, Automotive Technology Construction Trades, Drafting Technology, Electrical Technology, Office Administration, Plumbing Technology, Renewable Energy, Welding Technology, and many others.

Gilbert Sena, BA  Chair, CTE  747-5488  grsena@nnmc.edu  Automotive Technologies

Kenneth Dean Moya, Cert.  Auto Body Repair  747-5489  kmoya@nnmc.edu

David Dillon, PhD  Director  747-2272  dillon@nnmc.edu  Construction Trades

Certificate

ADOBE CONSTRUCTION

Provides the instruction necessary to design and build an adobe structure. The program emphasizes the traditional Northern New Mexico and Southwestern designs and dwelling accessories, such as kiva fireplaces, hornos, corbels, carved columns, and vigas with latillas.

Modern and emerging technologies and materials are also covered. As a graduate, you will be ready for employment with construction firms or self-employment in specialized subcontractor trades. You will also gain the skills needed to build your own traditional or modern Southwestern structures using adobe.

GENERAL EDUCATION (7-8 CR)

Communications (4)

ENG 108N  Basic Composition I (4)

Mathematics (3-4 cr)

MATH 100N  or higher level math course (3)

PROGRAM REQUIREMENTS (27 CR)

ADOB 100  Adobe Construction Basics (3)

OR

ADOB 101  Adobe Design and Construction Worldwide (3)

ADOB 102  Adobe Wall Construction (4)

ADOB 103  Roof Design and Construction (4)

ADOB 104  Floor Design and Construction (4)

ADOB 105  Finish Practices (4)

ADOB 107  Passive Solar Heating (2)
Choose six (6) credit hours of electives from the following courses:
- ADOB 110 Preservation and Restoration Practices (2)
- ADOB 110L Preservation and Restoration Lab (2)
- ADOB 111 Horno Design/Construction (1)
- ADOB 112 Arches, Domes, and Vaults (2)
- ADOB 115 Rammed Earth Construction (2)
- ADOB 201 Advanced Topics in Adobe Construction (4)
- CONS 155 Construction Math and Blueprint Reading (3)
- CONS 158 Foundation Theory and Construction (2)
- CONS 207 Construction Materials and Estimating (3)

TOTAL CREDITS: 34-35

Associate of Applied Science
AUTO BODY REPAIR

This program prepares you with the job skills needed for employment in the auto body repair field. Your training will include practice in metal work, body panel replacement, refinishing, computer-based estimation, and safety practices associated with handling materials, hand tools, and power equipment.

GENERAL EDUCATION (24 CR)

Area I. Communications (6 cr)
- ENG 111 English Composition I (3)
  Prerequisite: ENG 109N (3) or adequate score on the Course Placement Evaluation
- SPCH 130 Public Speaking (3)
  Prerequisite: ENG 109N (3) or adequate score on the Course Placement Evaluation

Areas II and III. Mathematics, Computers/Laboratory Science (6 cr)
- MATH 132 Applied Trades Math II or higher-level mathematics course (3)
  Prerequisite: MATH 102N (4), MATH 103N (4), or MATH 104N (3) or adequate score on the Course Placement Evaluation
- BCIS 102 Computer Literacy (3)

Area IV. Social/Behavioral Sciences (3 cr)
Elective (3) Choose from Anthropology, Economics, Geography, Political Science, Psychology, or Sociology.
  Prerequisite: ENG 109N (3) or adequate score on the Course Placement Evaluation

Area V. Humanities and Fine Arts (6 cr)
- HUM 100 FYE: History and Culture of Northern New Mexico (3)
  Prerequisite: ENG 108N (3) or adequate score on the Course Placement Evaluation
- PHIL 220 Ethics (3)
  Prerequisite: ENG 109N (3) or adequate score on the Course Placement Evaluation

Area VI. Library Technology (1 cr)
- LT 101 Library Research Skills (1)
HPER (1 cr)
  Elective (1)

PROGRAM REQUIREMENTS (56 CR)

Refinishing (15)
  ABR 112  Refinishing I (5)
  ABR 212  Refinishing II (5)
  \textit{Prerequisite: ABR 112}
  ABR 214  Refinishing III (5)
  \textit{Prerequisite: ABR 212}

Non-structural Analysis and Damage Repair (15)
  ABR 111  Metal I (4)
  ABR 116  Movable Glass and Hardware (2)
  ABR 211  Metal Work II (4)
  \textit{Prerequisite: ABR 111}
  ABR 213  Metal Work III (4)
  \textit{Prerequisite: ABR 211}
  ATEC 114  Service Writer/Customer Service (1)
  \textit{Requires instructor permission}

Structural Analysis and Damage Repair (14)
  ABR 113  Frame Repair (5)
  ABR 114  Unitized Body Repair (5)
  ABR 120  Auto Body Welding Methods (4)
  \textit{Prerequisite: ABR 111}

Mechanical and Electrical Repair for Body Technicians (12)
  ATEC 101  Introduction to Automotive Repair (2)
  ATEC 105  Suspension and Alignment (4.5)
  ATEC 115  Automotive Restraint System (1.5)
  \textit{Prerequisite: ATEC 122}
  ATEC 122  Basic Automotive Electric (1)
  ATEC 203  Automotive Electronics and Electricity (3)
  \textit{Prerequisite: ATEC 122 (1), ATEC 123 (2), and ATEC 124 (3)}

TOTAL CREDITS: 79
Certificate  
AUTO BODY REPAIR—REFINISHING

This program will prepare you with the skills needed to specialize in the area of refinishing work.

GENERAL EDUCATION (7 CR)

Communications (4 cr)

ENG 109N Basic Composition II (4)

Mathematics (3)

MATH 104N Applied Trades Math I (3)

PROGRAM REQUIREMENTS (15 CR)

ABR 112 Refinishing I (5)
ABR 212 Refinishing II (5)
ABR 214 Refinishing III (5)

TOTAL CREDITS: 22

Certificate  
AUTO BODY REPAIR—NON-STRUCTURAL ANALYSIS and DAMAGE

This program will prepare you with the skills needed to specialize in the area of non-structural analysis and damage repair.

GENERAL EDUCATION (7 CR)

Communications (4 cr)

ENG 109N Basic Composition II (4)

Mathematics (3)

MATH 104N Applied Trades Math I (3)

PROGRAM REQUIREMENTS (16 CR)

ABR 111 Metal I (4)
ABR 211 Metal II (4)
ABR 213 Metal III (5)
ATEC 114 Service Writer/Customer Service (1)
ATEC 116 Movable Glass and Hardware (2)

TOTAL CREDITS: 23
Certificate
AUTO-BODY REPAIR—
STRUCTURAL ANALYSIS and DAMAGE

This program will prepare you with the skills needed to specialize in the area of structural analysis and damage repair.

GENERAL EDUCATION (7 CR)

Communications (4 cr)
   ENG 109N Basic Composition II (4)

Mathematics (3)
   MATH 104N Applied Trades Math I (3)

PROGRAM REQUIREMENTS (14 CR)
   ABR 113 Frame repair (4)
   ABR 114 Unitized Body Repair (5)
   ABR 120 Auto Body Welding Methods (5)

TOTAL CREDITS: 21

Associate of Applied Science
AUTOMOTIVE TECHNOLOGY

Completion of the Automotive Technology program is designed to provide you with entry-level employment as an automotive technician. By the time you complete this program, you should to be able to achieve Automotive Service Excellence (ASE) certification in four or more competency areas.

GENERAL EDUCATION (23 CR)

Area I. Communications (6 cr)
   ENG 111 English Composition I (3)
   Prerequisite: ENG 109N (3) or adequate score on the Course Placement Evaluation
   SPCH 130 Public Speaking (3)
   Prerequisite: ENG 109N (3) or adequate score on the Course Placement Evaluation

Areas II and III. Mathematics/Computers/Laboratory Science (6 cr)
   MATH 132 Applied Trades Math II (3)
   Prerequisite: MATH 102N or MATH 103N or MATH 104N or adequate score on the Course Placement Evaluation
   BCIS 102 Computer Literacy (3)

Area IV. Social/Behavioral Sciences (3 cr)
   Elective (3) Choose from Anthropology, Economics, Geography, Political Science, Psychology, or Sociology.
   Prerequisite: ENG 109N (3) or adequate score on the Course Placement Evaluation.
Area V. Humanities and Fine Arts (6 cr)

HUM 100 FYE: History and Culture of Northern New Mexico (3)
  Prerequisite: ENG 108N (3) or adequate score on the Course Placement Evaluation

PHIL 220 Ethics (3)
  Prerequisite: ENG 109N (3) or adequate score on the Course Placement Evaluation

Area VI. Library Technology (1 cr)

LT 101 Library Research Skills (1)

HPER (1 cr)

  Elective (1)

PROGRAM REQUIREMENTS (54-57 CR)

ATEC 101 Introduction to Automotive Repair (2)
ATEC 102 Engine Repair (5)
ATEC 104 Brake Systems (5)
ATEC 105 Suspension and Alignment (4.5)
ATEC 109 Air Conditioning and Heating (4.5)
ATEC 114 Service Writer/Customer Service (1)
  Prerequisite: Permission of instructor
ATEC 115 Automotive Restraint System (1.5)
  Prerequisite: ATEC 122
ATEC 122 Basic Automotive Electricity (1)
ATEC 123 Battery, Starting, and Charging Systems (2)
ATEC 124 Electrical Instruments, Lights, and Accessories (3)
ATEC 126 On-Board System Diagnosis and Service (1)
ATEC 127 Engine Management Systems (3)
  Prerequisite: ATEC 126
ATEC 128 Fuel Management Systems (2)
ATEC 203 Automotive Electronics and Electricity (3)
  Prerequisites: ATEC 122, ATEC 123, ATEC 124
ATEC 204 Ignition Systems (2)
  Prerequisite: ATEC 126
ATEC 205 Emission Control Systems (3)
  Prerequisite: ATEC 126
ATEC 206 Manual Transmission and Differential (4)
ATEC 207 Automatic Transmission (5.5)

Choose one of the following electives

ATEC 280L Practicum (1-4)
  Prerequisite: Permission of instructor

ABR 120 Auto Body Welding Methods (4)
  Prerequisites: ABR 111 (4)

TOTAL CREDITS: 77-80

Note: We recommend that students take 100-level classes before proceeding to 200-level classes.
Certificate
AUTOMOTIVE SERVICE FUNDAMENTALS

This certificate is designed to prepare you for an entry-level position as a general service technician. The brake systems and suspension & alignment courses are part of the core automotive certificate and AAS degree programs.

GENERAL EDUCATION (7 CR)

Communications (4 cr)
   ENG 109N Basic Composition II (4)

Mathematics (3 cr)
   MATH 104N Applied Trades Math I (3)

PROGRAM REQUIREMENTS (13.5 CR)
   ATEC 101 Introduction to Automotive Repair (2)
   ATEC 104 Brake Systems (5)
   ATEC 105 Suspension & Alignment (4.5)
   ATEC 114 Service Writer/Customer Service (1)
   ATEC 122 Basic Automotive Electricity (1)

TOTAL CREDITS: 20.5

Certificate
AUTOMOTIVE SUSPENSION
and DRIVE TRAIN REPAIR

The completion of this program may lead to entry-level employment in automotive technology-related businesses, including such businesses as auto parts stores and car dealerships. By the time you complete this program and required work experience, you should be able to achieve Automotive Service Excellence (ASE) in one or more competency areas.

GENERAL EDUCATION (7 CR)

Communications (4 cr)
   ENG 109N Basic Composition II (4)

Mathematics (3 cr)
   MATH 104N Applied Trades Math I (3)

PROGRAM REQUIREMENTS (22 CR)
   ATEC 101 Introduction to Automotive Repair (2)
   ATEC 104 Brake Systems (5)
   ATEC 105 Suspension and Alignment (4.5)
ATEC 114  Service Writer/Customer Service (1)
ATEC 206  Manual Transmission and Differential (4)
ATEC 207  Automatic Transmission (5.5)

TOTAL CREDITS: 29

Certificate
AUTOMOTIVE UNDER-HOOD REPAIR

The completion of this program may lead to entry-level employment in automotive technology-related businesses, including such businesses as auto part stores and car dealerships. By the time you complete this program and required work experience, you should be able to achieve Automotive Service Excellence (ASE) in one or more competency areas.

GENERAL EDUCATION (7 CR)

Communications (4 cr)
   ENG 109N  Basic Composition II (4)

Mathematics (3)
   MATH 104N  Applied Trades Math I (3)

PROGRAM REQUIREMENTS (15.5 CR)

   ATEC 101  Introduction to Automotive Repair (2)
   ATEC 102  Engine Repair (5)
   ATEC 109  Air Conditioning and Heating (4.5)
   ATEC 114  Service Writer/Customer Service (1)
   ATEC 122  Basic Automotive Electricity (1)
   ATEC 123  Battery, Starting, and Charging Systems (2)

TOTAL CREDITS: 22.5

Certificate
AUTOMOTIVE POWERTRAIN REPAIR

The completion of this program may lead to entry-level employment in automotive technology-related businesses, including such businesses as auto part stores and car dealerships. By the time you complete this program and required work experience, you should be able to achieve Automotive Service Excellence (ASE) in one or more competency areas.

GENERAL EDUCATION (7 CR)

Communications (4 cr)
   ENG 109N  Basic Composition II (4)
Mathematics (3)
   MATH 104N  Applied Trades Math I (3)

PROGRAM REQUIREMENTS (24.5 CR)
   ATEC 101  Introduction to Automotive Repair (2)
   ATEC 114  Service Writer/Customer Service (1)
   ATEC 115  Automotive Restraint Systems (1.5)
   ATEC 122  Basic Automotive Electricity (1)
   ATEC 123  Battery, Starting, and Charging Systems (2)
   ATEC 124  Electrical Instruments, Lights, and Accessories (3)
   ATEC 126  On-Board System Diagnosis and Service (1)
   ATEC 127  Engine Management Systems (3)
   ATEC 128  Fuel Management Systems (2)
   ATEC 203  Automotive Electronics and Electricity (3)
   ATEC 204  Ignition Systems (2)
   ATEC 205  Emission Control Systems (3)

TOTAL CREDITS: 31.5

Certificate
AUTOMOTIVE SERVICE ADVISOR

This program is designed to prepare you for entry-level employment as a service advisor (assistant service manager).

GENERAL EDUCATION (7 CR)

Communications (4 cr)
   ENG 109N  Basic Composition II (4)

Mathematics (3 cr)
   MATH 104N  Applied Trades Math I (3)

PROGRAM REQUIREMENTS (16 CR)
   ATEC 100  Defensive Driving (1)
   ATEC 101  Introduction to Automotive Repair (2)
   ATEC 114  Service Writer/Customer Service (1)
   ATEC 125  You and Your Car (2)
   ATEC 139  A/C Recycle Recovery (1)
   You may substitute ATEC 109.
   OA 117  Business Math (3)
   BA 200  Business Computer Applications (3)
   BCIS 225  Excel (3)

TOTAL CREDITS: 23
Associate of Applied Science
COMPUTER AIDED DRAFTING

When you successfully complete this program you will be prepared for entry-level CAD positions in engineering, architectural, construction, or surveying firms.

GENERAL EDUCATION (24-25 CR)

Area I. Communications (6 cr)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>English Composition I</td>
<td>3</td>
</tr>
</tbody>
</table>

Prerequisites: ENG 109N (3) or adequate score on the Course Placement Evaluation

Choose one of the following three courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 112</td>
<td>English Composition II</td>
<td>3</td>
</tr>
</tbody>
</table>

Prerequisite: ENG 111 (3)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 116</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

Prerequisite: ENG 111 (3)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPCH 130</td>
<td>Public Speaking</td>
<td>3</td>
</tr>
</tbody>
</table>

Prerequisite: ENG 109N (3) or adequate score on the Course Placement Evaluation

Areas II and III. Mathematics/Computers/Laboratory Science (10-11 cr)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 130</td>
<td>Intermediate Algebra</td>
<td>4</td>
</tr>
</tbody>
</table>

Prerequisite: MATH 102N (4) or MATH 103N (4) or adequate score on the Course Placement Evaluation

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCIS 102</td>
<td>Computer Literacy</td>
<td>3</td>
</tr>
</tbody>
</table>

Choose one of the following electives (3-4):

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGR 110</td>
<td>Intro to Engineering Technology with lab</td>
<td>3</td>
</tr>
</tbody>
</table>

Prerequisite: MATH 102N (4), MATH 103N (4) or adequate score on the Course Placement Evaluation

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 110/L</td>
<td>Intro to Physics with lab</td>
<td>4</td>
</tr>
</tbody>
</table>

Prerequisite: MATH 130

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 121/L</td>
<td>Applied Physics with lab</td>
<td>4</td>
</tr>
</tbody>
</table>

OR

Other advisor-approved mathematics, science, or engineering course (3-4)

Area IV. Social/Behavioral Sciences (3 cr)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elective</td>
<td>Choose from Anthropology, Economics, Geography, Political Science, Psychology, or Sociology.</td>
<td>3</td>
</tr>
</tbody>
</table>

Prerequisite: ENG 109N (3) or adequate score on the Course Placement Evaluation

Area V. Humanities and Fine Arts (3 cr)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUM 100</td>
<td>FYE: History and Culture of Northern New Mexico</td>
<td>3</td>
</tr>
</tbody>
</table>

Prerequisite: ENG 108N (3) or adequate score on the Course Placement Evaluation

Area VI. Library Technology (1 cr)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LT 101</td>
<td>Library Research Skills</td>
<td>1</td>
</tr>
</tbody>
</table>

HPER (1 cr)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elective</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>
PROGRAM REQUIREMENTS (45-46 CR)

General Drafting (32)

DRFT 100  Computer Aided Drafting I (4)
DRFT 101  Residential CAD I (4)
  Prerequisite: DRFT 100
DRFT 102  Mechanical Engineering CAD I (4)
  Prerequisite: DRFT 100
DRFT 103  Surveying and CAD Mapping I (4)
  Prerequisite: DRFT 100, MATH 100N (4), and ENG 108N (3)
DRFT 110  GIS/GPS (3)
DRFT 111  Commercial Building CAD (4)
  Prerequisite: DRFT 101, MATH 100N (4), and ENG 108N (3)
DRFT 112  Mechanical Engineering CAD II (4)
  Prerequisite: DRFT 102, MATH 102N (4), and ENG 108N (3)
DRFT 113  Surveying and CAD Mapping II (4)
  Prerequisite: DRFT 103 and MATH 102N (4) or MATH 103N (4)
DRFT 199  Job Skills (1)
  Prerequisite: ENG 109N (3)

Choose one of the following course combinations (6-7):

DRFT 201  Residential CAD II (4)
  Prerequisite: DRFT 101

AND

CONS 206  Building Construction (3)
  Prerequisite: MATH 100N (4) and ENG 108N (3)

OR

DRFT 202  Mechanical Engineering CAD III (4)
  Prerequisite: DRFT 112

and

DRFT 238  3D Mechanical Modeling (2)
  Prerequisite: DRFT 113

OR

DRFT 203  Civil Engineering CAD (4)
  Prerequisite: DRFT 113

AND

CONS 206  Building Construction (3)
  Prerequisite: MATH 100N (4) and ENG 108N (3)

Electives (7 cr minimum)

Any advisor-approved DRFT, ME, MATH, Science or CTE-related elective.

TOTAL CREDITS: 69-71
Certificate
COMPUTER AIDED DRAFTING

This program prepares you for entry-level CAD positions.

GENERAL EDUCATION (10-11 CR)

Communications (4 cr)

ENG 109N Basic Composition II (4) or a higher level course

Math/Computer/Lab Sciences (6-7 cr)

MATH 102 Basic Algebra (4) or higher level math
BCIS 102 Computer Literacy (3)

PROGRAM REQUIREMENTS (25 CR)

DRFT 100 Computer Aided Drafting I (4)
DRFT 101 Residential CAD I (4)
DRFT 102 Mechanical Engineering CAD I (4)
DRFT 103 Surveying and CAD Mapping I (4)
DRFT 199 Job Skills (1)

Choose one of the following course combinations:

DRFT 111 Commercial Building CAD (4) and
DRFT 201 Residential CAD II (4)
OR
DRFT 112 Mechanical Engineering CAD II (4) and
DRFT 202 Mechanical Engineering CAD III (4)
OR
DRFT 113 Surveying and CAD Mapping II (4) and
DRFT 203 Civil Engineering CAD (4)

TOTAL CREDITS: 35-36

Associate of Applied Science
CONSTRUCTION TRADES MANAGEMENT

This program provides you with the skills necessary to enter the construction industry at higher than entry level. As a graduate, you will be capable of entering at supervisory or management internship levels. It combines the program requirements of the Adobe Certificate or Carpentry Construction Program with classes to build business and management skills.

GENERAL EDUCATION (19 CRS)

Area I. Communications (6 crs)

ENG 111 English Composition I (3)
Prerequisite: ENG 109N (3) or adequate score on the Course Placement Evaluation
SPCH 130 Public Speaking (3)
Prerequisites: ENG 109N (3) or adequate score on the Course Placement Evaluation

Areas II and III. Mathematics/Computers/Laboratory Sciences (6 crs)
BCIS 102 Computer Literacy (3)
Elective (3)

Area IV. Social/Behavioral Sciences (3 crs)
Elective (3)

Area V. Humanities and Fine Arts (3 crs)
HUM 100 FYE: History and Culture of Northern New Mexico (3)
Prerequisite: ENG 109N (3) or adequate score on the Course Placement Evaluation

Area VI. Library Technology (1 cr)
LT 101 Library Research (1)

PROGRAM REQUIREMENTS (46-47 CR)
OA 117 Business Math (3)
BA 220 Introduction to Business (3)
BA 240 Principles of Management (3)

CONCENTRATIONS (CHOOSE ONE OF THE FOLLOWING)

Option 1: Adobe Construction Certificate Program Requirements (27 crs)
Electives (10 crs) from ADOB, CARP, CONS, or DRFT courses

Option 2: Wood/Steel Frame Building Construction (38 crs)
Five courses from CARP 171-178 (30 crs)
Electives (8 crs) from ADOB, CONS, CARP, or DRFT courses

TOTAL CREDITS: 65–66

Associate of Applied Science
CONSTRUCTION TRADES TECHNOLOGY

This program provides you with the background needed for becoming a licensed contractor. It covers state laws, acts relative to the construction industries, uniform codes, and construction permits. It also provides a brief introduction to law, taxes, business licenses, and reporting requirements mandated by the State of New Mexico.

GENERAL EDUCATION (29-30 CR)

Area I. Communications (6 cr)
ENG 111 English Composition I (3)
Prerequisites: ENG 109N (3) or adequate score on the Course Placement Evaluation
Choose one of the following three courses (3):
ENG 112 English Composition II (3)
Prerequisite: ENG 111 (3)
ENG 116  Technical Writing (3)  
Prerequisite: ENG 111 (3)

SPCH 130  Public Speaking (3)  
Prerequisite: ENG 109N (3) or adequate score on the Course Placement Evaluation

Areas II and III.  Mathematics/Computers/Laboratory Sciences (9-10 cr)

BCIS 102  Computer Literacy (3)

MATH 132  Applied Trades Math II or higher-level mathematics course (3)  
Prerequisite: MATH 102N (4), MATH 103N (4), or MATH 104N (3) or adequate score on the Course Placement Evaluation

Choose one of the following electives (3-4):

ENGR 110  Intro to Engineering Technology (3)  
Prerequisite: MATH 102N (4), MATH 103N (4), or MATH 104N (3) or adequate score on the Course Placement Evaluation

PHYS 110/L  Introduction to Physics I with lab (4)

PHYS 121/L  Applied Physics with lab (4)  
Prerequisite: MATH 130 (4)

OR  
Other approved mathematics, science, or engineering course(s) (3-4)

Area IV.  Social/Behavioral Sciences (6 cr)

Elective (6)  Choose from Anthropology, Economics, Geography, Political Science, Psychology, or Sociology.  
Prerequisite: ENG 109N (3) or adequate score on the Course Placement Evaluation

Area V.  Humanities and Fine Arts (6 cr)

HUM 100  FYE: History and Culture of Northern New Mexico (3)  
Prerequisite: ENG 108N (3) or adequate score on the Course Placement Evaluation

PHIL 220  Ethics (3)  
Prerequisite: ENG 109N (3) or adequate score on the Course Placement Evaluation

Area VI.  Library Technology (1 cr)

LT 101  Library Research (1)

HPER (1 cr)

Elective (1)

PROGRAM REQUIREMENTS (38-41 CR)

ADOB 100  Adobe Construction Basics (3)

BA 128  Introduction to Entrepreneurship (3)  
Prerequisite: ENG 111 (3)

BA 240  Principles Management (3)  
Prerequisite: ENG 109N or adequate score on the Course Placement Evaluation

CONS 150  Contractor Licensing Requirements (2)

CONS 151  Inspection Processes (1)

CONS 152  Labor Laws and Safety (2)

CONS 153  Construction Contractor Taxation (3)

CONS 155  Construction Math & Blueprint Reading (3)

CONS 156  International Construction Code (2)
CONS 157 Site Development and Layout (2)
CONS 206 Building Construction (3)
  Prerequisite: MATH 100N (4) and ENG 108N (3)
  or adequate score on the Course Placement Evaluation
CONS 207 Construction Materials & Estimating (3)
  Prerequisite: MATH 100N (4) and ENG 108N (3) and BCIS 102 (3) or
  permission of instructor
ELEC 141 Electrical Code I (3)

Electives (5-8 cr)
CONS 158 Foundation Theory and Construction (2)
CONS 159 Masonry Theory and Construction (3)
DRFT 100 Computer Aided Drafting I (4)
WELD 150 Applied Metallurgy (4)

TOTAL CREDITS: 67-71

Associate of Applied Science
ELECTRICAL TECHNOLOGY

This program prepares you for the more technical aspects of the electrician’s trade with emphasis on jobs available in the government sector.

GENERAL EDUCATION (26 CR)
Area I. Communications (9 cr)
ENG 111 English Composition I (3)
  Prerequisites: ENG 109N (3) or adequate score on the Course Placement Evaluation
ENG 116 Technical Writing (3)
  Prerequisite: ENG 111 (3)
SPCH 130 Public Speaking (3)
  Prerequisite: ENG 109N (3) or adequate score on the Course Placement Evaluation

Areas II and III. Mathematics/Computers/Laboratory Science (6 cr)
BCIS 102 Computer Literacy (3)
MATH 132 Applied Trades Math II (3) or higher-level mathematics course
  Prerequisite: MATH 102N (4), MATH 103N (4), or MATH 104N (3)
  or adequate score on the Course Placement Evaluation

Area IV. Social/Behavioral Sciences (3 cr)
Elective (3)  Choose from Anthropology, Economics, Geography, Political Science, Psychology, or Sociology
  Prerequisite: ENG 109N (3) or adequate score on the Course Placement Evaluation

Area V. Humanities and Fine Arts (6 cr)
HUM 100 FYE: History and Culture of Northern New Mexico (3)
  Prerequisite: ENG 108N (3) or adequate score on the Course Placement Evaluation
PHIL 220 Ethics (3)
  Prerequisite: ENG 109N (3) or adequate score on the Course Placement Evaluation
Area VI. Library Technology (1 cr)
   LT  101   Library Research Skills (1)

HPER (1 cr)
   Elective (1)

PROGRAM REQUIREMENTS (39-40 CR)

Business Administration (3)
   BA  240   Principles of Management (3)
   Prerequisite: ENG 109N (3) or adequate score on the Course Placement Evaluation

Construction (3)
   CONS  207   Construction Materials & Estimating (3)
   Prerequisites: ENG 108N (3), MATH 100N (4), and BCIS 102 (3),
   or permission of instructor

Electrical (30)
   ELEC  110   Introduction to Solar Electricity (1)
   ELEC  110L  Introduction to Solar Electricity Lab (2)
   ELEC  140   Electrical Theory I (3)
   ELEC  141   Electrical Code I (3)
   ELEC  142L  Residential Wiring Lab (6)
   ELEC  150   Electrical Theory II (3)
   ELEC  151   Electrical Code II (3)
   ELEC  152L  Commercial Wiring Lab (6)
   ELEC  160   Motor Controls (3)
   Co-requisite: ELEC 160L (3)

Choose Elective(s) (3-4 cr):
   RE  111   Beginning Photovoltaic Installation (3)
   RE  212   Advanced Photovoltaic Installation (3)
   RE  112   Roof Mounting for Solar Installations (4)
   RE  105   Sustainability in Construction Installation (1)

TOTAL CREDITS: 65-66

Certificate

ELECTRICAL TECHNOLOGY

This program prepares you for entry-level employment as an electrician's helper or an
apprentice electrician. In addition, it prepares you to take the state examination for
licensure as a journeyman electrician. You must attend on a full-time basis.

GENERAL EDUCATION (7-8 CR)

Communications (4 cr)
   ENG  108N   Basic Composition I (4)
Mathematics (3-4 cr)
   MATH 100N (4) or a higher level math course (3)

PROGRAM REQUIREMENTS (24 CR)
   ELEC 140 Introduction to Electrical Theory (3)
   ELEC 141 Introduction to Electrical Code (3)
   ELEC 142L Residential Wiring Lab (6)
   ELEC 150 Electrical Theory (3)
   ELEC 151 Electrical Code (3)
   ELEC 152L Commercial Wiring Lab (6)

TOTAL CREDITS: 31-32

Associate of Applied Science
PLUMBING TECHNOLOGY

This program will provide you with opportunities to develop marketable skills in areas of installation, repair, and maintenance of common plumbing systems, through an emphasis on computations, scientific knowledge, interpretations of code, manufacturers’ requirements, technological advances, public health, and general public safety concerns. When you have completed the capstone course in this program, you will be prepared to take the New Mexico journeyman’s license exam.

GENERAL EDUCATION (30 CR)

Area I. Communications (6 cr)
   ENG 111 English Composition I (3)
   Prerequisites: ENG 109N (3) or adequate score on the Course Placement Evaluation

Choose one of the following courses:
   ENG 116 Technical Writing (3)
   Prerequisite: ENG 111 (3)
   SPCH 130 Public Speaking (3)
   Prerequisite: ENG 109N (3) or adequate score on the Course Placement Evaluation

Areas II and III. Mathematics/Computers/Laboratory Science (10 cr)
   BCIS 102 Computer Literacy (3)
   MATH 132 Applied Trades Math II (3 CR)
   Prerequisite: MATH 102N (4) or MATH 103N (4) or MATH 104N (3)
   or adequate score on the Course Placement Evaluation
   DRFT 100 Computer-Aided Drafting I (4)

Area IV. Social/Behavioral Sciences (3 cr)
   Elective (3) Choose from Anthropology, Economics, Geography, Political Science, Psychology, or Sociology.
   Prerequisite: ENG 109N (3) or adequate score on the Course Placement Evaluation
Area V. Humanities and Fine Arts (3 cr)
  HUM 100 FYE: History and Culture of Northern New Mexico (3)
    Prerequisite: ENG 108N (3) or adequate score on the Course Placement Evaluation

Area VI. Library Technology (1 cr)
  LT 101 Library Research Skills (1)

HPER (1 cr)
  Elective (1)

Business-related courses (6 cr)
  BA 220 Introduction to Business (3)
    Prerequisite: ENG 109N (3) or adequate score on the Course Placement Evaluation
  OA 135 Introduction to Accounting (3)

PROGRAM REQUIREMENTS (50 CR)
  PLBT 101 Plumbing Apprenticeship I (5)
    Prerequisite: MATH 102 (4) or Pipefitter (UA Local 412 member)
  PLBT 102 Plumbing Apprenticeship II (5)
    Prerequisite: PLBT 101 or Department Permission
  PLBT 103 Plumbing Apprenticeship III (5)
    Prerequisite: PLBT 102 or Department Permission
  PLBT 104 Plumbing Apprenticeship IV (5)
    Prerequisite: PLBT 103 or Department permission
  PLBT 106 Plumbing Apprenticeship V (5)
    Prerequisite: PLBT 104 or Department permission
  PLBT 206 Plumbing Apprenticeship VI (5)
    Prerequisite: PLBT 106 or Department Permission
  PLBT 207 Plumbing Apprenticeship VII (5)
    Prerequisite: PLBT 206 or Department Permission
  PLBT 208 Plumbing Apprenticeship VIII (5)
    Prerequisite: PLBT 207 or Department Permission
  PLBT 209 Plumbing Apprenticeship IX (5)
    Prerequisite: PLBT 208 or Department Permission
  PLBT 242 Plumbing Apprenticeship X (5)
    Prerequisite: PLBT 209 or Department Permission

TOTAL CREDITS: 80

NMCID 14.6.4.8 NOTE: You may include education/technical training to satisfy the experience requirements. For qualifying party candidates, each year of training may be credited as one-half (1/2) year of experience, but in no case shall credited training exceed one-half (1/2) of the total experience requirement.
Certificate
PLUMBING TECHNOLOGY

This program will provide you with opportunities to develop marketable skills in areas of installation, repair, and maintenance of common plumbing systems through an emphasis on computations, scientific knowledge, interpretations of code, manufacturers’ requirements, technological advances, public health, and general public safety concerns.

When you have completed the Capstone course in this program, you will have completed the education needed to take the New Mexico journeyman’s license exam.

GENERAL EDUCATION (7 CR)

Communications (4 cr)

ENG 109N Basic Composition II (4)

Mathematics (3)

MATH 104N Applied Trades Math I (3)

PROGRAM REQUIREMENTS (50 CR)

PLBT 101 Plumbing Apprenticeship I (5 cr)
PLBT 102 Plumbing Apprenticeship II (5 cr)
PLBT 103 Plumbing Apprenticeship III (5 cr)
PLBT 104 Plumbing Apprenticeship IV (5 cr)
PLBT 106 Plumbing Apprenticeship V (5 cr)
PLBT 206 Plumbing Apprenticeship VI (5 cr)
PLBT 207 Plumbing Apprenticeship VII (5 cr)
PLBT 208 Plumbing Apprenticeship VIII (5 cr)
PLBT 209 Plumbing Apprenticeship IX (5 cr)
PLBT 242 Plumbing Apprenticeship X (5 cr)

TOTAL CREDITS: 57

NMCID 14.6.4.8 NOTE: You may include education/technical training to satisfy the experience requirements. For qualifying party candidates, each year of training may be credited as one-half (1/2) year experience, but in no case shall credited training exceed one-half (1/2) of the total experience requirement. Journeyman applicants may use credited training to satisfy the entire experience if approved. Please include copies of your official transcripts and/or certificates.
Certificate

PLUMBING APPRENTICESHIP

The Plumbing Apprenticeship Program is for persons currently employed full-time in the mechanical trades (plumbing) industry, and is offered in the Joint Apprenticeships Training Committee (JATC) Plumbing and Pipefitters industry in New Mexico UA Local 412. Students must purchase textbooks and instructional materials through the local chapter of the JATC office UA Local 412.

GENERAL EDUCATION (7 CR)

Communications (4 cr)

ENG 109N Basic Composition II (4)

Mathematics (3)

MATH 104N Applied Trades Math I (3)

PROGRAM REQUIREMENTS (50 CR)

PLBT 101 Plumbing Apprenticeship I (5 cr)
PLBT 102 Plumbing Apprenticeship II (5 cr)
PLBT 103 Plumbing Apprenticeship III (5 cr)
PLBT 104 Plumbing Apprenticeship IV (5 cr)
PLBT 106 Plumbing Apprenticeship V (5 cr)
PLBT 206 Plumbing Apprenticeship VI (5 cr)
PLBT 207 Plumbing Apprenticeship VII (5 cr)
PLBT 208 Plumbing Apprenticeship VIII (5 cr)
PLBT 209 Plumbing Apprenticeship IX (5 cr)
PLBT 242 Plumbing Apprenticeship X (5 cr)

TOTAL CREDITS: 57 (See NMCID 14.6.4.8 NOTE for this certificate on next page)

NMCID 14.6.4.8 NOTE: You may include education/technical training to satisfy the experience requirements. For qualifying party candidates, each year of training may be credited as one-half (1/2) year of experience, but in no case shall credited training exceed one-half (1/2) of the total experience requirement. Journeyman applicants may use credited training to satisfy the entire experience if approved. Please include copies of your official transcripts and/or certificates.
Associate of Applied Science
RENEWABLE ENERGY

This program will provide you with the skills necessary to enter environmental fields – the renewable energy, alternative technology, and construction industries. You will be capable of entering at supervisory or management internship levels or have the skills to establish a small, related business.

GENERAL EDUCATION (33 CR)

Area I. Communications (9 cr)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>English Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG 116</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 130</td>
<td>Public Speaking</td>
<td>3</td>
</tr>
</tbody>
</table>

Prerequisites: ENG 109N (3) or adequate score on the Course Placement Evaluation

Areas II and III. Mathematics/Computers/Laboratory Science (15 cr)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGR 120L</td>
<td>Introduction to Mathematics for Engineering Applications</td>
<td>4</td>
</tr>
<tr>
<td>MATH 132</td>
<td>Applied Trades Math II or a higher-level mathematics course</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 121L</td>
<td>General Chemistry I with lab</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 121L</td>
<td>Applied Physics I with lab</td>
<td>4</td>
</tr>
</tbody>
</table>

Prerequisites: ENG 111 (3) and MATH 130 (4), or high school chemistry within 2 years, or ACT score of 19 or higher in natural sciences

OR

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 215L</td>
<td>Engineering Physics I with lab</td>
<td>4</td>
</tr>
</tbody>
</table>

Prerequisite: MATH 162 (4) or ENGR 120L (3)

Area IV. Humanities and Fine Arts (3 cr)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUM 100</td>
<td>FYE: History and Culture of Northern New Mexico</td>
<td>3</td>
</tr>
</tbody>
</table>

Prerequisite: ENG 108N (3) or adequate score on the Course Placement Evaluation

Area V. Social/Behavioral Sciences (3 cr)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 111</td>
<td>World Geography</td>
<td>3</td>
</tr>
</tbody>
</table>

Prerequisite: ENG 109N (3) or adequate score on the Course Placement Evaluation

OR

Elective (3) Choose from Anthropology, Economics, Geography, Political Science, Psychology, or Sociology.

Prerequisite: ENG 109N (3) or adequate score on the Course Placement Evaluation

Area VI. Library Technology (1 cr)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LT 101</td>
<td>Library Research Skills</td>
<td>1</td>
</tr>
</tbody>
</table>

HPER (2 cr)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elective(s)</td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>
PROGRAM REQUIREMENTS (42-45 CR)

General (10 cr)

ES 112/L  Introduction to Environmental Science and lab (4)
RE 103  Renewable Energy Introduction and Overview (3)
  Prerequisite: ENG 108N (3) and MATH 100N (4)
RE 104A  Architecture 2030 and the 2010 Imperative (3)
  Prerequisite: ENG 108N (3) and MATH 100N (4)

Solar Heating (7 cr)

ADOB 107  Passive Solar Heating (2)
RE 108  Active Solar Heating (3)
  Co-requisite RE 108L (2)
RE 108L  Active Solar Heating Lab (2)
  Co-requisite RE 108 (3)

Renewable Electric and Electronics (25-28 cr)

ELEC 100/L  Introduction to Solar Electricity and lab (1)
ELEC 140  Electrical Theory I (3)
ELEC 141  Introduction to Electrical Code I (3)
ELEC 190  Solar and Wind Systems in the Electric Code (2)
  Co-requisite: RE 207 (4) or RE 208 (4)
RE 111  Beginning Photovoltaic Installation (3)
RE 212  Advanced Photovoltaic Installation (3)
RE 112  Roof Mounting for Solar Installations (4)
RE 105  Sustainability in Construction Installation (1)

Renewable Electric and Electronics Electives (Choose 5-8 cr)

RE 127  Geothermal Systems for Heat and Power (4)
  Prerequisite: RE 103 (3)
RE 128  Biomass Systems for Heat, Power, and Cogeneration (4)
  Prerequisite: RE 103 (3)
RE 129  Trends and Emerging Energy Sources (2)
  Prerequisite: RE 103 (3)
RE 160  Renewable Electric Power Systems (3)
  Prerequisite: MATH 130 (4) or permission
RE 207  Wind Electric System Design and Installation (4)
  Prerequisites: ENG 108N (3), MATH 100N (4), RE 103 (3);
  Co-requisite: ELEC 190 (2)
RE 208  Photovoltaic System Design and Installation (4)
  Prerequisites: ENG 108N (3), MATH 100N (4), RE 103 (3);
  Co-requisite: ELEC 190 (2)

TOTAL CREDITS: 75-78

Note: Completion of 100-level courses is highly recommended prior to enrolling in 200-level courses.
Associate of Applied Science
WELDING TECHNOLOGY

This program prepares you for the more technical aspects of the welder’s trade, with emphasis on jobs available in the government sector, particularly at sites such as the Los Alamos National Laboratory.

GENERAL EDUCATION (23-24 CR)

Area I. Communications (9 cr)

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
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<td>ENG 116</td>
<td>Technical Writing</td>
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</tr>
<tr>
<td>SPCH 130</td>
<td>Public Speaking</td>
<td>3</td>
</tr>
</tbody>
</table>

Area II and Area III. Mathematics/Computers/Laboratory Science (6-7 cr)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BCIS 102</td>
<td>Computer Literacy</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 110</td>
<td>Intro to Engineering Technology</td>
<td>4</td>
</tr>
<tr>
<td>MATH 132</td>
<td>Applied Trades Math II or a higher-level math course</td>
<td>3</td>
</tr>
</tbody>
</table>

Area IV. Social/Behavioral Sciences (3 cr)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elective</td>
<td>Choose from Anthropology, Economics, Geography, Political Science, Psychology, or Sociology</td>
<td>3</td>
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</table>

Area V. Humanities and Fine Arts (3 cr)

<table>
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<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>HUM 100</td>
<td>FYE: History and Culture of Northern New Mexico</td>
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</tbody>
</table>

Area VI. Library Technology (1 cr)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LT 101</td>
<td>Library Research Skills</td>
<td>1</td>
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</table>

HPER (1 cr) Electives (1)

PROGRAM REQUIREMENTS (37-39 CR)

Business Administration (3 cr)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BA 220</td>
<td>Introduction to Business</td>
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Drafting (5 cr)

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<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>DRFT 100</td>
<td>Computer Aided Drafting I</td>
<td>4</td>
</tr>
<tr>
<td>DRFT 199</td>
<td>Job Skills</td>
<td>1</td>
</tr>
</tbody>
</table>
Welding (29-31 cr)

WELD 150 Applied Metallurgy (4)
WELD 110 Introduction to Welding (3)
WELD 111L Fundamentals of Oxyacetylene Welding (3)
WELD 112L Fundamentals of Arc Welding (3)
WELD 120L Oxyacetylene Welding (3)
WELD 121L Arc Welding (3)
WELD 122L Inert Gas Welding (3)
WELD 210 Welding Blueprint Reading (3)
CONS 155 Construction Math and Blueprint Reading (3)
WELD 295 Welder qualification Capstone (1-3)

Choose one 3-credit elective from the following:
WELD 211L Practical Arc Lab (3)
WELD 212L Practical Oxyacetylene Lab (3)
WELD 213L Practical Inert Gas Lab (3)

TOTAL CREDITS: 60-63

Certificate
WELDING

This program prepares you for entry-level jobs in the manufacturing and construction trades as production or specialized welders, welder fitters, and welder-tackers. When you have completed the program you will be eligible to apply for national certification from the American Welding Society.

GENERAL EDUCATION (7-8 CR)

Communications (4 cr)
ENG 108N Basic Composition I (4)

Mathematics (3-4 cr)
MATH 100N (4) or a higher level math course (4)

PROGRAM REQUIREMENTS (30 CR)

WELD 110 Introduction to Welding (3)
WELD 111L Fundamentals of Oxyacetylene Welding (3)
WELD 112L Fundamentals of Arc Welding (3)
WELD 120L Oxyacetylene Welding (3)
WELD 121L Arc Welding (3)
WELD 122L Inert Gas Welding (3)
WELD 210 Welding Blueprint Reading (3)
OR
CONS 155 Construction Math and Blueprint Reading (3)
WELD 211L Practical Arc Lab (3)
WELD 212L Practical Oxyacetylene Lab (3)
WELD 213L Practical Inert Gas Lab (3)

TOTAL CREDITS: 37-38
COLLEGE of EDUCATION

Interim Dean: Myrna Villanueva, PhD
505.747.5461 mvillanueva@nnmc.edu

The College of Education at Northern is committed to preparing high quality teachers and advancing the profession in partnership with educational institutions and communities in the region and beyond. The College of Education offers Associate of Arts degrees in early childhood education and elementary education, a Bachelor of Arts degree in Elementary Education, and endorsements in Bilingual Education and Teachers of English to Speakers of Other Languages (TESOL). Through the Alternative Licensure Program, the College of Education offers Post Baccalaureate certificates in Elementary Education, Secondary Education, and Special Education.

The College of Education at Northern is housed in the Richard C. Martinez, Teacher Education Center on the Española Campus. For general inquiries/application packets, contact us at COE@nnmc.edu or (505) 747-5431.

Marcia Brenden, PhD
Post-Graduate 747.5466 mbrenden@nnmc.edu
Program Developer & Avance Project

Roseli Cavalcante, PhD
Associate Professor 747.5463 rcavalcante@nnmc.edu

Christina Esquibel, Ed.S
Associate Professor 747.2242 christina@nnmc.edu

Tamara Trujillo, MA
Coordinator, 747.2224 tamara@nnmc.edu
Academic Programs

ASSOCIATE OF ARTS
EARLY CHILDHOOD EDUCATION

This program focuses on the social, academic, and cultural intersections of young children entering grades preschool – 3rd grade, and is based on a developmental-interactionist approach where the adult and child engage in the learning process together.


Area V: Humanities and Fine Arts (6-9 cr)*

HUM 100 FYE: History and Culture of Northern New Mexico (3)

Area VI: Library Technology (1cr)

LT 101 Library Research Skills (1)

PROGRAM REQUIREMENTS (29 CR)

ECE 202 Child Growth, Development and Learning (3)
ECE 218 Nutrition, Health, and Safety (2)
NortherN New Mexico College

ECE 220 Professionalism (2)
ECE 222 Introduction to Language, Literacy and Reading (3)
ECE 225 Curriculum Development—Birth through Age 4 (3)
ECE 226 Family and Community Collaboration (3)
ECE 238 Practicum-Birth through Age 4 (2)  
  Co-requisite ECE 225
ECE 285 Child Guidance (3)
ECE 254 Curriculum Development & Implementation  
  Age 3 through Grade 3 (3)
ECE 264 Practicum-Age 3 through Grade 3 (2)  
  Co-requisite ECE 254
ECE 295 Assessment of Children and Evaluation of Programs (3)

TOTAL CREDITS: 65

Associate of Arts  
ELEMENTARY EDUCATION

This program prepares teacher candidates to work in diverse educational settings in grades kindergarten through eight. Graduates of this program can transfer seamlessly to Northern’s Bachelor of Arts Degree in Elementary Education.

GENERAL EDUCATION (58 CR)

Area I. Communications (9 cr)
  ENG 111 English Comp. I (3)
  ENG 112 English Comp. II (3)
  SPCH 130 Public Speaking (3)

Area II. Mathematics (6 cr)
  MATH 150 College Algebra (3)
  Choose one of the following:
    MATH 145 Introduction to Probability and Statistics (3)
    MATH 155 Trigonometry (3)
    MATH 162 Calculus I (4)

Area III. Laboratory Sciences (12 cr)
  BIOL 110/L Current Topics in Biology with lab (4)
  Elective (8) Choose two additional courses from the Area III list on page 26.

Area IV. Social/Behavioral Sciences (6 cr)
  Select two elective courses from two different subject areas as listed on pages 26-27.

Area V. Humanities (21 cr)
  History (12 cr)
    HIST 161 History of the U.S. to 1877 (3)
HIST 162 History of the U.S. from 1877 (3)
HUM 100 FYE: History and Culture of Northern New Mexico (3)

Choose one of the following courses:
HIST 101 Western Civilization I (3)
HIST 102 Western Civilization II (3)

Fine Arts (6 cr)
ART 105 Introductions to Art (3)
Choose one introductory course (no applied courses) from the following
disciplines: Art, Music, Theatre.

Literature (3)
ENG Elective from ENG 260-296 (3)

Area VI. Library Research Skills (1 cr)
LT 101 Library research Skills (1)

PROGRAM REQUIREMENTS (7 CR)
ED 201 Foundations of Education (3)
ED 213 Field Experience I (1)
ED 220 Educational Psychology (3)

TOTAL CREDITS: 62

Bachelor of Arts
ELEMENTARY EDUCATION

This program prepares teacher candidates to work in diverse educational settings in
grades kindergarten through eight. Teacher candidates can choose from one of the
following three (3) majors:

Bilingual Education—work effectively in the classroom with diverse bilingual
students, and engage collaboratively with colleagues, families and communities
for student success.

TESOL (Teaching English to Speakers of Other Languages)—teach English to non-
English speakers.

Humanities and Social Sciences—work in a broad range of professional fields.

Admission to the Bachelor of Arts in Elementary Education program

1. Admission to Northern
2. Completed Bachelor of Arts program application
3. Letter of Intent
4. An overall GPA of 2.50 or higher
5. Passing score of 240 or higher on the New Mexico Assessment of Teacher Basic Skills
6. Completed application materials will be reviewed by the College of Education
and teacher candidates advised accordingly
GENERAL EDUCATION (58 CR)

Area I. Communications (9 cr)
- ENG 111 English Comp. I (3)
- ENG 112 English Comp. II (3)
- SPCH 130 Public Speaking (3)

Area II. Mathematics (6 cr)
- MATH 150 College Algebra (3)
Choose one of the following:
- MATH 145 Introduction to Probability and Statistics (3)
- MATH 155 Trigonometry (3)
- MATH 162 Calculus I (4)

Area III. Laboratory Sciences (12 cr)
- BIOL 110/L Current Topics in Biology with lab (4)
- Elective (8) Choose two additional courses from the Area III list shown on pages 26-27.

Area IV. Social/Behavioral Sciences (6 cr)
Select two elective courses from two different subject areas as listed on page 27.

Area V. Humanities (21 cr)

History (12 cr)
- HIST 161 History of the U.S. to 1877 (3)
- HIST 162 History of the U.S. from 1877 (3)
- HUM 100 FYE: History and Culture of Northern New Mexico (3)
Choose one of the following courses:
- HIST 101 Western Civilization I (3)
- HIST 102 Western Civilization II (3)

Fine Arts (6 cr)
- ART 105 Introductions to Art (3)
Choose one introductory course (no applied courses) from the following disciplines: Art, Music, Theatre.

Literature (3 cr)
- ENG Elective from ENG 260-296 (3)

Area VI. Library Technology (1 cr)
- LT 101 Library research Skills (1)

Area VII. Foreign Language (3 cr)

Program Requirements Common to the AA Degree (7 cr)
- ED 201 Foundations of Education (3)
- ED 213 Field Experience I (1)
- ED 220 Educational Psychology (3)
PROFESSIONAL PREPARATION REQUIREMENTS (43 CR)

Introductory Block

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED 311</td>
<td>Practicum I (1)</td>
</tr>
<tr>
<td>ED 326</td>
<td>Strategies for Successful Classrooms (2)</td>
</tr>
<tr>
<td>ED 305L</td>
<td>Integrated Technology in the K-8 Classroom (2)</td>
</tr>
<tr>
<td>ED 450</td>
<td>Pedagogy and Learning (3) (WIC)</td>
</tr>
</tbody>
</table>

Literacy and Language Arts Block

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED 410</td>
<td>Teaching &amp; Diagnosis of Reading (3)</td>
</tr>
<tr>
<td>ED 411</td>
<td>Practicum II (1)</td>
</tr>
<tr>
<td>ED 460</td>
<td>Reading &amp; Writing Across the Curriculum (Elem.) (3)</td>
</tr>
</tbody>
</table>

Math and Science Block

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>ED 313</td>
<td>Science &amp; Math for Educators I (3)</td>
</tr>
<tr>
<td>ED 322</td>
<td>Math for Educators I (3)</td>
</tr>
<tr>
<td>ED 422</td>
<td>Math for Educators II (3)</td>
</tr>
<tr>
<td>ED 423</td>
<td>Science &amp; Math for Educators II (3)</td>
</tr>
</tbody>
</table>

Exceptionalities and Assessment Block

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>SPED 475</td>
<td>Curriculum Methods &amp; Materials for Special Education (3)</td>
</tr>
<tr>
<td>ED 495</td>
<td>Assessment &amp; Evaluation of Student Learning (3)</td>
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</table>

Capstone

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>ED 479</td>
<td>Student Teaching (9)</td>
</tr>
<tr>
<td>ED 480</td>
<td>Student Teaching Seminar (1)</td>
</tr>
</tbody>
</table>

MAJOR REQUIREMENTS Choose ONE of the following majors:

Bilingual Education (24 cr)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>EDBE 301</td>
<td>Foundations of Bilingual/ESL Education (3)</td>
</tr>
<tr>
<td>EDBE 303</td>
<td>Introduction to Linguistics (3)</td>
</tr>
<tr>
<td>EDBE 305</td>
<td>Spanish Literacy for Bilingual Education (3) *</td>
</tr>
<tr>
<td>EDBE 306</td>
<td>Spanish for the Bilingual Classroom (3) *</td>
</tr>
<tr>
<td>EDBE 360</td>
<td>Methods of Teaching Bilingual/ESL (3)</td>
</tr>
<tr>
<td>EDBE 362</td>
<td>Second Language Acquisition (3)</td>
</tr>
<tr>
<td>EDBE 481</td>
<td>Linguistics and Phonetics for the Bilingual Teacher (3) *</td>
</tr>
<tr>
<td>EDBE 482</td>
<td>Spanish Language and Folklore of New Mexico for the Bilingual Teacher (3) *</td>
</tr>
</tbody>
</table>

*These courses are taught in Spanish.

TESOL (24 cr)

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>EDTE 301</td>
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<tr>
<td>EDTE 303</td>
<td>Introduction to Linguistics (3)</td>
</tr>
<tr>
<td>EDTE 360</td>
<td>Methods of Teaching Bilingual/ESL (3)</td>
</tr>
<tr>
<td>EDTE 362</td>
<td>Second Language Acquisition(3)</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
</tr>
<tr>
<td>------------</td>
<td>------------------------------------------------------------------------------</td>
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<tr>
<td>EDTE 380</td>
<td>Approaches to Teaching English Writing Skills to ESL/Bilingual Students (3)</td>
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<tr>
<td>EDTE 381</td>
<td>ESL Across the Content Areas (3)</td>
</tr>
<tr>
<td>EDTE 412</td>
<td>Assessing English Language Learners (3)</td>
</tr>
<tr>
<td>EDTE 413</td>
<td>Special Topics in TESOL (3)</td>
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</tbody>
</table>

**Humanities and Social Sciences (24 cr)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>HSS 222</td>
<td>Understanding Diverse Communities (3)</td>
</tr>
<tr>
<td>HSS 310</td>
<td>Indigenous Perspectives of New Mexico History &amp; Culture (4)</td>
</tr>
<tr>
<td>HSS 311</td>
<td>Reading in the Social Sciences (4)</td>
</tr>
<tr>
<td>HSS 320</td>
<td>Genesis of Math and Science (4)</td>
</tr>
<tr>
<td>HSS 410</td>
<td>Senior Seminar: Teaching the Humanities (1)</td>
</tr>
<tr>
<td>HSS 414</td>
<td>Humanity and Creativity (4)</td>
</tr>
<tr>
<td>HSS 421</td>
<td>History, Literature, Art, and Philosophy (4)</td>
</tr>
</tbody>
</table>

**TOTAL CREDITS: 133**

---

**Alternative Licensure Program (Certificate)**

**ELEMENTARY, SECONDARY, or SPECIAL EDUCATION**

This program of study leads to teacher licensure for individuals who already hold a degree (bachelor’s, master’s, or doctorate) from a regionally accredited college or university. Teacher candidates can choose from one of the following courses of study:

- **Elementary Education**—work in diverse educational settings in grades kindergarten through eight.
- **Secondary Education**—work in diverse educational settings in grades seven through twelve.
- **Special Education**—work with a diverse learning population and acquire strategies that are effective for all learners.

**Admission to the Alternative Licensure Program**

1. Admission to Northern
2. Completed Alternative Licensure Program application
3. Letter of Intent
4. Two (2) letters of recommendation
5. Transcript(s) of highest degree conferred
6. Completed application materials will be reviewed by the College of Education and teacher candidates advised accordingly

**FOR ALTERNATIVE ELEMENTARY (K-8) you must have one of the following:**

- **Bachelor’s Degree** (from a regionally accredited college or university) including 30 semester hours in a combination of language arts, mathematics, science, history, fine & performing arts and modern, classical & native language
- **OR**
**Master’s Degree** (from a regionally accredited college or university) including 12 graduate hours in a combination of language arts, mathematics, science, history, fine & performing arts and modern, classical & native language

OR

**Doctor’s Degree** (from a regionally accredited college or university) in elementary education

**FOR ALTERNATIVE SECONDARY (7-12) you must have one of the following:**

**Bachelor’s Degree** (from a regionally accredited college or university) including 30 semester hours in a teaching field

OR

**Master’s Degree** (from a regionally accredited college or university) including 12 graduate hours in a teaching field

OR

**Doctor’s Degree** (from a regionally accredited college or university) in the teaching field

**FOR ALTERNATIVE SPECIAL EDUCATION (K-12) you must have one of the following:**

**Bachelor’s Degree** (from a regionally accredited college or university) including 30 semester hours in a combination of language arts, mathematics, science, history, fine & performing arts and modern, classical & native language

OR

**Master’s Degree** (from a regionally accredited college or university) including 12 graduate hours in a combination of language arts, mathematics, science, history, fine & performing arts and modern, classical & native language

OR

**Doctor’s Degree** (from a regionally accredited college or university) in special education

**ELEMENTARY (K-8)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED 401</td>
<td>Foundations of Education (3)</td>
<td></td>
</tr>
<tr>
<td>ED 412</td>
<td>Teaching and Diagnosis of Reading (Elem) (3)</td>
<td></td>
</tr>
<tr>
<td>ED 452</td>
<td>Pedagogy and Human Learning (3)</td>
<td></td>
</tr>
<tr>
<td>ED 464</td>
<td>Reading and Writing Across the Curriculum (Elem) (3)</td>
<td></td>
</tr>
<tr>
<td>ED 493</td>
<td>The Integrated Elementary Classroom (2)</td>
<td></td>
</tr>
<tr>
<td>ED 492</td>
<td>Assessment and Evaluation of Student Learning (3)</td>
<td></td>
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<tr>
<td>ED 496</td>
<td>Supervised Field Experience (Elem) (1)</td>
<td></td>
</tr>
<tr>
<td>ED 496L</td>
<td>Supervised Field Experience Lab (Elem) (2)</td>
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</tbody>
</table>

**TOTAL CREDITS: 20**

**SECONDARY (7-12)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED 401</td>
<td>Foundations of Education (3)</td>
<td></td>
</tr>
<tr>
<td>ED 452</td>
<td>Pedagogy and Human Learning (3)</td>
<td></td>
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<tr>
<td>Course Code</td>
<td>Course Title</td>
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</tr>
<tr>
<td>------------</td>
<td>--------------------------------------------------</td>
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<tr>
<td>ED 462</td>
<td>Reading and Writing Across the Curriculum (Sec) (3)</td>
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<tr>
<td>ED 474</td>
<td>Methods and Materials in Secondary Education (3)</td>
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<tr>
<td>ED 492</td>
<td>Assessment and Evaluation of Student Learning (3)</td>
<td></td>
</tr>
<tr>
<td>ED 498</td>
<td>Supervised Field Experience (Sec) (1)</td>
<td></td>
</tr>
<tr>
<td>ED 498L</td>
<td>Supervised Field Experience Lab (Sec) (2)</td>
<td></td>
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</table>

**TOTAL CREDITS: 18**

**SPECIAL EDUCATION (K-12)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>SPED 401</td>
<td>Foundations of Education (3)</td>
</tr>
<tr>
<td>SPED 455</td>
<td>The Special Education Program: IEPs and Assessment (4)</td>
</tr>
<tr>
<td>SPED 465</td>
<td>Reading for Special Learners (3)</td>
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<tr>
<td>SPED 475</td>
<td>Curriculum Methods and Materials for Special Learners (3)</td>
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<tr>
<td>SPED 485</td>
<td>Teaching Reading in Special Education (3)</td>
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<tr>
<td>SPED 497</td>
<td>Supervised Field Experience (1)</td>
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<tr>
<td>SPED 497L</td>
<td>Supervised Field Experience Lab (3)</td>
</tr>
</tbody>
</table>

**TOTAL CREDITS: 20**
COLLEGE of NURSING and HEALTH SCIENCES

The College of Nursing & Health Sciences offers certificates and degrees in the areas of Allied Health, Massage Therapy, Nursing, and Radiologic Technology. Degrees offered include: Associate of Applied Science in Allied Health, Certificate and Associate of Applied Science in Massage Therapy, Certificate of Practical Nursing, Associate of Applied Science in Nursing, Associate of Science in Nursing, Bachelor of Science in Nursing (RN to BSN), and Associate of Applied Science in Radiologic Technology.

Ellen Trabka, MSN  Dean  747.2209  etrabka@nnmc.edu

ASSOCIATE DEGREE NURSING PROGRAM

Theresa Lopez, MSN, CNE  Director  747.2282  talopez@nnmc.edu
Helen Alarid, MSN  Faculty  747.2283  halarid@nnmc.edu
Karen Duncan, MS  Faculty  747.2250  duncank@nnmc.edu
Lucas Gonzales, MSN  Faculty  747.2208  lucasgonzales@nnmc.edu
Cappie Hausman, MSN  Faculty  747.2284  chausman@nnmc.edu
Raj Inder K. Khalsa, MSN  Faculty  747.2281  rikkhalsa@nnmc.edu

RN TO BSN NURSING PROGRAM

Darlene Hess, PhD  Associate Dir.  747.2278

RADIOLOGIC TECHNOLOGY PROGRAM

Mike Frain, MA, RT (R)  Director  747.2218  frainm@nnmc.edu
Cheryl Peachey, BS, RT (R)  Faculty  747.2229  cherylp@nnmc.edu

MASSAGE THERAPY PROGRAM

Jot Kaur Khalsa, MA  Coordinator  747.2178  jotkaur@nnmc.edu

Associate of Applied Science
ALLIED HEALTH

This program provides basic courses designed for maximum transfer to satisfy the requirements for pre-professional allied health programs at four-year institutions, as well as entry-level employment in the health care field for those who choose a career in the area of Nurse Aide.

GENERAL EDUCATION (29 CR)

Area I. Communications (6)

   ENG  111   English Composition I (3)
Choose one of the following courses:
- ENG 112 English Composition II (3)
- ENG 116 Technical Writing (3)
- SPCH 130 Public Speaking (3)

**Area II and III. Mathematics (3)**

Choose one of the following courses:
- MATH 130 Intermediate Algebra (3)
- MATH 145 Introduction to Probability and Statistics (3)
- MATH 150 College Algebra (3)

**Area III. Laboratory Sciences (8)**
- BIOL 237/L Human Anatomy & Physiology I with lab (4)
- BIOL 238/L Human Anatomy & Physiology II with lab (4)

**Area IV. Social/Behavioral Sciences (6)**
- PSY 105 General Psychology (3)
- SOC 101 Introduction to Sociology (3)

**Area V. Humanities (6)**
- HUM 100 FYE: History and Culture of Northern New Mexico (3)
- Elective (3)

**Area VI. Library Technology (1)**
- LT 101 Library Research Skills (1)

**PROGRAM REQUIREMENTS (34 CR)**
- BCIS 102 Computer Literacy (3)
- NURS 100/L Nurse Aide with lab (5)
- HSCI 125 Medical Terminology (2)
- HSCI 204 Nutrition (3)
- PSY 290 Developmental Psychology (3)
- SPAN 230 Spanish for the Health Professions (3)
- PSY or SOC elective (3)
- Electives: HSCI or Laboratory Science electives (12)

**TOTAL CREDITS: 64**
Certificate
MASSAGE THERAPY

This program provides 650+ hours of Massage Therapy Training designed to meet the requirements to sit for the National Certification Board for Therapeutic Massage & Bodywork (NCBTMB) exam or the MBLEX exam by the Federation of State Massage Therapy Boards (FSMTB) and apply for state licensure which is required for entry-level employment in Massage Therapy in New Mexico. A formal application to and acceptance into the program is necessary before you may enroll in any MAS-prefixed courses. Acceptance is granted for the Fall semester of each year.

To be accepted into the program, you must have already completed ENG 109N (Basic Composition I) and MATH 100N (Fundamentals of Mathematics). The Massage courses have been developed to coincide with the general education courses, so the sequence as listed must be followed once you have entered the Massage Therapy Program.

GENERAL EDUCATION (7 CR)

Area I. Communications (4)
ENG 109N Basic Composition II (4)

Area II. Math (3-4)
MATH 100N (4) or a higher-level math course (3)

PROGRAM REQUIREMENTS (37.5 CR)

MAS 110 Improving Your Body Mechanics (1)
MAS 124 Business for Massage Professionals (2)
HSCI 110 Anatomy & Physiology for Massage Therapists I (3)
HSCI 111 Anatomy & Physiology for Massage Therapists II (3)

OR
BIOL 237 Human Anatomy & Physiology I (3)
BIOL 237L Human Anatomy & Physiology I Lab (1)
BIOL 238 Human Anatomy & Physiology II (3)
BIOL 238L Human Anatomy & Physiology II Lab (1)
HSCI 109 CPR/First Aid (.5)
HSCI 112 Pathology for Massage Therapists (3)
HSCI 114 Kinesiology for Massage Therapists (2)
HSCI 152 Legal and Ethical Issues in Massage Therapy (2)
MAS 101L Massage Therapy I (4)
MAS 103L Massage Therapy II (4)
MAS 104L Massage Therapy Internship (3)
MAS 108L Massage Therapy Practice Lab (2)

Choose 8 credits from the following electives:

HSCI 125 Medical Terminology (2)
HSCI 204 Nutrition (3)
IHS 102 Intro to Homeopathy (3)
IHS 103 Meditation and Breath: Mind Body Healing (2)
IHS 115  Intro to Traditional Chinese Medicine (3)
IHS 116  Intro to Aromatherapy (3)
IHS 118  Intro to Integrative Healing (3)
IHS 121  Intro to Ayurveda: Ancient Science of Living (3)
IHS 123  Intro to Acupressure (1)
IHS 162  Nutrition for Diabetes (1)
IHS 208  Holistic Nutrition (3)
IHS 222  Intro to Five Elements & Twelve Channels (2)
IHS 255  Intro to Herbal Medicine (2)
IHS 257  Herbal Pharmacy (2)
IHS 264  Therapeutic Touch Techniques (3)
MAS 111  Applied Kinesiology (1)
MAS 113  Intro to Foot Reflexology (2)
MAS 115  Intro to Cranial Sacral Techniques I (1)
MAS 116  Cranial Sacral Techniques II (2)
MAS 117  Intro to Thai Massage (1)
MAS 120  Thai Massage II (1)
MAS 121  Usui Reiki Level I (1)
MAS 122  Hot Stones and Basic Hydrotherapy (1)
MAS 123  Chair Massage (1)
MAS 215  Cranial Sacral III (1)

TOTAL CREDITS: 44.5

REQUIRED SEQUENCE OF COURSES:

**Prerequisites**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 109N</td>
<td>Basic Composition II (4)</td>
</tr>
<tr>
<td>MATH 100N</td>
<td>or a higher-level math course (3)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Term</th>
<th>Courses</th>
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<tbody>
<tr>
<td>Fall (18)</td>
<td>HSCI 110 (3) or BIO 237/L (4)</td>
</tr>
<tr>
<td></td>
<td>MAS 101L (4)</td>
</tr>
<tr>
<td></td>
<td>MAS 108L (2)</td>
</tr>
<tr>
<td></td>
<td>MAS 110 (1)</td>
</tr>
<tr>
<td></td>
<td>HSCI 114 (2)</td>
</tr>
<tr>
<td></td>
<td>Electives (4)</td>
</tr>
<tr>
<td>Spring (19.5)</td>
<td>HSCI 111 (3) or BIO 238/L (4)</td>
</tr>
<tr>
<td></td>
<td>MAS 103L (4)</td>
</tr>
<tr>
<td></td>
<td>MAS 104L (3)</td>
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<tr>
<td></td>
<td>MAS 109 (0.5)</td>
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<tr>
<td></td>
<td>MAS 124 (2)</td>
</tr>
<tr>
<td></td>
<td>Electives (4)</td>
</tr>
</tbody>
</table>

*Other electives may be added for credit by permission of the Chairperson*
ASSOCIATE OF APPLIED SCIENCE
MASSAGE THERAPY

This degree is for students who have completed the certificate of Massage Therapy and wish to continue their studies and receive an Associate’s Degree. This degree will broaden the student’s knowledge base in the Massage Therapy field. Employment opportunities include working with an existing Spa, Chiropractors, Alternative Healing Centers, Health Care Clinics, or self-employment.

GENERAL EDUCATION (27 CR)

Area I. Communications (6)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>English Composition I (3)</td>
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</table>

Choose one of the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 112</td>
<td>English Composition II (3)</td>
</tr>
<tr>
<td>ENG 116</td>
<td>Technical Writing (3)</td>
</tr>
<tr>
<td>SPAN 230</td>
<td>Spanish for Health Professions (3)</td>
</tr>
<tr>
<td>SPCH 130</td>
<td>Public Speaking (3)</td>
</tr>
</tbody>
</table>

Area II and III. Math/Computers/Lab Sciences (11)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 237/L</td>
<td>Human Anatomy and Physiology I with Lab (4)</td>
</tr>
<tr>
<td>BIOL 238/L</td>
<td>Human Anatomy and Physiology II with Lab (4)</td>
</tr>
<tr>
<td>BCIS 102</td>
<td>Computer Literacy (3)</td>
</tr>
</tbody>
</table>

Area IV. Social/Behavioral Sciences (6)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSY</td>
<td>Elective (3)</td>
</tr>
<tr>
<td>SOC</td>
<td>Elective (3)</td>
</tr>
</tbody>
</table>

Area V. Humanities (3)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUM 100</td>
<td>FYE: History and Culture of Northern New Mexico (3)</td>
</tr>
</tbody>
</table>

Area VI. Library Technology (1)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LT 101</td>
<td>Library research Skills (1)</td>
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PROGRAM REQUIREMENTS (39 CR)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAS 110</td>
<td>Improving Your Body Mechanics (1)</td>
</tr>
<tr>
<td>MAS 124</td>
<td>Business for Massage Professionals (2)</td>
</tr>
<tr>
<td>HSCI 112</td>
<td>Pathology for Massage Therapists (3)</td>
</tr>
<tr>
<td>HSCI 114</td>
<td>Kinesiology for Massage Therapists (2)</td>
</tr>
<tr>
<td>HSCI 125</td>
<td>Medical Terminology (2)</td>
</tr>
<tr>
<td>HSCI 152</td>
<td>Legal and Ethical Issues in Massage Therapy (2)</td>
</tr>
<tr>
<td>MAS 101L</td>
<td>Massage Therapy I (4)</td>
</tr>
<tr>
<td>MAS 103L</td>
<td>Massage Therapy II (4)</td>
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<tr>
<td>MAS 104L</td>
<td>Massage Therapy Internship (3)</td>
</tr>
<tr>
<td>MAS 108L</td>
<td>Massage Therapy Practice Lab (2)</td>
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</table>

Choose 14 credits from the following electives:

<table>
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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>HSCI 204</td>
<td>Nutrition (3)</td>
</tr>
</tbody>
</table>
IHS 102 Intro to Homeopathy (3)
IHS 103 Meditation and Breath: Mind Body Healing (2)
IHS 115 Intro to Traditional Chinese Medicine (3)
IHS 116 Intro to Aromatherapy (3)
IHS 118 Intro to Integrative Healing (3)
IHS 121 Intro to Ayurveda: Ancient Science of Living (3)
IHS 123 Intro to Acupressure (1)
IHS 162 Nutrition for Diabetes (1)
IHS 208 Holistic Nutrition (3)
IHS 222 Intro to Five Elements & Twelve Channels (2)
IHS 255 Intro to Herbal Medicine (2)
IHS 257 Herbal Pharmacy (2)
IHS 264 Therapeutic Touch Techniques (3)
MAS 111 Applied Kinesiology (1)
MAS 113 Intro to Foot Reflexology (2)
MAS 115 Intro to Cranial Sacral Techniques I (1)
MAS 116 Cranial Sacral Techniques II (2)
MAS 117 Intro to Thai Massage (1)
MAS 120 Thai Massage II (1)
MAS 121 Usui Reiki Level I (1)
MAS 122 Hot Stones and Basic Hydrotherapy (1)
MAS 123 Chair Massage (1)
MAS 215 Cranial Sacral III (1)

Other electives may be added for credit by permission of the Chairperson

TOTAL CREDITS: 66

Associate Degree in Nursing Program (ADN)

Northern offers a rigorous, evidence-based three-year associate degree in nursing curriculum. The ADN program is approved by the State of New Mexico Board of Nursing (36-401) and has National League for Nursing Accrediting Commission (NLNAC) Candidate status.

Northern’s Associate Degree in Nursing (ADN) Program is a full-time program of nursing studies with a licensed practical nurse (LPN) step-out option as well as an LPN advanced placement entrance option.

The ADN program has only one curriculum for all students accepted into the program. Once a student has completed the required pre-requisite courses and has been formally accepted into the program, the nursing curriculum is delivered over four to five semesters with the exception of the advanced placement LPN option. The advanced placement LPN option takes place over two semesters and includes an additional short-term course taken in the summer prior to program entry.

Graduates of the ADN program obtain either an Associate of Applied Science or an Associate of Science Degree in Nursing. There is a Practical Nurse Certificate option
after successful completion of the first year (Level I) of nursing course work.

The mission of the ADN program is to provide a quality education that prepares nurses at the advanced beginner level to provide safe, holistic care to clients across the lifespan. The ADN program focuses on admitting and graduating students from the local community. The graduates of the ADN program are role models for others and demonstrate a commitment to lifelong learning.

The concept of educational humanism, as found in the writings of Carl Rogers and H. Jerome Freiberg, and the philosophy and theory of human caring, as developed by nursing theorist Jean Watson, serve as the foundation for the ADN program philosophy and provide the disciplinary, scientific, and professional guidelines within which faculty members and students learn and grow.

Upon successful completion of the first-year nursing courses (level I), students may opt to take two additional nursing courses (NURS 116L and NURS 119) and receive a Practical Nurse Certificate. Students are then eligible to take the PN National Council Licensure Examination (NCLEX-PN). Students may exit the program at this time or continue on with second-year nursing courses (level II).

Upon successful completion of the second year nursing courses (level II) students receive an Associate of Applied Science Degree in Nursing or an Associate of Science Degree in Nursing and are eligible to take the RN licensure exam (NCLEX-RN).

Graduates of the ADN program are prepared to continue toward completion of a Bachelor of Science in Nursing.

Admission to Northern does not ensure admission to the ADN program. Program capacity requires limited enrollment. Applicants are rank-ordered based on cumulative points earned on selection criteria.

The ADN program is demanding and requires a full-time commitment, extensive study time outside the classroom, and occasional travel outside the area. Because of the rigorous nature of the program, limited employment is recommended.

Due to the rapidly changing nature of the health care system as well as state-mandated changes, the ADN program faculty review and revise the curriculum on an ongoing basis. Changes can be anticipated regarding admission requirements, course requirements, and program policies. Students are advised to seek initial and ongoing advisement from the program director or a nursing advisor.

EMPLOYMENT OPPORTUNITIES

Graduates from the ADN program are prepared to enter nursing practice at the advanced beginner level. Areas of employment include acute care facilities, long-term care, home health care, physician’s offices, clinics, schools, and other settings.

ADDITIONAL REQUIREMENTS RELATING TO LICENSURE

The New Mexico State Board of Nursing has restrictions for licensure and may deny, revoke, or suspend any license applied for upon grounds of particular felony violations. Northern assumes no responsibility for the denial of licensure by the New Mexico Board of Nursing or any state Board of Nursing.

Federal law requires certain health care agencies to conduct criminal background checks on their employees. This requirement may be mandated for students placed
in these health care facilities for clinical training. Behaviors which may be cause for a student being ineligible for clinical placement include, but are not limited to, the following: physical or sexual abuse, theft, illegal use of weapons, and illegal use or possession of controlled substances.

ADMISSION REQUIREMENTS FOR THE ADN PROGRAM

This section contains amended information:

1. Graduation from High School or GED
2. Cumulative GPA of 2.50 or higher
3. A minimum total individual score of 67% on the KAPLAN pre-admission examination.
4. A minimum individual score of 73% in reading on the KAPLAN pre-admission examination.
5. A minimum individual score of 55% in science on the KAPLAN pre-admission examination.
6. Submission of a completed nursing application packet by April 30th for fall admission consideration.
7. Completion of the following pre-requisite course work by the end of the spring semester prior to anticipated entry into the ADN program with a grade of “C” or better:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>3</td>
</tr>
<tr>
<td>PSY 105</td>
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</tr>
<tr>
<td>PSY 290</td>
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<td>BIOL 237</td>
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<td>BIOL 238</td>
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<td>BIOL 210</td>
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<td>NURS 100 &amp; 100L</td>
<td>5</td>
</tr>
<tr>
<td>LT 101</td>
<td>1</td>
</tr>
</tbody>
</table>

*Students who have completed a minimum of 30 credit hours of college level courses are not required to take LT 101, but are highly encouraged to do so.

Note:

- Anatomy and Physiology Courses must be completed within five (5) years prior to entry into the ADN program.
- All nursing students are expected to have basic computer skills including word processing and internet access.
- All nursing students must have and maintain current American Heart Association Basic Life Support (CPR) certification and current immunizations prior to participating in clinical nursing courses.
- Requirements for KAPLAN admission test scores, both total and content-specific,
are subject to change.

- Formal application and acceptance into the nursing program is required before students may enroll in any NURS-prefixed courses listed in the program requirements. Support courses may be taken before entry into the program.

**ADVANCED PLACEMENT FOR LPNS**

**This section contains amended information:**

Applicants who possess an LPN license are given consideration for advanced placement in the ADN program. *Licensed Practical Nurses applying for advanced placement must meet the following criteria:*

- Meet with an ADN program advisor.
- Apply to Northern New Mexico College.
- Complete the ADN Program application form, including the essay.
- Submit two letters of professional reference.
- Submit a résumé.
- Submit verification of active licensure in the United States.
- Successfully pass the final examination for Nursing Fundamentals (NURS 113) with a minimum score of 77% on the first attempt. A study guide will be supplied.
- Successfully pass the Math Competency exam for Med-Surg 1 (NURS 125L) with a minimum score of 80% on the first attempt. A study guide will be supplied.
- The student is not permitted to take either exam (Nursing Fundamentals Final and Math Exam) more than once. All scores are final.
- Meet all other state admission requirements for entrance into the ADN program (immunizations, current CPR, current academic transcripts, etc.).
- Successfully complete NURS 200 in the summer semester prior to program entry.

**TRANSFER STUDENTS**

Students transferring to the Associate Degree in Nursing Program are subject to the same admission and progression requirements as all nursing students. The Registrar and nursing faculty will evaluate transcripts, course syllabi, and course outlines to determine eligibility and placement status. Potential students must have completed all transfer courses with a grade of “C” or better. Students must complete their last 15 credit hours at Northern in order to graduate.

**For more information please contact:**

Tina Garcia, ADN Program Administrative Assistant
tinag@nnmc.edu or 505.747.2207 or

Theresa A. Lopez, MSN, RNC, CNE
Associate Degree in Nursing Program Director
talopez@nnmc.edu or 505.747.2282
Associate Degree in Nursing Program Curriculum

Certificate in
PRACTICAL NURSING

Students who complete the pre-requisites and Level I course work for the ADN Program as well as NURS 119 Role Transition-PN and NURS 116L Intro to Maternal/Child Nursing Clinical have the option to petition for the Certificate in Practical Nursing. Students may exit the program at this time or continue to Year II/Level II.

GENERAL EDUCATION (21 CR)

Area I. Communications (3 cr)
ENG 111 English Composition (3)

Area II and III Math/Computers/Lab Sciences (12 cr)
BIOL 210L Microbiology with Lab (4)
BIOL 237L Human Anatomy & Physiology I with Lab (4)
BIOL 238L Human Anatomy & Physiology with Lab (4)

Area IV. Social/Behavioral Science (6 cr)
PSY 105 General Psychology (3)
PSY 290 Developmental Psychology (3)

Area VI. Library Technology (1 cr)
LT 101 Library Research Skills (1)

Note: Students who have completed a minimum of 30 credit hours of college level courses are not required to take LT 101, but are highly encouraged to do so.

Program requirements (27 cr)
HSCI 204 Nutrition (3)
NURS 104 Dosage Calculations (2)
NURS 106 Pharmacology I (2)
NURS 107 Pharmacology II (2)
NURS 113 Nursing Fundamentals (4)
NURS 113L Nursing Fundamentals Clinical (2)
NURS 114L Health Assessment (1)
NURS 116 Intro to Maternal/Child Nursing (2)
NURS 116L Intro to Maternal/Child Nursing Clinical (1)
NURS 119 Role Transition-PN (2)
NURS 125 Medical/Surgical Nursing I (4)
NURS 125L Medical/Surgical Clinical I (2)

TOTAL CREDITS: 49
SEQUENCE OF COURSES

<table>
<thead>
<tr>
<th>Fall (11 cr)</th>
<th>Spring (10 cr)</th>
<th>Summer (3 cr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 104 (2)</td>
<td>NURS 107 (2)</td>
<td>NURS 119 (2)</td>
</tr>
<tr>
<td>NURS 106 (2)</td>
<td>NURS 116 (2)</td>
<td>offered in spring or</td>
</tr>
<tr>
<td>NURS 113 (4)</td>
<td>NURS 125 (4)</td>
<td>summer semester]</td>
</tr>
<tr>
<td>NURS 113L (2)</td>
<td>NURS 125L (2)</td>
<td>NURS 116L (1)</td>
</tr>
<tr>
<td>NURS 114L (1)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Associate Degree in NURSING

Students who pursue the Associate Degree in Nursing may elect to complete the Associate of Applied Science in Nursing degree or the Associate of Science in Nursing degree.

Associate of Applied Science (AAS) in NURSING

GENERAL EDUCATION (28 CR)

Area I. Communications (6 cr)

- ENG 111 English Composition I (3)

Choose one of the following courses:

- ENG 112 English Composition II (3)
- ENG 116 Technical Writing (3)
- SPCH 130 Public Speaking (3)
- SPAN 230 Spanish for Health Professionals (3)

Area II and III. Mathematics/Computers/Lab Sciences (12 cr)

- BIOL 210L Microbiology with Lab (4)
- BIOL 237L Human Anatomy & Physiology I with Lab (4)
- BIOL 238L Human Anatomy & Physiology with Lab (4)

Area IV. Social/Behavioral Science (6 cr)

- PSY 105 General Psychology (3)
- PSY 290 Developmental Psychology (3)

Area V. Humanities (3 cr)

- HUM 100 FYE: History and Culture of Northern New Mexico (3)

Note: Students who have completed a minimum of 30 credit hours of college level courses are not required to take HUM 100, but must complete the Humanities three credit hour requirement with a Humanities course of their choice.

Area VI. Library Technology (1)

- LT 101 Library Research Skills (1)

Note: Students who have completed a minimum of 30 credit hours of college level courses are not required to take LT 101, but are highly encouraged to do so.
PROGRAM REQUIREMENTS (44 or 47 CR)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSCI 204</td>
<td>Nutrition</td>
<td>(3)</td>
</tr>
<tr>
<td>NURS 104</td>
<td>Dosage Calculations</td>
<td>(2)</td>
</tr>
<tr>
<td>NURS 106</td>
<td>Pharmacology I</td>
<td>(2)</td>
</tr>
<tr>
<td>NURS 107</td>
<td>Pharmacology II</td>
<td>(2)</td>
</tr>
<tr>
<td>NURS 113</td>
<td>Nursing Fundamentals</td>
<td>(4)</td>
</tr>
<tr>
<td>NURS 113L</td>
<td>Nursing Fundamentals Clinical</td>
<td>(2)</td>
</tr>
<tr>
<td>NURS 114L</td>
<td>Health Assessment</td>
<td>(1)</td>
</tr>
<tr>
<td>NURS 116</td>
<td>Intro to Maternal/Child Nursing</td>
<td>(2)</td>
</tr>
<tr>
<td>NURS 125</td>
<td>Medical/Surgical Nursing I</td>
<td>(4)</td>
</tr>
<tr>
<td>NURS 125L</td>
<td>Medical/Surgical Nursing Clinical I</td>
<td>(2)</td>
</tr>
<tr>
<td>NURS 200</td>
<td>LPN to RN Role Transition</td>
<td>(3)*</td>
</tr>
<tr>
<td>NURS 217</td>
<td>Maternal/Newborn Nursing</td>
<td>(1)</td>
</tr>
<tr>
<td>NURS 217L</td>
<td>Maternal/Newborn Nursing Clinical</td>
<td>(1)</td>
</tr>
<tr>
<td>NURS 218</td>
<td>Pediatric Nursing</td>
<td>(1)</td>
</tr>
<tr>
<td>NURS 218L</td>
<td>Pediatric Nursing Clinical</td>
<td>(1)</td>
</tr>
<tr>
<td>NURS 225</td>
<td>Medical Surgical Nursing II</td>
<td>(4)</td>
</tr>
<tr>
<td>NURS 225L</td>
<td>Medical Surgical Nursing Clinical II</td>
<td>(2)</td>
</tr>
<tr>
<td>NURS 235</td>
<td>Medical Surgical Nursing III</td>
<td>(4)</td>
</tr>
<tr>
<td>NURS 235L</td>
<td>Medical Surgical Nursing Clinical III</td>
<td>(2)</td>
</tr>
<tr>
<td>NURS 214</td>
<td>Psychiatric/Mental Health Nursing</td>
<td>(2)</td>
</tr>
<tr>
<td>NURS 214L</td>
<td>Psychiatric/Mental Health Nursing Clinical</td>
<td>(1)</td>
</tr>
<tr>
<td>NURS 240</td>
<td>Role Transition/Registered Nurse</td>
<td>(1)</td>
</tr>
</tbody>
</table>

TOTAL CREDITS: 72 or 75

SEQUENCE OF COURSES

YEAR I LEVEL I

<table>
<thead>
<tr>
<th>Semester</th>
<th>Fall Semester (14 cr)</th>
<th>Spring Semester (10 cr)</th>
<th>Summer (3 cr)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NURS 104 (2)</td>
<td>NURS 107 (2)</td>
<td>NURS 200 (3)*</td>
</tr>
<tr>
<td></td>
<td>NURS 106 (2)</td>
<td>NURS 116 (2)</td>
<td>*Required for advanced placement LPNs</td>
</tr>
<tr>
<td></td>
<td>NURS 113 (4)</td>
<td>NURS 125 (4)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NURS 113L (2)</td>
<td>NURS 125L (2)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NURS 114L (1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Communication Elective (3)</td>
<td></td>
<td></td>
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</tbody>
</table>

YEAR II LEVEL II

<table>
<thead>
<tr>
<th>Semester</th>
<th>Fall Semester (10 cr)</th>
<th>Spring Semester (10 cr)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NURS 225 (4)</td>
<td>NURS 235(4)</td>
</tr>
<tr>
<td></td>
<td>NURS 225L (2)</td>
<td>NURS 235L (2)</td>
</tr>
<tr>
<td></td>
<td>NURS 217 (1)</td>
<td>NURS 214 (2)</td>
</tr>
<tr>
<td></td>
<td>NURS 217L (1)</td>
<td>NURS 214L (1)</td>
</tr>
<tr>
<td></td>
<td>NURS 218 (1)</td>
<td>NURS 240 (1)</td>
</tr>
<tr>
<td></td>
<td>NURS 218L (1)</td>
<td></td>
</tr>
</tbody>
</table>
Associate of Science (AS)
in NURSING

This degree is designed as an alternative to the Associate of Applied Science degree in Nursing. This degree allows students to more closely meet the entry baccalaureate requirements of colleges of nursing. This degree articulates with the Northern RN to BSN Program.

GENERAL EDUCATION (40 CR)

Area I. Communications (9 cr)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>English Composition I</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 130</td>
<td>Public Speaking</td>
<td>3</td>
</tr>
</tbody>
</table>

Choose one of the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 112</td>
<td>English Composition II</td>
<td>3</td>
</tr>
<tr>
<td>ENG 116</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

Area II. Mathematics (3 cr) Choose one of the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 145</td>
<td>Introduction to Probability and Statistics</td>
<td>3</td>
</tr>
</tbody>
</table>

or higher level math class

Area III. Laboratory Science (12 cr)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 210L</td>
<td>Microbiology with Lab</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 237L</td>
<td>Human Anatomy &amp; Physiology I with Lab</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 238L</td>
<td>Human Anatomy &amp; Physiology with Lab</td>
<td>4</td>
</tr>
</tbody>
</table>

Area IV. Social/Behavioral Science (6-9 cr)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSY 105</td>
<td>General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 290</td>
<td>Developmental Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

If you choose to take a third course in this area, it must be from a discipline other than PSYCH. If you choose a third course from the Social/Behavioral Sciences area, you need only complete two (6 cr) humanities courses. See pages 26-27 for a complete list of Social/Behavioral Science courses.

Area V. Humanities and Fine Arts (6–9 cr)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUM 100</td>
<td>FYE: History and Culture of Northern New Mexico</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives (3-6)

You must select courses from at least two different discipline areas. If you have chosen to take three courses from the social science area, you will need two courses from this area, each of which must be from different disciplines. See pages 27-28 for a complete list of Social/Behavioral Science courses.

Area VI. Library Technology (1)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LT 101</td>
<td>Library Research Skills</td>
<td>1</td>
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</tbody>
</table>

Note: Students who have completed a minimum of 30 credit hours of college level courses are not required to take LT 101, but are highly encouraged to do so.

PROGRAM REQUIREMENTS (44 CR)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>HSCI 204</td>
<td>Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
</tr>
<tr>
<td>-------------</td>
<td>---------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>NURS 104</td>
<td>Dosage Calculations</td>
<td>(2)</td>
</tr>
<tr>
<td>NURS 106</td>
<td>Pharmacology I</td>
<td>(2)</td>
</tr>
<tr>
<td>NURS 107</td>
<td>Pharmacology II</td>
<td>(2)</td>
</tr>
<tr>
<td>NURS 113</td>
<td>Nursing Fundamentals</td>
<td>(4)</td>
</tr>
<tr>
<td>NURS 113L</td>
<td>Nursing Fundamentals Clinical</td>
<td>(2)</td>
</tr>
<tr>
<td>NURS 114L</td>
<td>Health Assessment</td>
<td>(1)</td>
</tr>
<tr>
<td>NURS 116</td>
<td>Intro to Maternal/Child Nursing</td>
<td>(2)</td>
</tr>
<tr>
<td>NURS 125</td>
<td>Medical/Surgical Nursing I</td>
<td>(4)</td>
</tr>
<tr>
<td>NURS 125L</td>
<td>Medical/Surgical Nursing Clinical I</td>
<td>(2)</td>
</tr>
<tr>
<td>NURS 200</td>
<td>LPN to RN Role Transition</td>
<td>(3)</td>
</tr>
</tbody>
</table>

*Required for advanced placement LPNs only

TOTAL CREDITS: 84

SEQUENCE OF COURSES

**Year I Level I**

<table>
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<tr>
<th>Fall Semester (14 cr)</th>
<th>Spring Semester (16 cr)</th>
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</thead>
<tbody>
<tr>
<td>NURS 104 (2)</td>
<td>NURS 107 (2)</td>
</tr>
<tr>
<td>NURS 106 (2)</td>
<td>NURS 116 (2)</td>
</tr>
<tr>
<td>NURS 113 (4)</td>
<td>NURS 125 (4)</td>
</tr>
<tr>
<td>NURS 113L (2)</td>
<td>NURS 125L (2)</td>
</tr>
<tr>
<td>NURS 114L (1)</td>
<td>Humanities Elective (3)</td>
</tr>
<tr>
<td>SPCH 130 (3)</td>
<td>Communication Elective (3)</td>
</tr>
</tbody>
</table>

**Year II Level II**

<table>
<thead>
<tr>
<th>Fall Semester (13 cr)</th>
<th>Spring Semester (13 cr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 225 (4)</td>
<td>NURS 235 (4)</td>
</tr>
<tr>
<td>NURS 225L (2)</td>
<td>NURS 235L (2)</td>
</tr>
<tr>
<td>NURS 217 (1)</td>
<td>NURS 214 (2)</td>
</tr>
<tr>
<td>NURS 217L (1)</td>
<td>NURS 214L (1)</td>
</tr>
<tr>
<td>NURS 218 (1)</td>
<td>NURS 240 (1)</td>
</tr>
<tr>
<td>NURS 218L (1)</td>
<td>Humanities /Social Behavioral Elective (3)</td>
</tr>
<tr>
<td>Math 145 (3)</td>
<td></td>
</tr>
</tbody>
</table>
RN to BSN Nursing Program

The RN to BSN Nursing Program is designed for and limited to individuals who are licensed as registered nurses (RN) in the United States. This Program is designed to articulate with many two-year Associate Degree Nursing (ADN) programs. The RN to BSN Program prepares registered nurses to assume leadership roles as an integral nurse at the bedside, within an organization, in the community, and in the profession. The Program provides a unique and innovative nursing curriculum that is based upon the Theory of Integral Nursing. Through its integrative care focus, this Program prepares nurses to provide holistic, intentional, relationship-centered care that addresses individual and collective health.

The Program requires 131 credit hours for graduation. Forty-one credits of lower-division courses, to include nursing courses from an Associate Degree in Nursing program, may be applied toward the BSN degree. Students must then complete a total of forty-one credits of upper-division courses: 32 nursing credits and 9 elective credits with a Nursing (NURS) prefix, Integrative Health Studies (IHS) prefix, or other approved upper division course(s).

GENERAL EDUCATION (43)

Area I. Communications (9 cr)
- ENG 111 English Composition I (3)
- SPCH 130 Public Speaking (3)

Choose one of the following courses:
- ENG 112 English Composition II (3)
- ENG 116 Technical Writing (3)

Area II. Mathematics (3 cr)
- MATH 145 Introduction to Probability & Statistics (3)

Area III. Laboratory Science (12 cr)
- BIO 210 Microbiology (3)
- BIOL 210L Microbiology Lab (1)
- BIOL 237 Human Anatomy & Physiology I (3)
- BIOL 237L Human Anatomy & Physiology I Lab (1)
- BIOL 238 Human Anatomy & Physiology II (3)
- BIOL 238L Human Anatomy & Physiology II Lab (1)

Area IV. Social/Behavioral Sciences (6-9 cr)
- PSY 105 General Psychology (3)
- PSY 290 Developmental Psychology (3)

*If you choose to take a third course in this discipline, it must be from a discipline other than PSY. If you choose a third course from this area, you need only complete two (6 cr) of the Humanities and Fine Arts courses.*
- ANTH 101/L Physical Anthropology with Lab (4)
- ANTH 102 Introduction to Social/Cultural Anthropology(3)
- ANTH 110 Indian Cultures of the Southwest (3)
ANTH 207 Cultures of New Mexico (3)
ECON 200 Macroeconomics (3)
ECON 201 Microeconomics (3)
GEOG 111 World Geography (3)
HSS 311 Readings in the Social Sciences (4)
HSS 414 Humanity and Creativity* (4)
HSS 421 History, Literature, Art, and Philosophy
PSCI 110 The Political World
PSCI 120 Contemporary Political Issues
PSCI 200 American Politics
PSCI 210 State and Local Government
PSCI 212 The American Presidency
PSY 105 General Psychology (3)
PSY 210 Theories of Personality (3)
PSY 229 Adolescent Psychology (3)
PSY 230 Psychology of Adjustment (3)
PSY 232 Abnormal Behavior (3)
PSY 270 Social Psychology (3)
PSY 290 Developmental Psychology (3)
SOC 101 Introduction to Sociology (3)
SOC 213 Deviant Behavior (3)
SOC 216 Ethnic and Intercultural Relations (3)
SOC 220 Social Problems (3)
SOC 225 Marriage and the Family (3)

Plus, topic courses with student advisor’s approval

**Area V. Humanities and Fine Arts (6-9 cr)**

- HUM 100 FYE: History and Culture of Northern New Mexico (3)
- Elective (3-6)

You must select courses from at least two different discipline areas from the following:

- ART 105 Introduction to Art
- ART 107 History of Art I
- ART 208 History of NM Art & Arch. I
- ART 211 History of Art II
- DANC 240 Dance Appreciation
- ENG 270 Children’s Literature
- ENG 262 Literature of the Southwest
- ENG 265 Native American Literature I
- ENG 266 Native American Literature II
- ENG 280 Readings in Literature
- ENG 290 Study of Literature
- ENG 294 Mythology
- HIST 101 Western Civilization I
- HIST 102 Western Civilization II
- HIST 161 History of U.S. to 1887
HIST 162  History of U.S. from 1887  
HIST 200  History of World Religions  
HIST 220  Southwestern Women’s History  
HIST 230  Chicano Experience in the US  
HIST 250  American Indian History  
HIST 260  History of New Mexico  
HUM 101  Humanities I  
HUM 102  Humanities I  
HUM 105  Humanities and the Southwest  
HUM 311  Readings in the Social Sciences  
HUM 414  Humanity and Creativity  
HUM 421  History, Literature, art, and Philosophy  
MUS 103  Music History & Literature I  
MUS 105  Music Appreciation  
MUS 218  Music History & Literature II  
PHIL 110  Introduction to Philosophical Problems  
PHIL 111  History of Philosophy  
PHIL 150  Critical Thinking  
PHIL 220  Ethics  
PIS 200  Introduction to Pueblo Indian Studies  
THE 120  Introduction to Theatre I  
THE 130  History of Theatre

Plus, topic courses with student advisor’s approval.

Area VI. Library Technology (1)  
LT 101  Library Research Skills (1)

Area VII. Foreign Language (3)

REQUIRED LOWER-DIVISION COURSEWORK
Forty-one credits of lower-division courses, to include nursing courses from ADN program (including nutrition), will be applied toward the BSN degree. Six (6) credits of Pathophysiology (can be lower-or upper division courses).

RN TO BSN PROGRAM CURRICULUM
A minimum of 41 credits of upper-division courses must be completed, to include 32 credits of required upper-division nursing courses.

NURS 400  Nursing in Transition (2)  
NURS 401  Integral Nursing Theory (3)  
NURS 410  An Integral Approach to Evidence-Based Practice (3)  
NURS 420  Integral Health Assessment (3)  
NURS 430  Complementary and Alternative Therapies in Nursing (3)  
NURS 440  Health Issues, Policy and Politics in Health Care (3) (WIC)  
NURS 450  Community and Global Health I (3)  
NURS 451  Community and Global Health II (4)
NURS 460  Integral Communication and Teaching (2)
NURS 470  Transformational Leadership in Nursing (4)
NURS 480  Integral Nursing Capstone Course (2)

Electives: 9 credits of upper-division electives with a NURS or IHS prefix, or other approved upper division course(s).

TOTAL CREDITS: 131 (INCLUDES A TOTAL OF 135 CLINICAL HOURS)

Associate of Applied Science
RADIOLOGIC TECHNOLOGY

The Radiologic Technology program at Northern New Mexico College is a two year (22-month) program accredited through the joint Review Committee on Education in Radiologic Technology (JRCERT). Students will prepare to meet the health care needs of the community by functioning as a Radiologic Technologist in hospitals, clinics, doctors’ offices, and in similar health delivery agencies. Upon completion of the program, the student will be awarded an Associate of Applied Science degree and is eligible to take the National Registry examination through the American Registry of Radiologic Technologists (ARRT). Passing the National Registry exam also fulfills the New Mexico requirements for certification.

Students mix classroom time with time spent in the clinical setting working and training with technologists in the field. The didactic (classroom) phase will incorporate the formal education process along with laboratory experience giving the student hands on approach to learning while applying the knowledge currently being learned to practical experience.

Formal application to and acceptance into the program is necessary before you may enroll in any RAD designated courses. Acceptance is granted for the fall semester of each year. Applications for the program may be obtained from the Radiologic Technology Department by calling 505.747.2220 or on the Radiologic Technology web page at http://health.nnmc.edu/page/associate-applied-science-radiologic-technology

Prerequisites:

Completion of the following courses or equivalent with a minimum grade of C prior to starting program. Prerequisites may require placement testing or may have other prerequisites required before taking courses.

ENG 111  English Composition I (3)
BIOL 237/L  Human Anatomy & Physiology I with Lab (4)
BIOL 238/L  Human Anatomy and Physiology II with Lab (4)
HSCI 125  Medical Terminology (2)
MATH 102N  Basic Algebra (4) or MATH 103N (4) or higher level math or higher placement testing.

Must have current CPR through the American Heart Association by the time clinics begin (mid-term Fall semester).
### GENERAL EDUCATION (21 CR)

**Area I. Communications (6)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td></td>
<td>English Composition I (3)</td>
</tr>
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</table>

*Choose one of the following courses:*

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>ENG 112</td>
<td></td>
<td>English Composition II (3)</td>
</tr>
<tr>
<td>ENG 116</td>
<td></td>
<td>Technical Writing (3)</td>
</tr>
<tr>
<td>SPCH 130</td>
<td></td>
<td>Public Speaking (3)</td>
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</table>

**Area II and III. Mathematics/Computers/Laboratory Science (8)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>BIOL 237/L</td>
<td></td>
<td>Anatomy and Physiology I with Lab (4)</td>
</tr>
<tr>
<td>BIOL 238/L</td>
<td></td>
<td>Anatomy and Physiology II with Lab (4)</td>
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**Area IV. Social/Behavioral Sciences (3)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>Elective</td>
<td></td>
<td>(3)</td>
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</table>

**Area V. Humanities (3)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
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</thead>
<tbody>
<tr>
<td>HUM 100</td>
<td></td>
<td>FYE: History and Culture of Northern New Mexico (3)</td>
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</table>

**Area VI. Library Technology (1)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>LT 101</td>
<td></td>
<td>Library Research Skills (1)</td>
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</table>

### PROGRAM REQUIREMENTS (66 CR)

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>HSCI 125</td>
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<td>Medical Terminology (2)</td>
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<tr>
<td>RAD 108</td>
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<td>Basic Patient Care (3)</td>
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<tr>
<td>RAD 135L</td>
<td></td>
<td>Principles of Radiologic Techniques I (3)</td>
</tr>
<tr>
<td>RAD 136L</td>
<td></td>
<td>Principles of Radiologic Techniques II (3)</td>
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<tr>
<td>RAD 140</td>
<td></td>
<td>Radiologic Procedures I (4)</td>
</tr>
<tr>
<td>RAD 140L</td>
<td></td>
<td>Radiologic Procedures I Lab (1)</td>
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<tr>
<td>RAD 141</td>
<td></td>
<td>Radiologic Procedures II (4)</td>
</tr>
<tr>
<td>RAD 141L</td>
<td></td>
<td>Radiologic Procedures II Lab (1)</td>
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<tr>
<td>RAD 142</td>
<td></td>
<td>Radiologic Procedures III (3)</td>
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<tr>
<td>RAD 142L</td>
<td></td>
<td>Radiologic Procedures III Lab (1)</td>
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<tr>
<td>RAD 145L</td>
<td></td>
<td>Clinical Experience I (5)</td>
</tr>
<tr>
<td>RAD 146L</td>
<td></td>
<td>Clinical Experience II (5)</td>
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<tr>
<td>RAD 149L</td>
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<td>Clinical Experience III (5)</td>
</tr>
<tr>
<td>RAD 235</td>
<td></td>
<td>Radiological Physics (3)</td>
</tr>
<tr>
<td>RAD 236</td>
<td></td>
<td>Principles of Radiologic Techniques III (2)</td>
</tr>
<tr>
<td>RAD 240</td>
<td></td>
<td>Radiologic Procedures IV (3)</td>
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<tr>
<td>RAD 245L</td>
<td></td>
<td>Clinical Experience IV (8)</td>
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<tr>
<td>RAD 246L</td>
<td></td>
<td>Clinical Experience V (8)</td>
</tr>
<tr>
<td>RAD 250</td>
<td></td>
<td>Radiologic Pathology (1)</td>
</tr>
<tr>
<td>RAD 251</td>
<td></td>
<td>Registry Review (1)</td>
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</table>

**TOTAL CREDITS: 87**
### REQUIRED SEQUENCE OF COURSES:
For RAD courses only (general education courses may be taken anytime)

#### First Year

<table>
<thead>
<tr>
<th>Fall (19)</th>
<th>Spring (16)</th>
<th>Summer (9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAD 108 (3)</td>
<td>RAD 136L (3)</td>
<td>RAD 149L (5)</td>
</tr>
<tr>
<td>RAD 135L (3)</td>
<td>RAD 141/L (5)</td>
<td>RAD 142/L (4)</td>
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<tr>
<td>RAD 140/L (5)</td>
<td>RAD 146L (5)</td>
<td>Social/Behavioral elective (3)</td>
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<tr>
<td>RAD 145L (5)</td>
<td>Humanities Elective (3)</td>
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#### Second Year

<table>
<thead>
<tr>
<th>Fall (17)</th>
<th>Spring (12)</th>
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<tbody>
<tr>
<td>RAD 235 (3)</td>
<td>RAD 236 (2)</td>
</tr>
<tr>
<td>RAD 240 (3)</td>
<td>RAD 246L (8)</td>
</tr>
<tr>
<td>RAD 245L (8)</td>
<td>RAD 250 (1)</td>
</tr>
<tr>
<td>Communications Elective (3)</td>
<td>RAD 251 (1)</td>
</tr>
</tbody>
</table>
Department of
BUSINESS ADMINISTRATION

The Business Administration (BA) Department at Northern offers baccalaureate, associate and certificate programs which are designed to provide practice-oriented training and business skill development for students who aspire to a successful career in general management, accounting, management of information systems or project management. Currently two Associate Degrees are accredited by the Accreditation Council for Business Schools and Programs (ACBSP)—AAS in Office Administration and AA in Business Administration, while the BBA Program has entered candidacy status with ACBSP.

Other business-related certificate programs include: Administrative Assistant, Bookkeeper, and Entrepreneurship

Lori Baca, MBA
Chairperson 747.2186 lbaca@nnmc.edu

Julian Barela, DBA
Management 747.2183 jbarela@nnmc.edu

Betty Espinoza, AAS
Barbering 747-2472 bettymespinoza@nnmc.edu

Cosmetology

Donal Kinney, MAACCT
Accounting 747.2181 kinney@nnmc.edu

Karen Simpson, MBA
Management 747.2187 ksimpson@nnmc.edu

Elaine Valdez, Cert.
Barbering/Cosmetology 747-2472 elainevaldez@nnmc.edu

BBA ADMISSION REQUIREMENTS

Admission into the BBA program at Northern can occur in one of two ways:

1. As an AABA graduate from Northern’s BA Department or from any ACBSP accredited college as long as the coursework at that college is equivalent to that of Northern’s AABA curriculum. A BA Department advisor can determine the equivalence and approve admission.

2. As an admitted student at Northern who has:
   (a) completed at least 45 credit hours of the coursework from an accredited college including 35 credit hours of the General Education Common Core plus one hour of Health, Physical Education, and Recreation
   (b) attained an overall 2.5 GPA in all college coursework
   (c) completed satisfactorily 15 credit hours in the following courses or their equivalents at other colleges:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 145</td>
<td></td>
<td>Probability and Statistics</td>
</tr>
<tr>
<td>BA 220</td>
<td></td>
<td>Principles of Accounting I</td>
</tr>
<tr>
<td>BA 221</td>
<td></td>
<td>Principles of Accounting II</td>
</tr>
<tr>
<td>ECON 200</td>
<td></td>
<td>Macroeconomics</td>
</tr>
<tr>
<td>ECON 201</td>
<td></td>
<td>Microeconomics</td>
</tr>
</tbody>
</table>
(d) submitted and have had accepted an application for admission form with a letter of intent declaring a BBA major (or major field or course plan) to an academic advisor in Northern’s BA Department.

**BBA GRADUATION REQUIREMENTS**

*To graduate with the degree of BBA, the student must meet the following requirements:*

1. Completion of all admission requirements with a grade of “C” or better and an overall GPA of 2.5 and admission into the BBA program
2. Completion of all required coursework in one of the BBA majors with a grade “C” or better and an overall GPA of 2.5
3. Completion of at least 30 credit hours from the NNMC BA Department, 24 hours of which must be from upper division courses including BA 490 (Capstone)
4. Completion of 129 credits

---

**Associate of Arts**

**BUSINESS ADMINISTRATION**

The Associate of Arts Degree in Business Administration is an ACBSP accredited terminal degree for those graduates who intend to enter the workplace with a sound fundamental knowledge of economics, accounting, management, business technology and marketing. It is designed for students who intend to pursue a business career at the technical level. The AABA is a transfer degree program which can lead to a baccalaureate with two additional years of full-time study in the BA Department at NNMC.

**GENERAL EDUCATION (36 CR)**

**Area I. Communications (9 cr)**

**Area II. Mathematics (3 cr)**

**Area III. Laboratory Sciences (8 cr)**

**Area IV. Social/Behavioral Sciences (6-9 cr)**

**Area V. Humanities and Fine Arts (6-9 cr)**

- HUM 100 FYE: History and Culture of Northern New Mexico (3)

**Area VI. Library Technology (1 cr)**

- LT 101 Library Research Skills (1)

**BUSINESS CORE (27 CR)**

- MATH 145 Probability and Statistics (3)
- BA 240 Principles of Management (3)
- BA 221 Accounting Principles I (3)
- BA 222 Accounting Principles II (3)
- BA 261 Business Technology (3)
- BA 251 Principles of Marketing (3)
ECON 200  Macroeconomics (3)
ECON 201  Microeconomics (3)
Elective  Approved by Advisor (3)

TOTAL CREDITS: 63

Bachelor of
BUSINESS ADMINISTRATION (BBA)

The BBA degree is awarded to those students who satisfactorily complete all course work in one of four major fields of study—Management, Accounting, Management Information Systems, and Project Management. It is designed for students who intend to pursue a business career at the professional level.

ACCOUNTING MAJOR

Coursework in this major is designed to prepare students for employment opportunities that exist in public accounting practice, business, government, and not for profit organizations. Course requirements include:

GENERAL EDUCATION (39 CR)

Area I. Communications (9 cr)
Area II. Mathematics (3 cr)
Area III. Laboratory Sciences (8 cr)
Area IV. Social/Behavioral Sciences (6-9 cr)
Area V. Humanities and Fine Arts (6-9 cr)

Area VI. Library Technology (1 cr)

Area VII. Foreign Language (3 cr)

BUSINESS CORE (27 CR)

MATH 145  Probability and Statistics (3)
BA 240  Principles of Management (3)
BA 221  Accounting Principles I (3)
BA 222  Accounting Principles II (3)
BA 261  Business Technology (3)
BA 251  Principles of Marketing (3)
ECON 200  Macroeconomics (3)
ECON 201  Microeconomics (3)
Elective  Approved by Advisor (3)
Common Degree Requirements (27 cr)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 300</td>
<td>Business Law</td>
<td>(3)</td>
</tr>
<tr>
<td>BA 310</td>
<td>Principles of Finance</td>
<td>(3)</td>
</tr>
<tr>
<td>BA 313</td>
<td>Organizational Behavior</td>
<td>(3) (WIC)</td>
</tr>
<tr>
<td>BA 330</td>
<td>Principles of Project Management</td>
<td>(3)</td>
</tr>
<tr>
<td>BA 411</td>
<td>Managerial Accounting</td>
<td>(3)</td>
</tr>
<tr>
<td>BA 461</td>
<td>Ethical and Legal Issues in Business</td>
<td>(3)</td>
</tr>
<tr>
<td>BA 462</td>
<td>International Business &amp; Management</td>
<td>(3)</td>
</tr>
<tr>
<td>BA 490</td>
<td>Business Administration Capstone</td>
<td>(6)</td>
</tr>
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</table>

Accounting Courses (24 cr)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BA 304</td>
<td>Intermediate Accounting I</td>
<td>(3)</td>
</tr>
<tr>
<td>BA 305</td>
<td>Intermediate Accounting II</td>
<td>(3)</td>
</tr>
<tr>
<td>BA 306</td>
<td>Intermediate Accounting III</td>
<td>(3)</td>
</tr>
<tr>
<td>BA 324</td>
<td>Federal Tax Accounting I</td>
<td>(3)</td>
</tr>
<tr>
<td>BA 352</td>
<td>Accounting Information Systems</td>
<td>(3)</td>
</tr>
<tr>
<td>BA 405</td>
<td>Accounting for Not-For-Profit Organizations</td>
<td>(3)</td>
</tr>
<tr>
<td>BA 445</td>
<td>Cost Accounting</td>
<td>(3)</td>
</tr>
<tr>
<td>BA 446</td>
<td>Audit Theory and Practice</td>
<td>(3)</td>
</tr>
</tbody>
</table>

Electives (12 cr)
Electives may be chosen from any NNMC College or department subject to advisor consultation. A minimum of two must be at 300 level or above.

TOTAL CREDITS: 129

MANAGEMENT MAJOR

Coursework in this major is focused on more advanced management training in core business processes such as finance, human resources (HR) management, marketing, MIS and corporate strategy. Course requirements include:

GENERAL EDUCATION (39 CR)

Area I. Communications (9 cr)
Area II. Mathematics (3 cr)
Area III. Laboratory Sciences (8 cr)
Area IV. Social/Behavioral Sciences (6-9 cr)
Area V. Humanities and Fine Arts (6-9 cr)
  HUM 100  FYE: History and Culture of Northern New Mexico (3)
Area VI. Library Technology (1 cr)
  LT 101  Library Research Skills (1)
Area VII. Foreign Language (3 cr)
BUSINESS CORE (27 CR)

MATH 145 Probability and Statistics (3)
BA 240 Principles of Management (3)
BA 221 Accounting Principles I (3)
BA 222 Accounting Principles II (3)
BA 261 Business Technology (3)
BA 251 Principles of Marketing (3)
ECON 200 Macroeconomics (3)
ECON 201 Microeconomics (3)
Elective Approved by Advisor (3)

Common Degree Requirements (27 cr)

BA 300 Business Law (3)
BA 310 Principles of Finance (3)
BA 313 Organizational Behavior (3) (WIC)
BA 330 Principles of Project Management (3)
BA 411 Managerial Accounting (3)
BA 461 Ethical and Legal Issues in Business (3)
BA 462 International Business & Management (3)
BA 490 Business Administration Capstone (6)

Management Courses (18 cr)

BA 353 Operations Management (3)
BA 354 E-Commerce (3) or BA 350 Entrepreneurship
BA 360 Human Resource Management (3)
BA 408 Corporate Finance (3)
BA 432 Strategic Management (3)
BA 456 Marketing Management (3)
Electives (18 cr)
Electives may be chosen from any NNMC College or department, subject to advisor consultation. A minimum of two must be at 300 level or above.

TOTAL CREDITS: 129

MANAGEMENT INFORMATION SYSTEMS MAJOR

Effective Fall 2013, this major will no longer be offered.

This major offers broad-based training in the practice, policy, management, applications and development of business information systems and technology. It combines a few required courses and some inter-disciplinary electives with flexibility, so that students may select topics that best fit their technology interests. Course requirements include:

GENERAL EDUCATION (39 CR)

Area I. Communications (9 cr)
Area II. Mathematics (3 cr)

Area III. Laboratory Sciences (8 cr)

Area IV. Social/Behavioral Sciences (6-9 cr)

Area V. Humanities and Fine Arts (6-9 cr)

Area VI. Library Technology (1 cr)

Area VII. Foreign Language (3 cr)

BUSINESS CORE (27 CR)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 145</td>
<td>Probability and Statistics</td>
<td>3</td>
</tr>
<tr>
<td>BA 240</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>BA 221</td>
<td>Accounting Principles I</td>
<td>3</td>
</tr>
<tr>
<td>BA 222</td>
<td>Accounting Principles II</td>
<td>3</td>
</tr>
<tr>
<td>BA 261</td>
<td>Business Technology</td>
<td>3</td>
</tr>
<tr>
<td>BA 251</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>ECON 200</td>
<td>Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 201</td>
<td>Microeconomics</td>
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<tr>
<td></td>
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</table>

Common Degree Requirements (24 cr)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 300</td>
<td>Business Law</td>
<td>3</td>
</tr>
<tr>
<td>BA 310</td>
<td>Principles of Finance</td>
<td>3</td>
</tr>
<tr>
<td>BA 313</td>
<td>Organizational Behavior (WIC)</td>
<td>3</td>
</tr>
<tr>
<td>BA 330</td>
<td>Principles of Project Management</td>
<td>3</td>
</tr>
<tr>
<td>BA 411</td>
<td>Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BA 461</td>
<td>Ethical and Legal Issues in Business</td>
<td>3</td>
</tr>
<tr>
<td>BA 462</td>
<td>International Business &amp; Management</td>
<td>3</td>
</tr>
<tr>
<td>BA 490</td>
<td>Business Administration Capstone</td>
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</table>

MIS Courses (12 cr)

<table>
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<tr>
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<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 354</td>
<td>E-Commerce (or BA 350 Entrepreneurship)</td>
<td>3</td>
</tr>
<tr>
<td>BA 361</td>
<td>Advanced MIS</td>
<td>3</td>
</tr>
<tr>
<td>IT 350</td>
<td>Database Management</td>
<td>3</td>
</tr>
<tr>
<td>IT 410</td>
<td>Information Assurance/Security</td>
<td>3</td>
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</tbody>
</table>

Electives (24 cr)

Electives may be chosen from any NNMC College or dept., subject to advisor consultation. A minimum of four (12 cr) must be at 300 level or above, from the following list:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 463</td>
<td>MIS Policy Management</td>
<td>3</td>
</tr>
<tr>
<td>BA 464</td>
<td>Business Continuity Planning/disaster Planning</td>
<td>3</td>
</tr>
<tr>
<td>BA 465</td>
<td>Special topics in MIS</td>
<td>1-6</td>
</tr>
<tr>
<td>EECE 132</td>
<td>Computer Networks I</td>
<td>3</td>
</tr>
</tbody>
</table>
EECE 152L Computer Programming I (4)
EECE 330 Computer Networks II (3)
ENGR 470 Engineering Management (3)
ENGR 474 Engineering Project Management (3)
ENGR 476 Marketing Engineering Products (3)
IT 210 IT Systems (3)
IT 250 Introduction to Databases (3)

TOTAL CREDITS: 129

PROJECT MANAGEMENT MAJOR

This major is designed to meet the professional development needs of individual program and project responsibilities. Project management is applicable in a wide range of business activities as it involves the application of knowledge, skills, tools and techniques shaped by the specifications and requirements of a particular project.

GENERAL EDUCATION (39 CR)

Area I. Communications (9 cr)
Area II. Mathematics (3 cr)
Area III. Laboratory Sciences (8 cr)
Area IV. Social/Behavioral Sciences (6-9 cr)
Area V. Humanities and Fine Arts (6-9 cr)
    HUM 100 FYE: History and Culture of Northern New Mexico (3)
Area VI. Library Technology (1 cr)
    LT 101 Library Research Skills (1)
Area VII. Foreign Language (3 cr)

BUSINESS CORE (27 CR)

MATH 145 Probability and Statistics (3)
BA 240 Principles of Management (3)
BA 221 Accounting Principles I (3)
BA 222 Accounting Principles II (3)
BA 261 Business Technology (3)
BA 251 Principles of Marketing (3)
ECON 200 Macroeconomics (3)
ECON 201 Microeconomics (3)
Elective: Approved by Advisor (3)
Common Degree Requirements (27 cr)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 300</td>
<td>Business Law</td>
<td>3</td>
</tr>
<tr>
<td>BA 310</td>
<td>Principles of Finance</td>
<td>3</td>
</tr>
<tr>
<td>BA 313</td>
<td>Organizational Behavior</td>
<td>3 (WIC)</td>
</tr>
<tr>
<td>BA 330</td>
<td>Principles of Project Management</td>
<td>3</td>
</tr>
<tr>
<td>BA 411</td>
<td>Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BA 461</td>
<td>Ethical and Legal Issues in Business</td>
<td>3</td>
</tr>
<tr>
<td>BA 462</td>
<td>International Business &amp; Management</td>
<td>3</td>
</tr>
<tr>
<td>BA 490</td>
<td>Business Administration Capstone</td>
<td>6</td>
</tr>
</tbody>
</table>

Project Management Courses (18 cr)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 331</td>
<td>Project Management Planning Process</td>
<td>3</td>
</tr>
<tr>
<td>BA 332</td>
<td>Project Management Systems: Baseline Development</td>
<td>3</td>
</tr>
<tr>
<td>BA 333</td>
<td>Project Planning and Execution</td>
<td>3</td>
</tr>
<tr>
<td>BA 432</td>
<td>Strategic Management</td>
<td>3</td>
</tr>
<tr>
<td>BA 434</td>
<td>Project Execution and Control: Strategic Management and Analysis</td>
<td>3</td>
</tr>
<tr>
<td>BA 436</td>
<td>Project Execution and Control: Systems Support</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives (18 cr)

Electives may be chosen from any NNMC College or Department, subject to advisor consultation. A minimum of two must be at 300 level or above.

Certificate

ADMINISTRATIVE ASSISTANT

This program provides you with the basic to advanced skills you need to work in the Windows environment. Our practical hands-on approach will provide you with the software skill set required for an administrative position.

GENERAL EDUCATION (7 CR)

Communications (4 cr)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 109N</td>
<td>Basic Composition II or higher-level course</td>
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Mathematics (3 cr)

<table>
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<tr>
<th>Course</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>OA 117</td>
<td>Business Math</td>
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PROGRAM REQUIREMENTS (27 CR)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BCIS 200</td>
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</tr>
<tr>
<td>BCIS 225</td>
<td>Excel</td>
<td>3</td>
</tr>
<tr>
<td>BA 250</td>
<td>Business Communications</td>
<td>3</td>
</tr>
<tr>
<td>OA 118</td>
<td>Professional Development</td>
<td>3</td>
</tr>
<tr>
<td>OA 236</td>
<td>Administrative Procedures</td>
<td>3</td>
</tr>
<tr>
<td>BCIS 249</td>
<td>Microsoft Word</td>
<td>3</td>
</tr>
<tr>
<td>BCIS 265</td>
<td>Access</td>
<td>3</td>
</tr>
</tbody>
</table>
Certificate
BOOKKEEPER

This program will prepare you for entry-level positions as a Bookkeeper. Typical work settings might include either working alone for a small business or working under the direction of a full-charge bookkeeper or accountant in a larger business or organization.

GENERAL EDUCATION (7 CR)

Communications (4 cr)

   ENG 109N Basic Composition II or higher-level course (4)

Mathematics (3 cr)

   OA 117 Business Math (3)

Health, Physical Education & Recreation (1 cr)

   Elective (1)

PROGRAM REQUIREMENTS (15 CR)

   BCIS 200 Business Computer Applications (3)
   BCIS 225 Excel (3)
   BA 221 Accounting Principles I (3)
   BA 236 Computerized Accounting (3)
   BA 250 Business Communications (3)

TOTAL CREDITS: 23

Certificate
ENTREPRENEURSHIP

This program will prepare you to start your own entrepreneurial ventures, to work on management teams for entrepreneurial ventures, or to apply entrepreneurial skills to an existing business.

GENERAL EDUCATION (6 CR)

Communications (3 cr)

   ENG 111 English Composition I (3)

Mathematics (3 cr)

   OA 117 Business Math (3)
PROGRAM REQUIREMENTS (18 CR)

BA 128 Introduction to Entrepreneurship (3)
BA 221 Accounting Principles I (3)
BA 214 Small Business Management (3)
BA 241 Integrated Management (3)
BA 254 Introduction to E-commerce (3)
BA 236 Computerized Accounting (3)

TOTAL CREDITS: 24

Certificate
HOSPITALITY, TOURISM, and RESTAURANT MANAGEMENT

This is a professional development program organized around the particular sectors of the hospitality industry: tourism, hospitality, and casino management in which you will improve your skills and knowledge for entry-level positions.

GENERAL EDUCATION (7 CR)

Communications (4 cr)

ENG 109N Basic Composition II or higher-level course (4)

Mathematics (3 cr)

OA 117 Business Math (3)

PROGRAM REQUIREMENTS (18 CR)

HTRM 130 Introduction to Management in the Hospitality Industry (3)
HTRM 133 Casino Management (3)
HTRM 135 Hotel Management (3)
HTRM 140 Food and Beverage Production Analysis (3)
HTRM 142 Resort and Casino Marketing and Merchandising (3)
HTRM 210 Internship (3)

TOTAL CREDITS: 25

Associate of Applied Science
OFFICE ADMINISTRATION

This program will provide you with the course work necessary for employment above the entry level in secretarial fields in the private and governmental sectors.

GENERAL EDUCATION (20 CR)

Area I. Communications (6 cr)

ENG 111 English Composition I (3)
Prerequisite: ENG 109N (3) or adequate score on the Course Placement Evaluation

SPCH 130 Public Speaking (3)

Prerequisite: ENG 109N (3) or adequate score on the Course Placement Evaluation

Areas II and III. Mathematics/Computers/Laboratory Science (6 cr)

BCIS 200 Business Computer Applications (3)
OA 117 Business Math (3)

Area IV. Social/Behavioral Sciences (3 cr)

Elective (3) Choose from Anthropology, Economics, Geography, Political Science, Psychology, or Sociology.

Area V. Humanities and Fine Arts (3 cr)

HUM 100 FYE: History and Culture of Northern New Mexico (3)

Prerequisite: ENG 108N (3) or adequate score on the Course Placement Evaluation

Area VI. Library Technology (1 cr)

LT 101 Library Research Skills (1)

HPER (1 cr) Elective (1)

PROGRAM REQUIREMENTS (42 CR)

Office Automation (18 cr)

OA 115 Record/Information Management (3)
OA 118 Professional Development (3)
OA 135 Introduction to Accounting (3)
OA 236 Administrative Procedures (3)
Prerequisite: ENG 111 (3), BCIS 200 (3)
OA 261 Desktop Publishing: MS Publisher (3)
Prerequisite: BCIS 249
OA 266 Microsoft Office Specialist Training (3)
Prerequisites: BCIS 249, BCIS 265, BCIS 225, BCIS 226

Business Computing Information Systems (15 cr)

BCIS 249 Microsoft Word (3)
BCIS 265 Microsoft Access (3)
BCIS 225 Excel (3)
BCIS 226 PowerPoint (3)

Business Administration (6 cr)

BA 240 Principles of Management (3)
Prerequisite: ENG 109N (3)
BA 250 Business Communications (3)
Prerequisite: ENG 111 (3)
BA 261 Business Technologies (3)
Elective (3)

Business Administration or Office Administration course (3 cr)

TOTAL CREDITS: 62
BARBERING

The Barbering/Cosmetology program accepts students in the Fall and Spring terms only. Requirements include:

1. Final admission standing in the College as a degree-seeking student.

2. Applicants must achieve a Course Placement Score placing them into ENG 109N or show evidence that they have completed ENG 108N and have completed OA 117 Business Math.

3. After meeting criteria 1 and 2, arrange for an appointment with Cosmetology/Barbering for an admission interview prior to being accepted into the program. Call 505.747.2473 for this appointment.

4. Complete the registration process required by the New Mexico State Board of Barbers and Cosmetologists upon acceptance into the program.

The program provides cosmetologists/barbers with the courses required by the New Mexico Board of Barbers and Cosmetology for licensure (63 credit hours, 1600 clock hours for cosmetologists and 48 credit hours, 1200 clock hours for barbers). It also expands these skills with the addition of general education courses. These are not transfer programs.

Associate of Applied Science
BARBERING

This program provides you with the courses required by the New Mexico Board of Barbers and Cosmetology for licensure in this area (48 credit hours, 1200 clock hours) and expands those skills with the addition of general education courses. This is not a transfer program.

GENERAL EDUCATION (23 CR)

Area I. Communications (6 cr)

ENG 111 English Composition I (3)

Prerequisite: ENG 109N (3) or adequate score on the Course Placement Evaluation

SPCH 130 Public Speaking (3)

Prerequisite: ENG 109N (3) or adequate score on the Course Placement Evaluation

Areas II and III. Mathematics/Computers/Laboratory Sciences (6 cr)

BCIS 200 Business Computer Applications (3 cr)

OA 117 Business Math (3)

Area IV. Social/Behavioral Sciences (3 cr)

Elective (3) Choose from Anthropology, Economics, Geography, Political Science, Psychology, or Sociology.

Prerequisite: ENG 109N (3) or adequate score on the Course Placement Evaluation

Area V. Humanities and Fine Arts (6 cr)

HUM 100 FYE: History and Culture of Northern New Mexico (3)

Prerequisites: ENG 108N (3) or adequate score on the Course Placement Evaluation
PHIL 220 Ethics (3)

Prerequisite: ENG 109N (3) or adequate score on the Course Placement Evaluation

Area VI. Library Technology (1 cr)

LT 101 Library Research Skills (1)

HPER (1 cr)

Elective (1)

PROGRAM REQUIREMENTS (48 CR)

Note: The prerequisite for any Barbering course is completion of ENG 108N or adequate scores on the Course Placement Evaluation

BARB 110 Barbering I (17)

Prerequisite: BARB 110

BARB 120 Barbering II (16)

Prerequisite: BARB 110

BARB 210 Barbering III (15)

Prerequisite: BARB 120

TOTAL CREDITS: 71

Certificate
BARBERING

This program provides you with the courses required by the New Mexico Board of Barbers and Cosmetology for licensure in this area (48 credit hours, 1200 clock hours). The program also expands those skills with the addition of General Education courses.

GENERAL EDUCATION (7 CR)

Communications (4)

ENG 109N Basic Composition II (4) or a higher level course

Mathematics (3)

OA 117 Business Math (3)

PROGRAM REQUIREMENTS (48 CR)

BARB 110 Barbering I (17)

BARB 120 Barbering II (16)

BARB 210 Barbering III (15)

TOTAL CREDITS: 55
COSMETOLOGY

The Cosmetology/Barbering program accepts students in the Fall and Spring terms only. **Requirements include:**

1. Final admission standing in the College as a degree-seeking student
2. Applicants must achieve a Course Placement Score placing them into ENG 109N or show evidence that they have completed ENG 108N, and have completed OA 117 Business Math.
3. After meeting criteria 1 and 2, arrange for an appointment with Cosmetology/Barbering for an admission interview prior to being accepted into the program. Call 505.747.2473 for this appointment.
4. Completion of the registration process required by the New Mexico State Board of Barbers and Cosmetologists upon acceptance into the program.

The program provides cosmetologists/barbers with the courses required by the New Mexico Board of Barbers and Cosmetology for licensure (63 credit hours, 1600 clock hours for cosmetologists and 48 credit hours, 1200 clock hours for barbers). It also expands these skills with the addition of general education courses. These are not transfer programs.

**Associate of Applied Science**

**COSMETOLOGY**

The program provides cosmetologists/barbers you with the courses required by the New Mexico Board of Barbers and Cosmetology for licensure (63 credit hours, 1600 clock hours for cosmetologists and 48 credit hours, 1200 clock hours for barbers). It also expands these skills with the addition of General Education courses. These are not transfer programs.

**GENERAL EDUCATION (23 CR)**

**Area 1. Communications (6 cr)**

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<thead>
<tr>
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<tr>
<td>ENG 111</td>
<td>English Composition I</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 130</td>
<td>Public Speaking</td>
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**Area II and III. Mathematics/Computers/Laboratory Science (6)**

<table>
<thead>
<tr>
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<th>Credits</th>
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<tr>
<td>BCIS 200</td>
<td>Business Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td>OA 117</td>
<td>Business Math</td>
<td>3 cr</td>
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</table>

**Area IV. Social/Behavioral Sciences (3 cr)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Elective</td>
<td>Choose from Anthropology, Economics, Geography, Political Science, Psychology, or Sociology.</td>
<td>3</td>
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</table>

**Area V. Humanities and Fine Arts (6 cr)**

<table>
<thead>
<tr>
<th>Course</th>
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<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>HUM 100</td>
<td>FYE: History and Culture of Northern New Mexico</td>
<td>3</td>
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</tbody>
</table>
PHIL 220 Ethics (3)

Prerequisite: ENG 109N (3) or adequate score on the Course Placement Evaluation

Area VI. Library Technology (1 cr)

HT 101 Library Research Skills (1)

HPER (1 cr) Elective (1)

PROGRAM REQUIREMENTS (63 CR)

<table>
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<tr>
<th>Course</th>
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<th>Credits</th>
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<td>COSM 110</td>
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<td>COSM 120</td>
<td>Cosmetology II (16)</td>
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<tr>
<td>COSM 210</td>
<td>Cosmetology III (15)</td>
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</tr>
<tr>
<td>COSM 220</td>
<td>Cosmetology IV (15)</td>
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</table>

TOTAL CREDITS: 86

Certificate

COSMETOLOGY

This program provides you with the courses required by the New Mexico Board of Barbers and Cosmetology for licensure in this area (63 credit hours, 1600 clock hours) and expands those skills with the addition of General Education courses.

GENERAL EDUCATION (7 CR)

Communications (4)

<table>
<thead>
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<tbody>
<tr>
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Mathematics (3)

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<tr>
<td>OA 117</td>
<td>Business Math (3)</td>
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PROGRAM REQUIREMENTS (63 CR)

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<td>COSM 210</td>
<td>Cosmetology III (15)</td>
<td></td>
</tr>
<tr>
<td>COSM 220</td>
<td>Cosmetology IV (15)</td>
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</tr>
</tbody>
</table>

TOTAL CREDITS: 70
Department of ENGINEERING

The Department of Engineering offers a Post Baccalaureate Certificate in Information Engineering Technology, Bachelor of Engineering (BEng) degrees in Information Engineering Technology and Mechanical Engineering (Solar Energy Concentration) as well as Associate of Engineering (AE) degrees in Information Technology, Software Engineering, and Pre-Engineering.

Ivan Lopez, PhD  Chair  747.2264  ilopez@nnmc.edu
Ashis Nandy, PhD  ME  747.2249  ashis@nnmc.edu
Jorge Crichigno, PhD  IT  747.5929  jcrichigno@nnmc.edu
Alfredo Perez, PhD  IT  747.5424  ajperez@nnmc.edu
Raul Peralta, MS  IT  747.5497  rperalta@nnmc.edu

Admission Requirements for the Associates of Engineering Programs
All students admitted to NNMC will be admitted to the Associate Degree of Engineering Program if they declare the degree on the Degree Declaration form.

Admission Requirements for the Bachelor of Engineering Programs
All students that attempt admission for any of the Bachelor of Engineering Programs must fulfill the following requirements:

1. Fill out the degree declaration form at the registrar office.

A) Bachelor of Engineering Information Engineering Technology:
Completion of the following courses with an average of 2.5, and a minimum grade of C for every course:
- CS 201  Math Foundation of Computer Science
- MATH 162  Calculus I
- MATH 163  Calculus II
- EECE 152  Computer Programming
- EECE 231  Intermediate Programming
- EECE 132  Computer Networks I
- IT 250  Introduction to Databases

B) Bachelor of Engineering Mechanical Engineering (Solar Energy Concentration)
Completion of the following courses with an average of 2.5, and a minimum grade of C for every course:
- MATH 162  Calculus I
- MATH 163  Calculus II
- PHYS 215  Engineering Physics I/Lab
- PHYS 216  Engineering Physics II/Lab
- ME 160L  General Engineering Design
- ME 202  Statics
2. When all the above requirements have been fulfilled, the student must receive a letter of admission to the bachelor program from the Department of Engineering Chair.

Note: If a student does not fulfill the admission requirements for the Bachelor of Engineering Programs, the student will still be eligible to finish the degree requirements for an Associate of Engineering Degree.

Admission Requirements for the Post Baccalaureate Engineering Certificate

All students that attempt admission for any of the Post Baccalaureate Engineering Programs must fulfill the following minimum requirements:

1. Have earned a bachelor's degree in the engineering field
2. Complete the online admission application form
3. Have earned a minimum 3.0 GPA in the bachelor degree
4. Submit three letters of recommendation from faculty or previous/current employers

Although not currently required, we encourage students to submit Graduate Record Examination (GRE) scores along with the application.

Note: Admission is competitive and completion of the above requirements does not suffice for admission to the program. The Department of Engineering is ultimately responsible for granting admission to a Post Baccalaureate Certificate.

Advisement Requirement for All Engineering Students

All declared engineering students are required to receive mandatory advisement prior to registration every semester. A mandatory advisement hold will be lifted only after a student has met with his/her advisor. New students will be advised by the Department chairperson.

Students are advised not to attempt upper division coursework (300 and 400-level classes) unless they have earned a GPA of 2.50 or better in all IT, CS, and CT coursework taken at the 100 and 200-level.

Graduation Requirements for Associate of Engineering students

The Department of Engineering requires that all the students enrolled in an Associate of Engineering degree fulfill all of the following requirements before they can graduate:

1. Be admitted to the NNMC Associate of Engineering Program
2. Fulfill all NNMC graduation requirements
3. An overall GPA of at least 2.50 in all coursework

Graduation Requirements for Baccalaureate students

The Department of Engineering requires that all Baccalaureate students fulfill the following requirements for graduation:

1. Be admitted to the NNMC Engineering Baccalaureate Program
2. Fulfill all NNMC graduation requirements
3. An overall GPA of at least 2.50 in all coursework
4. Perform a minimum of 100 hours of community/college service
   Mentoring, tutoring, internships and research projects are examples of available opportunities for students to fulfill this requirement. Before you start working on any activity towards this requirement you need approval from your academic advisor. You can discuss other opportunities with your academic advisor and/or the department chair.

Graduation Requirements for Post Baccalaureate students
The Department of Engineering requires that all Post Baccalaureate students fulfill the following requirements for graduation:
1. Fulfill all NNMC graduation requirements
2. A minimum overall GPA of 3.0 for graduation and no more than one C+ or below grade in the coursework.

Associate in Engineering in INFORMATION ENGINEERING TECHNOLOGY

The curriculum for the Associate in Engineering (AEng) in Information Technology is designed for those engineering students who intend to launch a career in the design, installation, maintenance, and repair of computer networks used for critical data entry, transfer, retrieval, and management. Coursework in the program is practice-oriented and prepares students to work in a variety of computer-intensive environments, such as technical organizations, small or large businesses, product design or manufacturing companies, and data-directed services. The breadth of training in hardware, software, troubleshooting equipment, and other computer tools will enable the graduate to work in a variety of roles in such occupations as network designer, network support and administrator, project manager, data applications or computer communications engineer, test and integration manager or technologist in business applications. The graduate of this curriculum could be a computer network specialist, and will be broadly versed in mathematics, physics, computer science, and business fundamentals.

The program objectives are the following:
1. Graduates will be situated in growing entry-level careers involving support of Information Technology Systems.
2. Graduates will have demonstrated involvement in high-level technical roles.

Completion of this program should result in the following student outcomes:
1. An ability to apply knowledge of mathematics, science, and engineering
2. An ability to function on multidisciplinary teams
3. An ability to communicate effectively
4. Broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
5. A knowledge of contemporary issues
6. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice
GENERAL EDUCATION (35 CR)

Area I. Communications (9)
   ENG  111  English Composition I (3)
   ENG  116  Technical Writing (3)
   SPCH 130  Public Speaking (3)

Area II. Mathematics (11)
   MATH 145  Introduction to Probability & Statistics (3)
   MATH 162  Calculus I (4)
   MATH 163  Calculus II (4)

Area III. Laboratory Sciences (8)
   PHYS 215/L  Engineering Physics I with lab (4)
   PHYS 216/L  Engineering Physics II with lab (4)

Area IV. Social/Behavioral Sciences (3)
   ECON 201  Microeconomics (3)

Area V. Humanities and Fine Arts (3)
   HUM 100  FYE: History and Culture of Northern New Mexico (3)

Area VI. Library Technology, Library Research Skills (1 cr)
   LT 101  Library Research Skills (1)

PROGRAM REQUIREMENTS (30 CR)

Business (3)
   BA  Lower-Division Elective (3)

Electrical, Electronic, and Computer Engineering (18)
   EECE 105L  Microcomputer Systems (4)
   EECE 132  Computer Networks I (3)
   EECE 152L  Computer Programming I (4)
   EECE 231  Intermediate Programming I (3)
   EECE 238/L  Computer Logic Design (4)

Information Technology (6)
   IT 210  IT Systems (3)
   IT 250  Introduction to Databases (3)

Support Technologies (3)
   ENGR 110  Introduction to Engineering (3)

TOTAL CREDITS: 65

SUGGESTED SEQUENCE OF COURSES

First Semester (17 cr)
   LT 101  Library Research Skills (1)
HUM 100  First Year Exp: History and Culture of Northern New Mexico (3)
ENG 111  English Composition I (3)
EECE 152/L Computer Programming I (4)
EECE 132  Computer Networks I (3)
ENGR 110  Introduction to Engineering (3)

Second Semester (18 cr)
MATH 162  Calculus I (4)
IT  210  IT Systems (3)
EECE 238/L Computer Logic Design (4)
EECE 231  Intermediate Programming (3)
EECE 105/L Microcomputer Systems (4)

Third Semester (17 cr)
ENG 116  Technical Writing (3)
MATH 162  Calculus II (4)
PHYS 215/L Engineering Physics I with Lab (4)
ECON 201  Microeconomics (3)
IT 250  Intro. to Databases (3)

Fourth Semester (13 cr)
PHYS 216/L Engineering Physics II with Lab (4)
BA  Elective (3)
MATH 145  Introduction to Probability and Statistics (3)
SPCH 130  Public Speaking (3)

Associate in Engineering
PRE-ENGINEERING

This program will prepare you for a bachelor’s degree in engineering. You will obtain both a general background in mathematics and the physical sciences, and an introduction to the concepts and methods of engineering. This program is not a professional degree and does not prepare you for specific job opportunities. It does, however, provide a broad educational foundation on which to build a career through additional education or work experience.

The program objectives are the following:
1. Graduates will have demonstrated knowledge and skills to pursue an engineering bachelor program.
2. Graduates will have demonstrated involvement in high-level technical roles.

Completion of this program should result in the following student outcomes:
1. An ability to apply knowledge of mathematics, science, and engineering
2. An ability to function on multidisciplinary teams
3. An ability to communicate effectively
4. The broad education necessary for understanding the impact of engineering solutions in a global, economic, environmental, and societal context
5. Knowledge of contemporary issues
6. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

GENERAL EDUCATION (43 CR)

Area I. Communications (9)
  ENG 111  English Composition I (3)
  ENG 116  Technical Writing (3)
  SPCH 130  Public Speaking (3)

Area II. Mathematics (15)
  MATH 145  Introduction to Probability & Statistics (3)
  MATH 162  Calculus I (4)
  MATH 163  Calculus II (4)
  MATH 264  Calculus III (4)

Area III. Laboratory Sciences (12)
  CHEM 121/L  General Chemistry with lab (4)
  PHYS 215/L  Engineering Physics I with lab (4)
  PHYS 216/L  Engineering Physics II with lab (4)

Area IV. Social/Behavioral Sciences (3)
  ECON 201  Microeconomics (3)

Area V. Humanities and Fine Arts (3)
  HUM 100  FYE: History and Culture of Northern New Mexico (3)

Area VI. Library Technology, Library Research Skills (1 cr)
  LT 101  Library Research Skills (1)

PROGRAM REQUIREMENTS (24 CR)

Business (3)
  BA  Lower-Division Elective (3)

Engineering (21)
  ENGR 110  Introduction to Engineering (3)
  ENGR 120  Introductory Mathematics for Engineering Applications (4)
  EECE 152L  Computer Programming I (4)
  EECE 203L  Circuit Analysis I (4)
  ME 160L  General Engineering Design I (3)
  ME 202  Engineering Statics (3)

TOTAL CREDITS: 67
SUGGESTED SEQUENCE OF COURSES

First Semester (15 cr)

<table>
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<tr>
<td>ENGR 120</td>
<td>Introductory Mathematics for Engineering Applications</td>
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<tr>
<td>EECE 152</td>
<td>Computer Programming I</td>
<td>4</td>
</tr>
<tr>
<td>ENGR 110</td>
<td>Introduction to Engineering</td>
<td>3</td>
</tr>
<tr>
<td>LT 101</td>
<td>Library Research Skills</td>
<td>1</td>
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<tr>
<td>HUM 100</td>
<td>FYE: History and Culture of Northern New Mexico</td>
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Second Semester (17 cr)

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<tr>
<th>Course</th>
<th>Title</th>
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</tr>
<tr>
<td>MATH 162</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 215/L</td>
<td>Engineering Physics I with Lab</td>
<td>4</td>
</tr>
<tr>
<td>ME 160L</td>
<td>Gen. Engineering Design I</td>
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</tr>
<tr>
<td>MATH 145</td>
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Third Semester (18 cr)

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<tr>
<td>MATH 163</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 216/L</td>
<td>Engineering Physics II with Lab</td>
<td>4</td>
</tr>
<tr>
<td>ME 202</td>
<td>Engineering Statics</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 130</td>
<td>Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 121/L</td>
<td>General Chemistry I/L</td>
<td>4</td>
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Fourth Semester (17 cr)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MATH 264</td>
<td>Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>ECON 201</td>
<td>Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>EECE 203L</td>
<td>Circuit Analysis I</td>
<td>4</td>
</tr>
<tr>
<td>BA</td>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td>ENG 116</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

Associate in Engineering in
SOFTWARE ENGINEERING

The curriculum in the Associate Degree in Engineering (AEng) in Software Engineering is designed for those who intend to launch a career in the testing, installation, and maintenance of computer software modules and systems. Coursework in the program is hands-on oriented and prepares students to work in a variety of computer-intensive environments that involve engineering support: technical organizations, small or large businesses, manufacturing companies, and data-directed services.

The breadth of training in hardware, software, troubleshooting equipment, and other computer tools will enable the graduate to work in a variety of roles in such occupations as software technician, computer systems technician, data applications or computer technician, or as a test and integration assistant. Graduates of this program will be a software engineering technician versed in mathematics, physics, computer science, software development, and business fundamentals.
The program objectives are the following:
1. Graduates will have demonstrated knowledge and skills to pursue an engineering bachelor program.
2. Graduates will have demonstrated involvement in high-level technical roles.

Completion of this program should result in the following student outcomes:
1. An ability to apply knowledge of mathematics, science, and engineering
2. An ability to function on multidisciplinary teams
3. An ability to communicate effectively
4. Broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
5. A knowledge of contemporary issues
6. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

GENERAL EDUCATION (35 CR)

Area I. Communications (9)
- ENG 111 English Composition I (3)
- ENG 116 Technical Writing (3)
- SPCH 130 Public Speaking (3)

Area II. Mathematics (11)
- MATH 145 Introduction to Probability & Statistics (3)
- MATH 162 Calculus I (4)
- MATH 163 Calculus II (4)

Area III. Laboratory Sciences (8)
- PHYS 215/L Engineering Physics I with lab (4)
- PHYS 216/L Engineering Physics II with Lab (4)

Area IV. Social/Behavioral Sciences (3)
- ECON 201 Microeconomics (3)

Area V. Humanities and Fine Arts (3)
- HUM 100 FYE: History and Culture of Northern New Mexico (3)

Area VI. Library Technology, Library Research Skills (1 cr)
- LT 101 Library Research Skills (1)

PROGRAM REQUIREMENTS (34 CR)

Business (3)
- BA Lower-Division Elective (3)

Computer Science (6)
- CS 201 Mathematical Foundations of Computer Science (3)
- IT 250 Introduction to Databases (3)
Electrical, Electronic, and Computer Engineering (21)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EECE 105L</td>
<td>Microcomputer Systems</td>
<td>4</td>
</tr>
<tr>
<td>EECE 132</td>
<td>Computer Networks I</td>
<td>3</td>
</tr>
<tr>
<td>EECE 152L</td>
<td>Computer Programming I</td>
<td>4</td>
</tr>
<tr>
<td>EECE 238/L</td>
<td>Computer Logic Design</td>
<td>4</td>
</tr>
<tr>
<td>EECE 231</td>
<td>Intermediate Programming I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Elective (3) Choose from: EECE or IT lower-division courses</td>
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TOTAL CREDITS: 65

SUGGESTED SEQUENCE OF COURSES

First Semester (15 cr)

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>English Composition I</td>
<td>3</td>
</tr>
<tr>
<td>EECE 152/L</td>
<td>Computer Programming I</td>
<td>4</td>
</tr>
<tr>
<td>EECE 105/L</td>
<td>Microcomputer Systems I</td>
<td>4</td>
</tr>
<tr>
<td>LT 101</td>
<td>Library Research Skills</td>
<td>1</td>
</tr>
<tr>
<td>HUM 100</td>
<td>FYE: History and Culture of Northern New Mexico</td>
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Second Semester (16 cr)

<table>
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<tr>
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<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EECE 132</td>
<td>Computer Networks I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 162</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>ECON 201</td>
<td>Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>EECE 231</td>
<td>Intermediate Programming</td>
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<td>EECE/IT/CS</td>
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Third Semester (17 cr)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>PHYS 215/L</td>
<td>Engineering Physics I with Lab</td>
<td>4</td>
</tr>
<tr>
<td>ENG 116</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>IT 250</td>
<td>Introduction to Databases</td>
<td>3</td>
</tr>
<tr>
<td>CS 201</td>
<td>Math Foundations of CS</td>
<td>3</td>
</tr>
<tr>
<td>MATH 162</td>
<td>Calculus II</td>
<td>4</td>
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Fourth Semester (17 cr)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>SPCH 130</td>
<td>Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>EECE 238/L</td>
<td>Computer Logic Design</td>
<td>4</td>
</tr>
<tr>
<td>BA</td>
<td>Elective (3)</td>
<td></td>
</tr>
<tr>
<td>MATH 145</td>
<td>Introduction to Probability and Statistics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 216/L</td>
<td>Engineering Physics II with Lab</td>
<td>4</td>
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</tbody>
</table>
Bachelor of Engineering (BEng) in INFORMATION ENGINEERING TECHNOLOGY

The curriculum of the Bachelor of Engineering (BEng) in Information Engineering Technology is designed for those students who intend to launch a career in the design, installation, maintenance, and repair of computing technologies. Coursework in the program is practice-orientated and prepares students to work in a variety of computer-intensive environments, such as technical organizations, small or large businesses, product design or manufacturing companies, and data-directed services. The breadth of training in hardware, software, troubleshooting equipment, and other computer tools will enable the graduate to work in a variety of roles in such environments as software, network, database, and web designer. Additionally, the graduate will have the ability to work as network manager and administrator, project manager, applications developer, test and integration manager and technologist in business applications. The graduate of this curriculum will be versed in mathematics, physics, computer science, and business fundamentals, giving him/her the fundamental knowledge for further graduate studies in Computer Science, Computer Engineering, or Telecommunication Systems.

Failure to maintain an overall GPA of 2.00 or better in all coursework will be sufficient cause for being dropped from the program.

The program objectives are the following:

1. Graduates will be situated in growing careers involving design, development, and support of Information Technology Systems.
2. Graduates will perform effectively individually and in teams.
3. Graduates will have demonstrated involvement in high-level technical and leadership roles.
4. Graduates will have accumulated technical expertise to remain globally competitive.

Completion of this program should result in the following student outcomes:

1. An appropriate mastery of the knowledge, techniques, skills, and modern tools of their disciplines
2. An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering, and technology
3. An ability to conduct, analyze and interpret experiments, and apply experimental results to improve processes
4. An ability to apply creativity in the design of systems, components, or processes appropriate to program educational objectives
5. An ability to function effectively on teams
6. An ability to identify, analyze, and solve technical problems
7. An ability to communicate effectively
8. A recognition of the need for, and an ability to, engage in lifelong learning
9. An ability to understand professional, ethical, and social responsibilities
10. A respect for diversity and knowledge of contemporary professional, societal, and global issues
11. A commitment to quality, timeliness, and continuous improvement
12. The application of Computer and network hardware, operating systems, system and network administration, programming languages, applications software, and databases in the building, testing, operation, and maintenance of hardware and software systems
13. The application of electrical, electronic, telecommunications, and digital signal propagation fundamentals in the building, testing, operation and maintenance of hardware and software systems
14. The ability to design, implement, maintain, and provide for the security of facilities involved with the processing and transfer of information
15. The ability to apply project management techniques to facilities that process and transfer information
16. The ability to apply discrete mathematics, and probability and statistics in the support of facilities that process and transfer information

Students are advised not to attempt upper division coursework (300 and 400-level classes) unless they have earned a GPA of 2.50 or better in all IT, CS, and CT coursework taken at the 100 and 200-level.

GENERAL EDUCATION (47 CR)

Area I. Communications (9 cr)

ENG 111 English Composition I (3)
ENG 116 Technical Writing (3)
SPCH 130 Public Speaking (3)

Area II. Mathematics (11 cr)

MATH 145 Introduction to Probability and Statistics (3)
MATH 162 Calculus I (4)
MATH 163 Calculus II (4)

Area III. Laboratory Sciences (8 cr)

PHYS 215/L Engineering Physics I with lab (4)
PHYS 216/L Engineering Physics II with lab (4)

Area IV. Social/Behavioral Sciences (6–9 cr)

ECON 201 Microeconomics (3)
Elective (3-6)*

Area V. Humanities and Fine Arts (6–9 cr)

HUM 100 FYE: History and Culture of Northern New Mexico (3)
Electives (3-6) Electives in the General Education Common Core are to be chosen from Area IV and V as shown on pages 26-27.

Area VI. Library Technology, Library Research Skills (1 cr)

LT 101 Library Research Skills (1)

Area VII. Foreign Language (3 cr)

Elective (3)
### PROGRAM REQUIREMENTS (84 CR)

#### Computer Science (3)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CS 201</td>
<td>Math Foundations of Computer Science (3)</td>
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#### Electrical, Electronic, and Computer Engineering (37)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EECE 105L</td>
<td>Microcomputer Systems I (4)</td>
</tr>
<tr>
<td>EECE 132</td>
<td>Computer Networks I (3)</td>
</tr>
<tr>
<td>EECE 152L</td>
<td>Computer Programming I (4)</td>
</tr>
<tr>
<td>EECE 231</td>
<td>Intermediate Programming I (3)</td>
</tr>
<tr>
<td>EECE 238L</td>
<td>Computer Logic Design (4)</td>
</tr>
<tr>
<td>EECE 329</td>
<td>Human Computer Interaction (3)</td>
</tr>
<tr>
<td>EECE 330</td>
<td>Computer Networks II (3)</td>
</tr>
<tr>
<td>EECE 342</td>
<td>Wireless and Mobile Computing (3)</td>
</tr>
<tr>
<td>EECE 355</td>
<td>Web Engineering (4)</td>
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<tr>
<td>EECE 435</td>
<td>Software Engineering (3)</td>
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<tr>
<td>EECE 440</td>
<td>Advanced Computer Networks (3)</td>
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#### Information Technology (20)

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>IT 210</td>
<td>IT Systems (3)</td>
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<tr>
<td>IT 250</td>
<td>Introduction to Databases (3)</td>
</tr>
<tr>
<td>IT 350</td>
<td>Database Management (3)</td>
</tr>
<tr>
<td>IT 410</td>
<td>Information Assurance/Security (3)</td>
</tr>
<tr>
<td>IT 490</td>
<td>IT Capstone I (4) (WIC)</td>
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<tr>
<td>IT 491</td>
<td>IT Capstone II (4)</td>
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#### Business (9)

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>ENGR 474</td>
<td>Engineering Project Management (3)</td>
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<tr>
<td>Electives in ENGR at 4XX-level (6)</td>
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#### Support Technologies (15 cr)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENGR 110</td>
<td>Introduction to Engineering Technology (3)</td>
</tr>
<tr>
<td>EECE 203L</td>
<td>Circuit Analysis I (4)</td>
</tr>
<tr>
<td>Upper-division electives from EECE/CS/IT/MATH courses (8)</td>
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</table>

**TOTAL CREDITS: 131**

### SUGGESTED SEQUENCE OF COURSES

- **FOR** = Foreign Language (Area VII)
- **HFA** = Humanities & Fine Arts (Area V)
- **SBS** = Social/Behavioral Science (Area IV)

#### First Semester (17 cr)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>LT 101</td>
<td>Library Research Skills (1)</td>
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<tr>
<td>HUM 100</td>
<td>First Year Exp: Hist. Cult. NNMC (3)</td>
</tr>
<tr>
<td>ENG 111</td>
<td>English Composition I (3)</td>
</tr>
<tr>
<td>EECE 152/L</td>
<td>Computer Programming I (4)</td>
</tr>
<tr>
<td>EECE 132</td>
<td>Computer Networks I (3)</td>
</tr>
<tr>
<td>ENGR 110</td>
<td>Introduction to Engineering (3)</td>
</tr>
</tbody>
</table>
### Second Semester (17 cr)
- **MATH** 162  Calculus I (4)
- **IT** 210  IT Systems (3)
- **EECE** 330  Computer Networks II (3)
- **EECE** 231  Intermediate Programming (3)
- **EECE** 105/L  Microcomputer Systems (4)

### Third Semester (17 cr)
- **ENG** 116  Technical Writing (3)
- **MATH** 162  Calculus II (4)
- **PHYS** 215/L  Engineering Physics I with lab (4)
- **EECE** 342  Wireless and Mobile Computing (3)
- **IT** 250  Intro. to Databases (3)

### Fourth Semester (16 cr)
- **PHYS** 216/L  Engineering Physics II with lab (4)
- **CS** 201  Math Foundations of CS (3)
- **FOR/LA** 201  Foreign Language (3)
- **MATH** 145  Introduction to Probability and Statistics (3)
- **SPCH** 130  Public Speaking (3)

### Fifth Semester (17 cr)
- **EECE** 238/L  Computer Logic Design (4)
- **EECE** 329  Human Computer Interaction (3)
- **EECE** 203/L  Circuit Analysis I (4)
- **ECON** 201  Microeconomics (3)
- **HUM/SOC** 201  Elective (3)

### Sixth Semester (16 cr)
- **IT** 350  Database Management (3)
- **EECE** 440  Advanced Computer Networks (3)
- **ENGR** 474  Engineering Project Management (3)
- **EECE** 355  Web Engineering (4)
- **EECE** 435  Software Engineering (3)

### Seventh Semester (17 cr)
- **IT** 410  Information Assurance/Security (3)
- **IT** 490  Capstone I (4)
- **EECE/CS/IT/MATH** Elective 3XX/4XX (4)
- **ENGR** 4XX  Elective (3)
- **HUM/SOC** 201  Elective (3)

### Eighth Semester (14 cr)
- **IT** 491  Capstone II (4)
- **EECE/CS/IT/MATH** Elective 3XX/4XX (4)
- **ENGR** 4XX  Elective (3)
- **HFA/SBS** 201  Elective (3)
Bachelor of Engineering (BEng)
MECHANICAL ENGINEERING
Solar Energy Concentration

The curriculum of the BEng in Mechanical Engineering is designed for those engineering students who intend to launch a career in the design, installation, maintenance and repair of solar energy conversion and storage devices, modules and systems used for alternative energy sources or controllers. Coursework in the program is practice-oriented and prepares students to work in a variety of green technology engineering organizations, small or large businesses, product design or manufacturing companies, and alternative energy consultancies and public policy agencies.

The breadth of training in hardware, software, power engineering, troubleshooting equipment and other technological tools will enable the graduate to work in a variety of roles in such environments as an electric grid engineer, a power engineering network designer, and alternative energy engineer or a project manager. The graduate of this curriculum will be a professional engineering specialist in solar energy power sources, but broadly versed in mathematics, physics, general design, computer science, and business fundamentals.

Failure to maintain an overall GPA of 2.00 or better in all coursework will be sufficient cause for being dropped from the program.

The program objectives are the following:

1. Graduates will be situated in growing careers involving design, development, and support of Mechanical Engineering and Solar Energy Systems.
2. Graduates will perform effectively both individually and in teams.
3. Graduates will demonstrate involvement in high-level technical and leadership roles.
4. Graduates will accumulate the technical expertise to remain globally competitive.

Completion of this program should result in the following student outcomes:

1. An ability to apply knowledge of mathematics, science, and engineering
2. An ability to design and conduct experiments, as well as to analyze and interpret data
3. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
4. An ability to function on multidisciplinary teams
5. An ability to identify, formulate, and solve engineering problems
6. An understanding of professional and ethical responsibility
7. An ability to communicate effectively
8. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
9. A recognition of the need for, and an ability to, engage in life-long learning
10. Knowledge of contemporary issues
11. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
GENERAL EDUCATION (61 CR)

Area I. Communications (9 cr)
- ENG 111 English Composition I (3)
- ENG 116 Technical Writing (3)
- SPCH 130 Public Speaking (3)

Area II. Mathematics (21 cr)
- MATH 145 Introduction to Probability and Statistics (3)
- MATH 162 Calculus I (4)
- MATH 163 Calculus II (4)
- MATH 264 Calculus III (4)
- MATH 314 Linear Algebra with Applications (3)
- MATH 316 Applied Ordinary Differential Equations (3)

Area III. Laboratory Sciences (12 cr)
- CHEM 121/L General Chemistry I with lab (4)
- PHYS 215/L Engineering Physics I with lab (4)
- PHYS 216/L Engineering Physics II with lab (4)

Area IV. Social/Behavioral Sciences (6-9 cr)
- ECON 201 Microeconomics (3)
- Elective (3-6)*

Area V. Humanities and Fine Arts (6–9 cr)
- HUM 100 FYE: History and Culture of Northern New Mexico (3)
- Electives (3-6) Electives in the General Education Common Core are to be chosen from Area IV and V as shown on pages 26-27.

Area VI. Library Technology, Library Research Skills (1 cr)
- LT 101 Library Research Skills (1)

Area VII. Foreign Language (3 cr)
- Elective (3)

PROGRAM REQUIREMENTS (72 CR)

Solar Energy and Storage (42 cr)
- ME 160L General Engineering Design I (3)
- ME 202 Engineering Statics (3)
- ME 301 Thermodynamics (3)
- ME 302 Mechanics of Materials (3)
- ME 306 Dynamics (3)
- ME 317 Fluid Mechanics (3)
- ME 318L Mechanical Engineering Lab (3)
- ME 320L Heat Transfer (4)
- ME 390 Power Systems (3)
- ME 403 Solar Thermal Applications (3)
<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>ME</td>
<td>495</td>
<td>Advanced Mechanical Engineering Design (3)</td>
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<tr>
<td>ME</td>
<td>490</td>
<td>ME Capstone I (4) (WIC)</td>
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<tr>
<td>ME</td>
<td>491</td>
<td>ME Capstone II (4)</td>
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**Support Technologies (21 cr)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>ENGR</td>
<td>110</td>
<td>Introduction to Engineering (3)</td>
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<tr>
<td>ENGR</td>
<td>120</td>
<td>Introductory Mathematics for Engineering Applications (4)</td>
</tr>
<tr>
<td>EECE</td>
<td>152</td>
<td>Computer Programming I (4)</td>
</tr>
<tr>
<td>EECE</td>
<td>203L</td>
<td>Circuit Analysis I (4)</td>
</tr>
<tr>
<td>EECE</td>
<td>453</td>
<td>Electric Energy Storage Devices (3)</td>
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<tr>
<td>EECE</td>
<td>472</td>
<td>Photovoltaic Devices (3)</td>
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**Electives (9 cr)**

Elective in ENGR/EECE/ME/MATH at 3XX/4XX-level (9)

**TOTAL CREDITS: 133**

**SUGGESTED SEQUENCE OF COURSES**

FOR = Foreign Language (Area VII)
HFA = Humanities & Fine Arts (Area V)
SBS = Social/Behavioral Sciences (Area IV)

**First Semester (15 cr)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGR</td>
<td>120</td>
<td>Introductory Mathematics for Engineering Applications (4)</td>
</tr>
<tr>
<td>EECE</td>
<td>152</td>
<td>Computer Programming I (4)</td>
</tr>
<tr>
<td>ENGR</td>
<td>110</td>
<td>Introduction to Engineering (3)</td>
</tr>
<tr>
<td>LT</td>
<td>101</td>
<td>Library Research Skills (1)</td>
</tr>
<tr>
<td>HUM</td>
<td>100</td>
<td>FYE: History and Culture of Northern New Mexico (3)</td>
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</table>

**Second Semester (17 cr)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>ENG</td>
<td>111</td>
<td>English Composition I (3)</td>
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<tr>
<td>MATH</td>
<td>162</td>
<td>Calculus I (4)</td>
</tr>
<tr>
<td>PHYS</td>
<td>215/L</td>
<td>Engineering Physics I with lab (4)</td>
</tr>
<tr>
<td>ME</td>
<td>160L</td>
<td>Gen. Engineering Design I (3)</td>
</tr>
<tr>
<td>MATH</td>
<td>145</td>
<td>Introduction to Probability and Statistics (3)</td>
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</table>

**Third Semester (18 cr)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
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<tbody>
<tr>
<td>MATH</td>
<td>163</td>
<td>Calculus II (4)</td>
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<tr>
<td>PHYS</td>
<td>216/L</td>
<td>Engineering Physics II with Lab (4)</td>
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<tr>
<td>ME</td>
<td>202</td>
<td>Engineering Statics (3)</td>
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<td>CHEM</td>
<td>121/L</td>
<td>General Chemistry I with lab (4)</td>
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**Fourth Semester (16 cr)**

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<tr>
<td>EECE</td>
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<td>ME</td>
<td>306</td>
<td>Dynamics (3)</td>
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<tr>
<td>SPCH</td>
<td>130</td>
<td>Public Speaking (3)</td>
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<tr>
<td>ENG 116</td>
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<td>Technical Writing</td>
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<tr>
<td>ME 302</td>
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<td>Mechanics of Materials</td>
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**Fifth Semester (16 cr)**

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<td>Foreign Language</td>
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<td>MATH 264</td>
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<td>Calculus III</td>
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<tr>
<td>MATH 316</td>
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<td>Applied Ordinary Differential Equations</td>
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**Sixth Semester (18 cr)**

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<tr>
<td>ME 317</td>
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<tr>
<td>ME 495</td>
<td>3</td>
<td>Advanced Mechanical Engineering Design</td>
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<tr>
<td>MATH 314</td>
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<td>Linear Algebra with Applications</td>
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<td>SBS</td>
<td>3</td>
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<td>EECE 472</td>
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<td>PV Devices</td>
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**Seventh Semester (17 cr)**

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<td>Power Systems</td>
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<tr>
<td>ME 320L</td>
<td>4</td>
<td>Heat Transfer</td>
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<tr>
<td>ME 490</td>
<td>4</td>
<td>Capstone I</td>
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<tr>
<td>ME 318L</td>
<td>3</td>
<td>Mechanical Engineering Lab</td>
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<tr>
<td>HFA/SBS</td>
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**Eighth Semester (16 cr)**

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<tr>
<td>EECE 453</td>
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<tr>
<td>ME 491</td>
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<td>Capstone II</td>
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<tr>
<td>ME 403</td>
<td>3</td>
<td>Solar Thermal Applications</td>
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Post Baccalaureate Certificate in INFORMATION ENGINEERING TECHNOLOGY

The curriculum for the Post Baccalaureate Certificate in Engineering in Information Technology is a practice-oriented professional program, meant to extend students’ undergraduate education. The program will provide high-quality and affordable education to engineers who want to master their knowledge in networks used for critical data entry, transfer, retrieval, and management of information systems. Coursework in the program is practice-oriented and prepares students to work as leaders in a variety of computer-intensive environments, such as technical organizations, small or large businesses, product design or manufacturing companies, and data-directed services. Coursework in the program consists of gateway courses towards pursuit of a master’s program in the field.

Completion of this program should result in the following student outcomes:

1. Graduates will have gained the theoretical and hands-on experience needed to pursue a Master’s Program in the field.
2. Graduates will encompass a deeper understanding of management solutions for professionals in information systems and information technology.
3. Graduates will excel in highly technical leadership roles.

Completion of this program should result in the following student outcomes:

1. An ability to apply knowledge of Information Engineering Technologies
2. An ability to function on multidisciplinary teams
3. An ability to communicate effectively
4. The ability to design, implement, provide, and supervise the security of facilities involved with the processing and transfer of information

PROGRAM REQUIREMENTS

Electrical, Electronic, and Computer Engineering (3)

EECE 547 Routing and Switching (3)

Information Technology (9)

IT 510 Information Assurance and Security (3)
IT 530 Network Administration (3)
IT 599 Topics in IT (3)

Support Technology (3)

ENGR 578 Engineering Ethics (3)

TOTAL CREDITS: 15
Course Descriptions

1. Freshman courses are numbered 100-199; sophomore courses numbered 200-299; junior courses numbered 300-399; senior courses numbered 400-499, and graduate courses numbered 500-599. Lower-division topic courses are numbered 147 and 247; upper-division topic courses are numbered 399 and 499.

2. Courses labeled with an “N” immediately after the course number are considered to be remedial in nature and will not be accepted to fill the requirements for any degree at Northern. Remedial courses will normally not transfer to other colleges.

3. Courses designated with WIC are Writing Intensive Courses required for a bachelor's degree. See page 28 for more information.

4. No course with a grade of less than a C or CR (as appropriate) will be accepted for graduation.

5. Any course which is designated as a prerequisite to another course must be passed with at least a grade of C or CR (as appropriate) in order to proceed to the next level course.

6. Immediately after the course description appears an entry inside parentheses. This number is read in two parts. For example, (3, 1T+2S) is read as: course value = 3 credits; 1 credit of theory, 2 credits of activity/shop/studio. If the course were a laboratory, it might read (1, 0T+1L). Each credit of theory (T) requires the equivalent per week of 50 minutes of instructional time; each credit of shop/activity (S) requires 100 minutes per week; and each credit of laboratory (L) requires 150 minutes per week. Therefore, an entry of 3, 1T+2S would be scheduled to meet a total of 250 minutes per week of instructional time. These calculations refer to a course offered over a full sixteen-week semester. The amount of time per week for a course offered over a shorter period of time is increased to meet the required time in a shorter period.

7. Courses listed in this catalog are subject to change or deletion through normal academic channels. New courses and changes in existing course work are initiated by the responsible department chairperson, approved by the faculty curriculum committee, the faculty senate, and the Provost.

ADOBE CONSTRUCTION

100 ADOBE CONSTRUCTION BASICS You will cover the design and construction techniques of traditional and modern adobe dwelling and monumental structures of Northern New Mexico from foundation to roof, including passive solar design, with emphasis on the techniques which meet modern building codes. You will also study historical and worldwide techniques. (3, 3T+0S)

101 ADOBE DESIGN AND CONSTRUCTION WORLDWIDE You will cover the history of adobe buildings throughout the world, with emphasis on modern practices that meet existing building codes. You will examine design and construction techniques of homes, monumental structures, and settlements. You will also make adobes and build walls and other building components. Classes are conducted on- and off-campus, and may utilize the Internet and other distance-learning facilitators. (3, 3T+0S)

102 ADOBE WALL CONSTRUCTION You will cover exterior and interior walls and buttresses, foundations, rough bucks, lintels, bond beams; and the installation of doors and windows, including wood frame, and post and beam techniques. Classes are conducted on- and off-campus. (Fall) (4, 2T+2S)
103 ROOF DESIGN AND CONSTRUCTION You will cover traditional Southwest designs of pitched and flat roofs: materials, structure, and plans, including vigas, beams, joists, rafters, trusses, latillas, rough boards, tongue-and-groove, deck sheathing, canales, and parapets. Classes are conducted on- and off-campus. (4, 2T+2S)

104 FLOOR DESIGN AND CONSTRUCTION You will discuss and build (or mock up) traditional and modern floors and floor coverings found in the Southwest, including mud, wood, brick, stone, concrete, tile, and sheet goods. Classes are conducted on- and off-campus. (4, 2T+2S)

105 FINISH PRACTICES You will work with traditional and modern finishes used in the building of the exteriors and interiors of buildings of the Southwest: treatments of exposed adobe bricks; mud plaster by hand and trowel; plasters made with stabilized mud, lime, gypsum, cement, and elastomers. Wall insulation, vapor barriers, moisture protection, and lath systems will be considered. Vigas, posts, corbels, exposed lintels, wood trim, paint, and stain are covered. Classes are conducted on-and-off campus. (Fall, Spring, Summer) (4, 2T+2S)

107 PASSIVE SOLAR HEATING You will learn passive solar heating systems that work well when integrated into the design of adobe homes, including direct gain systems, Trombe wall (indirect) systems, and greenhouse/sunspaces. You will learn the advantages and disadvantages of each system in order to choose between them for use in different parts of a house or commercial structure. You will cover calculations for appropriate sizing of systems as well as auxiliary back-up systems. (2, 2T+0S)

110 PRESERVATION AND RESTORATION PRACTICES You will learn preservation, restoration, conservation, remodeling, and building of additions to existing adobe structures. Building surveying, cost estimating, historic building requirements, and safety considerations are also covered. Classes will be conducted both on-and-off-campus. (Fall, Spring, Summer) (2, 2T+0S)

110L PRESERVATION AND RESTORATION LAB This is a project course that provides students with experience in areas covered in ADOB 110. Classes will be conducted both on-and-off campus. (Fall, Spring, Summer) (2, 0T+2S).

111 HORNO DESIGN AND CONSTRUCTION You will study the history and design of hornos and mud ovens throughout the world. You will construct a traditional New Mexico horno and do a baking demonstration. Classes will be conducted on-and-off-campus. (1, 0T+1S)

112 ARCHES, DOMES, AND VAULTS You will learn systems to create openings and roofs in adobe structures using masonry materials in situations where wood and steel are not available or not desired. You will discuss and use traditional New Mexican and globally utilized techniques. Classes will be conducted on-and-off-campus. (2, 1T+1S)

114 ADOBE CONSTRUCTION BASICS In this course, you will cover the adobe construction process from foundation to roof in a manner that meets adobe construction codes: walls, floors, windows, doors, and plaster, as well as the process of making adobe bricks. Brief mention is given to the best practices for incorporating electrical, plumbing, heating, and communications systems in adobe structures. Discussion will cover passive solar heating opportunities. (2, 2T+0L)

115 RAMMED EARTH CONSTRUCTION This course covers the fundamentals of rammed earth construction. (2, 2T+0S)

116 WEBSITES FOR TRADES AND CRAFTS This course takes you through the process of building your own basic website to promote your craft or trade using a user-friendly
content management system. (1, 1T+0S)

201 ADVANCED TOPICS IN ADOBE CONSTRUCTION This course is designed for you if you have completed the core adobe curriculum or you have construction industry experience and wish to gain skills beyond the entry level. Topics will range across the full curriculum, plus introduce new industry techniques and materials. Individualized learning objectives will be accommodated and research topics may be included. Topics may include computerized heat loss and gain analysis, super-adobe, cast-earth, rammed earth, straw-bale, straw/clay, and pumicecrete construction. If you wish to build skills to establish a business, you might pursue topics such as bidding with architects and designers; establishing credit with banks, suppliers, and subcontractors; and getting paid. May be repeated once for credit. Co-requisite: ADOB 202. (4, 4T+0S)

202 ADVANCED TOPICS PRACTICUM Hands-on experience for ADOB 201 topics, such as actual construction and finishing of full-scale. Field experience could be on-campus or off-campus with a local contractor or with Habitat for Humanity. You might choose to build a home for yourself or actually establish a contracting business. May be repeated once for credit. Co-requisite: ADOB 201. (9, 0T+9S)

206 EARTH IN CONTEMPORARY ARCHITECTURE This course will discuss the use of earth as a structural and conceptual material in contemporary architecture. (1, 1T+0S)

ANTHROPOLOGY (ANTH)

Note: Each course in this department bears a Prerequisite of ENG 109N or an adequate score on the Course Placement Evaluation.

101 PHYSICAL ANTHROPOLOGY You will cover the principles of human biology applicable to paleoanthropology and organic evolution of primates. Co-requisite: ANTH 101L. (3, 3T+0S)

101L PHYSICAL ANTHROPOLOGY LAB You will apply and demonstrate the principles of primate and human evolution. Co-requisite: ANTH 101. (1, 0T+1L)

102 INTRODUCTION TO SOCIAL AND CULTURAL ANTHROPOLOGY You will survey the disciplines of social and cultural anthropology, including culture, language, enculturation, subsistence patterns, economics, marriage, kinship, social groups, political systems, religion, art, and culture change. (Fall only) (3, 3T+0S)

110 INDIAN CULTURES OF THE SOUTHWEST You will study the cultures of the indigenous peoples of the Southwest, including cultural patterns relative to agriculture, religion, arts, tribal governance, economics, etc., including both pre- and post-Columbian periods. (3, 3T+0S)

111 LANGUAGE AND CULTURE You will study the historical and descriptive linguistics, with emphasis on linguistic theory and on the interrelationship between language and culture. Prerequisite: ENG 109N. (3, 3T+0S)

207 CULTURES OF NEW MEXICO (ANTH 2313) You will study the contemporary cultural and ethnic groups of New Mexico, including Native American, Hispanic, Anglo, and others. Prerequisite: ENG 109N. (3, 3T+0S)

210 SOUTHWESTERN FOLKLORE You will survey the expressive culture systems such as art, music, architecture, religion, and space/time orientation of the predominant Southwestern cultures. (3, 3T+0S)
ART (ART)

All studio courses may be repeated without penalty; however, no course may be counted more than once toward graduation requirements.

100 INTRODUCTION TO BASIC WOODCARVING You will carve one small project and, in the process, learn the basic techniques of woodcarving and safety. (1-2, .5-1T+.5-1S)

101 INTERMEDIATE WOODCARVING Using more advanced techniques than learned in ART 100, such as hand-tool usage, carving techniques, and safety, you will produce two small projects. (1-2, .5-1T+.5-1S)

105 INTRODUCTION TO ART You will study basic problems in the understanding and criticism of painting, sculpture, and architecture in Western and non-Western cultures from pre-historic to present time; introduction to basic terminology of the arts and to the language of stylistic criticism; relationships of the arts to each other and their historical background. Includes museum/gallery visits when relevant. Prerequisite: ENG 109N. (3, 3T+0S)

107 HISTORY OF ART 1 You will study the development of Western art from prehistoric times to the Renaissance through slides, videos, lectures, readings, discussions, and analysis. Prerequisite: ENG 109N. (3, 3T+0S)

110 DRAWING 1 You will study the basic materials and mechanics of drawing, with an emphasis on the development of descriptive and perceptual skills. You will also study line, value, mass, texture, and shape as applied to still life, landscape, and the human figure. (3, 1T+2S)

115 TRADITIONAL WOODCARVING You will study the basic methods of woodcarving, including the use and care of tools. Layouts, processes, and techniques are demonstrated with an emphasis on traditional New Mexico styles. (3, 1T+2S)

120 PAINTING I You will learn acrylic painting techniques, including color and pictorial space, still life, landscape, figure, and the abstract. (3, 1T+2S)

122 ELEMENTS OF DESIGN IN ART You will study traditional two- and three-dimensional design elements as they apply to the creation of art in all media. (3, 1T+2S)

123 BASIC BULTO MAKING You will learn the basic techniques for carving and painting bultos in the northern New Mexico style. (1-2, .5-1T+.5-1S)

129 BASIC TINSMITHING You will learn the elementary techniques of designing, cutting, punching, and embossing tin in the northern New Mexico style. (1-2, .5-1T+.5-1S)

130 TINSMITHING I You will study the basic techniques of punching, embossing, cutting, and designing in the tradition of northern New Mexico. (3, 1T+2S)

152 TRADITIONAL SPANISH COLONIAL RETABLO MAKING You will look at traditions in iconography: European traditions, New World, and New Mexico styles beginning with hide paintings, oil-on-panel retablos, and works from the colonial periods. You will create retablos based on these various styles. (3, 1T+2S)

157 RETABLO MAKING You will create retablos in the northern New Mexico style by choosing appropriate wood, paint, and hand-made materials such as gesso and pinon varnish. (1-2, .5-1T+.5-1S)

158 BULTO MAKING You will study the basic techniques for carving and painting bultos in the northern New Mexico style. (3, 1T+2S)

160 POTTERY I You will study hand-built and wheel-thrown pottery, learning various hand-building methods for pinch, coil, and slab-constructed ceramic forms. You will
also study wheel-throwing methods for making basic utilitarian ceramic items, including glaze decoration and electric kiln firing of stoneware pottery. (3, 1T+2S)

170 PHOTOGRAPHY I  You will learn how to use a 35mm camera. You will also learn basic film exposure, film development, and printing of film. (3, 1T+2S)

173 MURAL PAINTING  You will use acrylic paints to create murals on interior walls, making preparatory drawings, after group development and discussion of the concepts and ideas for each space. (3, 1T+2S)

180 MICACEOUS POTTERY I  You will use micaceous clay to form utilitarian vessels with the coil and scrape method to make bowls, bean pots, pitchers, cups, and lidded jars. You will decorate by incising or appliqué and wood-fire pottery in the traditional manner. (3, 1T+2S)

185 SOUTHWEST CRAFTS  You will become familiar with all the crafts from the South-west, their value and cultural background, the techniques employed in producing such crafts, and the history of their development. (3, 3T+0S)

200 POTTERY GLAZE MAKING AND STUDIO PRACTICES  You will learn to make pottery glazes, how to fire a kiln, and how to maintain a production pottery studio. Prerequisite: ART 160. (1, 0.5T+0.5S)

208 HISTORY OF NEW MEXICO ART AND ARCHITECTURE  You will explore the tri-cultural area of northern New Mexico through the history of art and architecture. You will learn about the arts, crafts, and architecture of New Mexico through slides, lectures, field trips, and guest speakers. Prerequisite: ENG 109N. (3, 3T+0S)

211 HISTORY OF ART II  Continuation of ART 107 in which you will continue your study of Renaissance art to contemporary art through readings, slides, videos, discussions, and analysis. Prerequisite: ENG 109N. (3, 3T+0S)

221 DRAWING II  Continuation of ART 110, in which you will study advanced concepts and technical processes. Prerequisite: ART 110. (3, 1T+2S)

231 TINSMITHING II  You will study advanced techniques of punching, embossing, cutting, and designing in the tinsmithing tradition of northern New Mexico. Your projects will include nichos, columns, sculpture, and chandeliers. Prerequisite: ART 130. (3, 1T+2S)

232 PAINTING II  Continuation of ART 120, including advanced study of concepts and technical processes; encourages independent initiative. Prerequisite: ART 120. (3, 1T+2S)

233 PRINTMAKING I  You will study the techniques of printmaking used in linocut, woodcut, engraving, dry point, and monotype. You will also study the history of printmaking and presentation of prints. (3, 1T+2S)

235 WATERCOLOR  You will study transparent and opaque watercolor media, with emphasis on creative expression and techniques involving varied subject matter. (3, 1T+2S)

237 SCULPTURE  You will study sculpture materials; basic consideration of form; technical and compositional exercises in clay, plaster, wood, and stone. (3, 1T+2S)

239 LIFE DRAWING  You will draw the human figure from a life model, with emphasis on anatomy, gesture, and movement. Prerequisite: ART 110. (3, 1T+2S)

240 PORTRAIT PAINTING  You will study the skills and techniques of portrait painting, with emphasis on facial structure and innovative color composition. Prerequisites: ART 120. (3, 1T+2S)

242 LIFE MODELING  You will learn to construct an armature and model from life. (3, 1T+2S)
243 PRINTMAKING II In a continuation of ART 233, you will study more complex techniques for relief and intaglio, through projects including woodcut, etching/aquatint, chin-colle, and printing with color. You will continue your study of the history of printmaking and presentation of prints. Prerequisite: ART 233. (3, 1T+2S)

246 BOOK ARTS You will study the skills and techniques of book making, with emphasis on calligraphy and styles of format. (3, 1T+2S)

255 MATTING AND FRAMING PICTURES You will develop the skill necessary to mat and frame art work for gallery presentation, including paper mat color selection, mat cutting techniques, and selecting and cutting picture frames. (3, 1T+2S)

260 POTTERY II This is a continuation of ART 160, covering more complex methods for hand-building and wheel-throwing pottery. You will learn to combine building methods, form larger pieces and create more advanced wheel-thrown pottery. In addition, you will explore glazing techniques for stoneware pottery. Prerequisite: ART 160. (3, 1T+2S)

270 PHOTOGRAPHY II A continuation of ART 170 in which you will study advanced black and white techniques covering exposure, development, various films, and the use of filters, with special emphasis on tonal control through the creative use of the zone system; increased emphasis on personal vision, aspects of design, composition, and perception. Prerequisite: ART 170. (3, 1T+2S)

275 POTTERY III A continuation of ART 260 in which you will study advanced methods for hand-building and wheel-throwing of pottery. You will have hands-on experience in kiln loading and glaze making. Prerequisite: ART 260. (3,1T+2S)

280 MICACEOUS POTTERY II You will learn micaceous clay pottery in the tradition of northern New Mexico through a continuation of the techniques learned in ART 180. You will also experiment with advanced techniques of hand-building and out-door firing. Prerequisite: ART 180. (3, 1T+2S)

295 PHOTOGRAPHY III In this continuation of ART 270, which concentrates on advanced black and white printing, you will learn single filter printing, split filter printing, and high key printing. You will use fiber papers and various archival toning processes. Prerequisite: ART 270. (3, 1T+2S)

296 PHOTOGRAPHY PORTFOLIO To assist you in entering the world of professional photography, you will create your own portfolio with a strong emphasis on editing, content, printing, and presentation. You will engage in discussions on how to market your work to enter graduate schools; includes publications, shows, and galleries. Prerequisite: ART 270. (3, 1T+2S)

298 INTRODUCTION TO ALTERNATIVE PHOTOGRAPHIC PROCESSES This course expands the traditional black and white photographic process. You will learn to use hand-applied emulsions using a variety of surfaces, including canvas. You will make cyanotypes, Van Dyke brown prints, and explore hand-coloring techniques. Pinhole cameras and plastic holgas will be available for creative projects. Prerequisite: ART 270. (3, 2T+1S)

The following courses are offered only at the POEH Cultural Center in Pojoaque and appear in this catalog for purposes of transfer of credit only:

150 BASIC JEWELRY AND METAL WORKING You will study jewelry and metalworking as they are practiced in New Mexico. (3, 1T+2S)

155 PUEBLO EMBROIDERY You will learn traditional pueblo embroidery techniques by creating a kilt or table runner. You will also learn to spin yarn, to develop designs, and to use a variety of embroidery techniques after studying the history of pueblo
embroidery and clothing styles. (3, 1T+2S)

156  **PUEBLO SASH WEAVING**  You will study the technique of pueblo sash weaving, including the construction of hand looms, warping, and weaving of a simple design. (3, 1T+2S)

190  **TRADITIONAL SILVER SMITHING**  You will study the basic techniques of silver-smithing, including cutting and joining silver, forging, gemstone setting, tufa casting, and sand casting. (3, 1T+2S)

### ASTRONOMY (ASTR)

110  **INTRODUCTION TO ASTRONOMY**  You will study the fundamentals of modern astronomy, including coverage of the physical and historical nature of the universe, with emphasis on stellar evolution, the Milky Way galaxy, and our solar system. **Prerequisites:** ENG 109N and MATH 100N. **Co-requisite:** ASTR 110L. (3, 3T+0S)

110L  **INTRODUCTION TO ASTRONOMY LAB**  Laboratory experience to accompany ASTR 110. You will learn terrestrial and stellar observation, physical science laboratory exercises, and using the World Wide Web for accessing astronomy links. **Co-requisite:** ASTR 110. (1, 0T+1L)

### AUTO BODY REPAIR (ABR)

111  **METAL I**  In this course, you will learn metal work in the auto body field. Emphasis is placed on the different types of mild and high strength steel sheet metals used in automobile construction; the physical changes that sheet metal undergoes when damaged; classifications of the different types of sheet metal damage; various techniques for straightening sheet metal damage; introduction to the different types of plastic body fillers and their usage; associated hand tools, power tool applications, and personal safety. **Co-requisite:** ABR 110. (4, 3T+1S)

112  **REFINISHING I**  You will learn the basic skills and knowledge associated with equipment used in automobile refinishing, with emphasis on how a spray gun works; basic techniques of good spraying vs. bad spraying; surface preparation; recognizing the variables that influence the quality of the spray finish; adjusting the spray equipment to test and develop a good spray pattern; various types of spray coats; cleaning and caring for a spray gun, siphon, gravity, HVLP type spray guns; operation of the spray booth; and personal safety, including respirators and the handling of hazardous materials. **Co-requisite:** ABR 110. (5, 2T+3S)

113  **FRAME REPAIR**  Through this course you will expand your knowledge of metal work to include minor and major conventional frame repair techniques. You will demonstrate compliance with personal and environmental safety practices associated with clothing, eye protection, handling of hazardous materials, hand tools, and power equipment. **Co-requisite:** ABR 110. (5, 2T+3S)

114  **UNITIZED BODY REPAIR**  You will develop the necessary skills and knowledge associated with repair, replacement, and alignment of components used in unitized construction, placing emphasis on demonstrating compliance with personal and environmental safety practices associated with clothing, eye protection, handling of hazardous materials, hand tools, and power equipment. **Co-requisite:** ABR 110. (5, 2T+3S)

116  **MOVABLE GLASS AND HARDWARE**  Covers door glass, vent windows, and glass mechanisms (both electric and mechanical) with emphasis on removal and replacement. In addition, interior trim panels, seats and headliners are removed and replaced. Students
learn proper care and treatment of vehicle seat protectors, plus the proper use of tools required to perform these tasks. (2, .5T+1.5S)

**120 AUTO BODY WELDING METHODS** You will develop the basic skills necessary to perform metal inert gas welding (MIG) and oxy-acetylene welding on the high strength steel (HSS) and high strength low-alloy (HSLA) steel components used in modern auto body construction and repair, with emphasis on personal safety, work area safety, welding equipment use, safe handling and operation, welding principles and characteristics. **Prerequisite:** ABR 110 and 111. (4, 1T+3S)

**211 METAL WORK II** In this continuation of ABR 111, you will learn about the preparation of non-structural analysis and damage repair. Emphasis is placed on demonstrating compliance with personal and environmental safety practices associated with clothing, eye protection, handling of hazardous materials, hand tools, power equipment; and outer body panel repairs. **Prerequisite:** ABR 111. (4, 1T+3S)

**212 REFINISHING II** You will continue to develop skills in the application of modern automotive paint systems. Emphasis is placed on demonstrating compliance with personal and environmental safety practices associated with clothing, eye protection, handling of hazardous materials, hand tools, power equipment; surface preparation, uses and properties of refinishing material; spray gun and related equipment operation; paint measuring and mixing; color matching, and base/clear applications. **Prerequisite:** ABR 112. (5, 2T+3S)

**213 METAL WORK III** You will continue to expand your skills in metal work, concentrating on outer body panel repairs, replacements, and adjustments. Emphasis is placed on demonstrating compliance with personal and environmental safety practices associated with clothing, eye protection, handling of hazardous materials, hand tools, and power equipment. **Prerequisite:** ABR 211. (4, 1T+3S)

**214 REFINISHING III** You will refine your painting skills to include complete refinishing jobs in various types of paint systems, refinishing defects, causes, and cures. Emphasis is placed on demonstrating compliance with personal and environmental safety practices associated with clothing, eye protection, handling of hazardous materials, hand tools, and power equipment. **Prerequisite:** ABR 212. (5, 2T+3S)

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**AUTOMOTIVE TECHNOLOGY (ATEC)**

**100 DEFENSIVE DRIVING** This course meets the National Safety Council’s requirements for safe driving by identifying risky attitudes and behavior on the roads that cause problems, explaining the difference between good driving and defensive driving by identifying whether a collision was preventable, recognizing driving hazards, and listing the three basic steps in collision avoidance. Graded CR/NC. (1, .5T+.5S)

**101 INTRODUCTION TO AUTOMOTIVE REPAIR** You will study the essential automotive skills needed by repair shops that specialize in maintenance and light repair; highlights workplace safety, industry repair procedures, tools and equipment use, and employment skills valued by employers. (2, 1T+1S)

**102 ENGINE REPAIR** You will study internal combustion theory, engine overhaul procedures, and precision tool measuring. Coursework includes practice of essential engine testing skills and identification of needed repairs, along with removal and replacement of engines. (Fall) (5, 1.5T+3.5S)

**104 BRAKE SYSTEMS** You will study the principles of hydraulic brake operation and practical skills of diagnosis and repair of standard and anti-lock brakes; includes lab
activities on bleeding and adjustment, drum and rotor machining, master cylinder overhaul and brake caliper repair. (5, 3T+2S)

105 SUSPENSION AND ALIGNMENT You will study system repairs and adjustments on a variety of modern automotive suspension types; strut replacement, wheel alignment and tire balancing, steering gear repair, and rebuilding of common suspension component, including lab activities using a tire machine, computer balancer, computer alignment machine, and hydraulic suspension equipment. (4.5, 1.5T+3S)

109 AIR CONDITIONING AND HEATING You will learn testing, evacuating, and charging air conditioning systems while maintaining an awareness of potential environmental concerns caused by automotive refrigerants, as well as cooling and heating diagnosis, climate control, trouble shooting, and repair. (4.5, 1.5T+3S)

114 SERVICE WRITER/CUSTOMER SERVICE You will learn the basics of customer service, repair order (RO) writing, and the general front-office service process. Permission of instructor. (Fall) (1, 1T+0S)

115 AUTOMOBILE RESTRAINT SYSTEMS You will learn to inspect, remove, and replace active restraint systems, passive restraint systems, and supplemental restraint systems. Procedures are demonstrated for disarming and diagnosing restraint systems using electronic equipment and trouble codes. You will also learn replacement of passive restraint systems. **Prerequisite**: ATEC 122. (1.5, .5T+1S)

122 BASIC AUTOMOTIVE ELECTRICITY This course forms the foundation preparing the student to understand the design and components of the on-board computers and basic electronics systems of the modern automobile. (1, 1T+0S)

123 BATTERY, STARTING, AND CHARGING SYSTEMS This course looks at the different battery types, covering cleaning, servicing, and the charging process. Students are introduced to the starting system, which covers its service and repair. The course looks at the design and components of the charging system with considerable attention given to testing the systems. There is a focus on the alternating current charging systems. (2, 1T+1S)

124 ELECTRICAL INSTRUMENTS, LIGHTS, AND ACCESSORIES This course introduces the various gauges, warning devices, and comfort controls likely to be in an instrument cluster. It explains the operating principles of the various slighting systems, and employs schematic diagrams to aid the student in understanding the circuits of the electrical system. (3, 1T+2S)

125 YOU AND YOUR CAR You will study an overview of maintenance and general repair of the complete automobile. (2, 0T+2S)

126 ON-BOARD SYSTEM DIAGNOSIS AND SERVICE Students are introduced to the OBD-II system in-depth for diagnostics and service procedures, including the extensive use of scan tools for gathering and interpreting OBD-II system information. (1, 1T+0S)

127 ENGINE MANAGEMENT SYSTEMS Introduces students to engine electronics, including but not limited to sensors, switches, meters, and modules. Students will gain an understanding of the use of computer programs in the performance of the modern automotive engine management system. **Prerequisite**: ATEC 126. (3, 1T+2S)

128 FUEL MANAGEMENT SYSTEMS This course outlines the advantages of fuel injection over carburetion systems. Students are introduced to the various design types of fuel injection systems. The course further describes the testing, diagnosis, and repair of fuel injection systems and TBI, MFI, and SFI injector testing and service. **Prerequisite**: ATEC 126. (2, 1T+1S)
130 **CDL PERMIT PREPARATION** Federal regulations require that you obtain a learner’s permit to operate a class A or B (and certain class C) vehicles before applying for a CDL license. In order to obtain a driver’s permit, you must pass the two examinations given by the State MVD, which include general knowledge and air brake tests. To achieve that, you will study the facts, terminology, and regulations needed to pass the learner’s permit testing through reviews and practice testing to acquaint you with the testing procedure. (3, 3T+0-S)

139 **A/C RECOVERY/RECYCLE** You will study the proper automotive A/C Recovery and Recycling of refrigerants and Federal EPA requirements. You will be required to test and pass the ASE Recovery/ Recycling certification test. *Prerequisite*: employment with an Automotive Repair Facility. (1, 1T+0S)

144 **BIO-DIESEL FUEL PRODUCTION AND ENGINE REQUIREMENTS** In this course, you will cover the history and present methods of producing bio-diesel fuel from soybeans and from recycled cooking oils and other industrial by-products. You will discuss the engine requirements for using bio-diesel fuels and demonstrate options. You will assemble and use a small-scale bio-diesel production unit. You will investigate fuels available at pumps and project future possibilities. You will spend time under the hood of a functioning bio-diesel vehicle. *Prerequisites*: ENG 108N, MATH 100N, and RE 103. Recommended *Corequisite*: ELEC 190. Cross-listed as RE 144. (4, 2T+2S)

146 **BIO-HYBRID FUEL PRODUCTION AND ENGINE REQUIREMENTS** In this course, you will cover the methods of producing bio-diesel fuel for gas engines from corn and from recycled or redirected industrial products and by-products. You will discuss the engine requirements for using bio-hybrid fuels and demonstrate options. You will investigate home production and fuels available at pumps and project future possibilities. You will spend time under the hood of a functioning bio-hybrid vehicle. *Prerequisites*: ENG 108N, MATH 100N, and RE 103. Recommended *Corequisite*: ELEC 190. Cross-listed as RE 146. (4, 2T+2S)

203 **AUTOMOTIVE ELECTRONICS AND ELECTRICITY** You will study critical troubleshooting skills necessary for identifying and correcting problems found in automotive electrical/electronic systems through the use of Digital Voltage Ohmmeter (DVOM) and analog meter use, voltage drop testing, wiring schematic interpretation, and electrical diagnostic routines. You will also study testing and diagnostic skills in more complex automotive systems, including lighting circuits, body computers and sensors, the use of lab scopes and scan tools, and supplemental restraint systems. *Prerequisites*: ATEC 122, 123, and 124 (3, 1T+2S).

204 **IGNITION SYSTEMS** This course outlines the basic principles of ignition systems and describes their components and how they function. It compares several types of ignition systems and indicates the advantages of recent innovations. Diagnosis and testing of both distributor and distributor-less systems, electrical parameters, sensors, and potential electrical dangers. *Prerequisite*: ATEC 126. (2, 1T+1S)

205 **EMISSION CONTROL SYSTEMS** Students gain an understanding of current federal and state EPA standards relative to automobile tail pipe emissions. Through the use of scan tools, hand-held meters, and exhaust gas emission testers, students gain an understanding of the correct diagnostic and repair procedures related to exhaust emissions. Students utilize learned knowledge from all courses in the electrical and mechanical diagnosis necessary to meet EPA standards. *Prerequisite*: ATEC 126. (3, 1T+2S)

206 **MANUAL TRANSMISSION AND DIFFERENTIAL** You will study the fundamentals of design and operation of front and rear drive manual transmissions, differentials, and
drive line components. Activities in which you will engage include disassembly, measurement, inspection, and reassembly to various transmissions in the car and on the bench. (4, 1T+3S)

207 AUTOMATIC TRANSMISSION You will study the fundamentals of design and operation of front and rear drive automatic transmissions, differentials, and drive line components. Activities in which you will engage include disassembly, measurement, inspection, and reassembly to various transmissions in the car and on the bench. (5.5, 2.5T+3S)

280L PRACTICUM At the start of this course, you will be placed in an approved automotive repair facility or automotive service department, working in an internship program involving approval of a special project and demonstration of quality and professional workmanship. The course is designed to allow you to explore your potential as a professional automobile mechanic. Each hour of credit requires 50 clock hours of practicum. Prerequisite: Permission of instructor. (1-4, 0T+1-4S)

BARBERING (BARB)

Prerequisite for any Barbering course is completion of ENG 108N or adequate scores on the Course Placement Evaluation instrument.

110 BARBERING I This course presents an integrated study and overview of the demands of the profession and the self discipline needed to succeed in the field of barbering. It includes concepts related to professional image, work ethic, professional standards, communication skills, infection control, and industry history. As this course requires both theory and lab, you will perform practical skills on mannequins. The course introduces you to state-required study in theory, facials, hair coloring, chemical texturizing, haircutting, shampooing, hairstyling, and shaving. (17, 7T+10S)

120 BARBERING II This course is a continuation of barbering I. You will perform practical skills on clients, while continuing your study in theory, facials, hair coloring, chemical texturizing, haircutting, shampooing, hairstyling, and shaving. Prerequisite: BARB 110. (16, 5T+11S)

210 BARBERING III This course is a continuation of barbering II. You will perform practical skills on clients, while continuing your study in theory, salon business, facials, hair coloring, chemical texturizing, haircutting, shampooing, hairstyling, and shaving. Prerequisite: BARB 120. (15, 3T+12S)

222 BARBERING DIRECTED STUDY This course is an independent clinical practice of all skills and knowledge learned in related courses. It is designed for students to make up missed state-required clock hours. It may be repeated once. Prerequisite: COSM 120 or 210 or 220. (6, 0T+6S)

230 COSMETOLOGY/BARBER REFRESHER This course is designed for the cosmetologist or barber whose license has expired. You will complete a review of state laws and regulations, take mini-board exams (state laws and practical), and review all required cosmetology/barber course work. Prerequisite: proof of expired cosmetology/barber license. (Summer only) (10, 8T+2S)

BIOLOGY (BIOL)

110 CURRENT TOPICS IN BIOLOGY You will study important current issues in biology, including changes in the biosphere, evolution, genetics, medical advances, and biotechnology. This course is suitable for non-science majors. Prerequisite: ENG 109N;
**BIOLOGY**

**110L CURRENT TOPICS IN BIOLOGY LAB**  
Co-requisite: BIOL 110. (3, 3T+0S)

**151 SCIENCE AND SOCIETY**  
You will examine the principles and practice of modern science and the relationship between science and technology in society. You will also focus on issues of biological science that relate to current political and social challenges and problems, using current topics as a way of understanding how knowledge and understanding impact on culture and society. This course is suitable for those who plan to major in biology.  
Prerequisite: ENG 111; Co-requisite: BIOL 151L. (3, 3T+0L)

**151L SCIENCE AND SOCIETY LAB**  
You will gain practical experience in learning about the scientific method with observations, evidence, and testing to address general biological and physical questions through testing assumptions using varied practical approaches and controlling for variability.  
Co-requisite: BIOL 151. (1, 0T+1L)

**160 BIOTECHNOLOGY SEMINAR I**  
You will study the eight areas of modern biotechnology: microbial, agricultural, animal, forensic, aquatic, medical, regulatory, and bioremediation. Coursework includes discussion of the ethical, legal, and societal issues in biotechnology, as well as modern laboratory techniques. This course is suitable for science majors and non-majors, as well as those interested in career opportunities in the field.  
Prerequisites: BIOL 110/L or higher-level BIOL.  
Co-requisite: BIOL 160L. (Fall) (3, 3T+0L)

**160L BIOTECHNOLOGY LAB I**  
In this laboratory experience, you will study techniques focusing on proper protocols in record keeping, genomic and plasmid DNA isolation, determining DNA concentration by UV spectroscopy, cloning and sub-cloning, preparation of growth curves, measuring bacterial growth by viable counts and spectroscopy, restriction mapping, enzyme assays, regulation of gene expression, cloning vectors, DNA sequencing, preparation of DNA probes, and hybridization.  
Co-requisite: BIOL 160. (Fall) (1, 0T+1L)

**201 PRINCIPLES OF MOLECULAR AND CELL BIOLOGY**  
Through scientific methods, you will study the role of water in cell biology, carbon and molecular diversity, macromolecules, an introduction to metabolism, tour of cell structures and functions, membrane structure and function, cellular respiration, photosynthesis, cell communication, and the cell cycle.  
Prerequisite: CHEM 121/L and ENG 111; Co-requisite: BIOL 201L. [Fall only]. (3, 3T+0L)

**201L PRINCIPLES OF MOLECULAR AND CELL BIOLOGY LAB**  
You will experiment with techniques and methods in molecular and cell biology to support concepts in lecture.  
Co-requisite: BIOL 201. (1, 0T+1L)

**202 PRINCIPLES OF GENETICS**  
You will be exposed to an overview of Mendelian genetics: physical and chemical structure of the hereditary molecules and the role of chromosomes; mitosis, meiosis, and the molecular basis of inheritance; DNA metabolism to include replication, repair, and recombination; genes to proteins; genetic models (viruses and bacteria), eukaryotic genomes, genetic basis of development, and an overview of genomes.  
Prerequisite: BIOL 201/L; Co-requisite: BIOL 202L. (Spring only) (3, 3T+0S)

**202L PRINCIPLES OF GENETICS LAB**  
You will experiment in genetics with a focus on bacterial, yeast, plant, and Drosophila models, with an emphasis on supporting concepts from the lecture.  
Co-requisite: BIOL 202. (Spring only) (1, 0T+1L)

**203 ECOCOLOGY AND EVOLUTION**  
You will study the principles of evolution on the origin of the biosphere and the diversifications of life; the processes of natural selection
BIOLOGY

and the origin of species, and the evolution of populations; evolutionary ecology with emphasis on behavioral, population, and community ecology, along with the impacts on the ecosystem, ecology, and conservation biology. Prerequisite: ENG 111, MATH 150, CHEM 121/L; Co-requisite: BIOL 203L. (Fall) (3, 3T+0L)

203L ECOLOGY AND EVOLUTION LAB You will learn practical applications of the tools and methods used by ecologists and evolutionary biologists to address research questions; an introduction to statistical and sampling techniques used to collect and analyze data on fossils, plants, and animals. Co-requisite: BIOL 203. (1, 0T+1L)

204 PLANT AND ANIMAL FORM AND FUNCTION You will study plant structure and growth, transport in plants, plant nutrition, plant reproduction and development, control systems in plants, introduction to animal systems, animal nutrition, circulation of gas exchange, immune systems, control of the internal environment, chemical signals in animals, reproduction, development, nervous systems, and sensory and motor mechanisms. Prerequisites: MATH 150, BIOL 201/L, and CHEM 122/L. Co-requisite: BIOL 204L. (Spring) (3, 3T+0L)

204L PLANT AND ANIMAL FORM AND FUNCTION LAB You will engage in laboratory experiences supportive of BIOL 204. Co-requisite: BIOL 204. (1, 0T+1L)

210 MICROBIOLOGY You will concentrate on the characteristics of microbes (particularly the bacteria), the influence of microbes on man and his environment and of man on the microbial environment, with a focus on medically significant microbes, physiologic responses to infection, clinical aspects of asepsis, proper procedures in the handling, isolation, and identification of bacteria. Prerequisite: CHEM 110 and 110L. Co-requisite: BIOL 210L. (3, 3T+0L)

210L MICROBIOLOGY LAB Co-requisite: BIOL 210. (1, 0T+1L)

230 FIELD ORNITHOLOGY An introduction to the concepts and techniques of field ornithology, with an emphasis on identifying birds by sight, sound, and behavioral clues. Abundance patterns in relation to habitat distributions and conservation efforts will also be investigated. Bird monitoring techniques will be utilized in the field in order to observe population trends related to bosque restoration efforts. (Summer only) (2, 1T+1L)

237 HUMAN ANATOMY AND PHYSIOLOGY I You will study the structure, function, and chemistry of the human membranes and glands of the integumentary system, skeletal system, muscular system, and muscle and neuron membrane physiology. Prerequisite: CHEM 110 and 110L. Co-requisite: BIOL 237L. (3, 3T+0L)

237L HUMAN ANATOMY AND PHYSIOLOGY I LAB Co-requisite: BIOL 237. (1, 0T+1L)

238 HUMAN ANATOMY AND PHYSIOLOGY II Continuation of BIOL 237. Studies fluid and electrolytes, and the following systems: nervous (central and peripheral), circulatory, urinary, respiratory, digestive, and endocrine and reproductive. Prerequisite: BIOL 237/L; Co-requisite: BIOL 238L. (3, 3T+0L)

238L HUMAN ANATOMY AND PHYSIOLOGY II LAB Co-requisite: BIOL 238. (1, 0T+1L)

260 BIOTECHNOLOGY SEMINAR II In this continuation of Biotechnology Seminar I, you will discuss current issues in DNA technology and biotechnology applications, explore career options in the biomedical research area. Co-requisite: BIOL 260L. Prerequisites: BIOL 160/L. Co-requisite: BIOL 260L. (Spring) (3, 3T+0L)

260L BIOTECHNOLOGY LAB II In this laboratory experience, you will develop techniques for PCR, DNA sequencing and analysis, gene expression in phage lambda and E. coli, SDS-polyacrylamide gel electrophoresis, protein assays, and techniques for
working with proteins, dialysis, and gel filtration and ion exchange chromatography. **Co-requisite:** BIOL 260. (Spring) (1, 0T+1L)

**290 UNDERGRADUATE RESEARCH EXPERIENCE I** In this laboratory-based experience in biological research, you will learn experimental design, library and internet information searches, research methodology, and how to maintain laboratory notes while interacting with peers and faculty. You will prepare a technical report or poster on your activities. Research questions focus on molecular biology, ecology, and environmental science. **Prerequisite:** permission of department chairperson. Graded on a credit/no credit basis. (3, 3T+0L)

**292 UNDERGRADUATE RESEARCH EXPERIENCE II** In this laboratory-based experience in biological research, you will learn experimental design, library and internet information searches, research methodology, and how to maintain laboratory notes while interacting with peers and faculty. You will prepare a technical report or poster on your activities. Research questions focus on molecular biology, ecology, and environmental science. Graded on a credit/no credit basis. **Prerequisite:** BIOL 290. (3, 3T+0L)

**329 MOLECULAR CELL BIOLOGY** You will learn about basic cellular processes and their control mechanisms, including gene expression, protein synthesis, signal transduction pathways, receptor activation and cell cycle. This course is designed to expand the knowledge base of students who have completed introductory-level courses and to serve as a foundation for 400-level courses in biology. **Prerequisite:** BIOL 204/L. (4, 4T+0L)

**349 ESSENTIALS OF ANATOMY AND PHYSIOLOGY** You will learn the essentials of anatomy and physiology of humans and other mammals. Emphasis will be on the study of systems, including nervous, endocrine, cardiovascular, immune, digestive, respiratory, urinary, and reproductive. The course is designed for students majoring in biology or as a refresher course for students in the health sciences who have taken anatomy and physiology in the past. **Prerequisites:** BIOL 204/L or BIOL 237/L and 238/L. **Co-requisite:** BIOL 349L. (3, 3T+0L)

**349L ESSENTIALS OF ANATOMY AND PHYSIOLOGY LAB** In a laboratory setting, you will learn the essentials of anatomy and physiology of humans and other mammals. Emphasis will be on the study of systems, including nervous, endocrine, cardiovascular, immune, digestive, respiratory, urinary, and reproductive. **Co-requisite:** BIOL 349. (1, 0T+1L)

**351 GENERAL MICROBIOLOGY** You will study anatomy, physiology, biochemistry, and ecology of microorganisms and the principles of bacteriological techniques, host-parasites relationships, and infection and immunity. **Prerequisite:** BIOL 204/L. **Co-requisite:** BIOL 351L. (3, 3T+0L)

**351L GENERAL MICROBIOLOGY LAB** You will engage in laboratory experiences supportive of BIOL 351. **Co-requisite:** BIOL 351. (1, 0T+1L)

**360 PLANT BIOLOGY** You will study plant anatomy, physiology, classification, evolution, and ecology as it deals with both higher and lower plants. **Prerequisite:** BIOL 204/L. **Co-requisite:** BIOL 360. (3, 3T+0L)

**360L PLANT BIOLOGY LAB** You will engage in laboratory experiences supportive of BIOL 360, for which this course is a **co-requisite.** **Co-requisite:** BIOL 360. (1, 0T+1L)

**371 INVERTEBRATE BIOLOGY** You will study the major invertebrate groups with emphasis on evolutionary and ecological relationships, as well as the correlation of structure with function. **Prerequisite:** BIOL 204/L; **Co-requisite:** 371L. (3, 3T+0S)

**371L INVERTEBRATE BIOLOGY LAB** You will engage in laboratory experiences supportive of BIOL 371. (1, 0T+1L)
**BIOLOGY**

386 VERTEBRATE BIOLOGY You will study the ecology, behavior, sociology, adaptations, and evolution of the vertebrates. *Prerequisite*: BIOL 204/L (4, 4T+0L)

392 UNDERGRADUATE RESEARCH EXPERIENCE This is a practical faculty-directed research experience for upper-division biology majors. During the regular semester you will perform 8-10 hours per week of work alongside your mentor in a project with a time frame agreed to by both you, the student intern, and the mentor. Arrangements involve all aspects of biological research that can include fieldwork, bench laboratory work, library research, or any combination of these activities. The mentor will actively engage you in sharing the responsibility for the research process. (3, 3T+0L)

406 STREAM ECOLOGY AND FIELD METHODS You will use the scientific method to understand and explain concepts in stream ecology, hydrology, and biology. You will obtain experience in general field methods for stream characterization and sampling in streams of northern New Mexico. *Prerequisites*: BIOL 203/L or ES 125; *Co-requisite*: BIOL 406L (4, 3T+1L)

406L STREAM ECOLOGY AND FIELD METHODS LAB You will engage in laboratory experiences supportive of BIOL 406. (1, 0T+1L)

410 BIOINFORMATICS You will use computers to search biological databases to hunt for genes, discover protein structures, and determine phylogenetic trees from molecular evolution. *Prerequisite*: BIOL 203/L. (Fall) (3, 3T+0L)

412 DEVELOPMENTAL BIOLOGY You will study comparative biology of animal development, with emphasis on regulatory mechanisms. *Prerequisite*: BIOL 204/L and BIOL 349/L. *Co-requisite*: BIOL 412L. (3, 3T+0L)

412L DEVELOPMENTAL BIOLOGY LAB You will engage in laboratory experiences supportive of BIOL 412. (1, 0T+1L)

416 CELLS AND TISSUES You will study the structure and function of the various types of cells in the body and the tissues that are composed of these cells. *Prerequisite*: BIOL 204/L and BIOL 349/L. (Fall) (3, 3T+0L)

416L CELLS AND TISSUES LAB Using the light microscope with histological specimens, you will study the structure of cells and tissues. *Co-requisite*: BIOL 416. (Fall) (1, 0T+1L)

422 COMPARATIVE VERTEBRATE ANATOMY You will conduct a systematic survey of the homology in structure and function of the vertebrates and related chordates, with emphasis on vertebrate phylogeny and correlated anatomical adaptations in the evolution of the anatomy of vertebrates. *Prerequisite*: BIOL 204/L and BIOL 349/L; *Co-requisite*: BIOL 422L (3, 3T+0L)

422L COMPARATIVE VERTEBRATE ANATOMY LAB You will engage in laboratory experiences supportive of BIOL 422. (1, 0T+1L)

425 MOLECULAR GENETICS You will study the molecular biology of the gene, including chromosome structure, DNA replication and repair, RNA transcription and translation and the control of these processes, and techniques used to study these processes. *Prerequisite*: BIOL 329. (Spring) (4, 4T+0L)

426 NEUROBIOLOGY You will study the basic structure and function of the nervous system from the level of individual neurons through such complex brain functions as learning and memory, movement, sensation, and personal perception of the environment. *Prerequisites*: BIOL 204/L and BIOL 349/L or BIOL 237/L and 238/L; *Co-requisite*: BIOL 426L. (Spring) (3, 3T+0L)

426L NEUROBIOLOGY LAB During this lab experience, you will use histological slides,
gross specimens, and neuro-imaging studies. You will also study neural function using computer-based methods. **Co-requisite:** BIOL 426. (1, 0T+1L)

### 431 DRUGS AND THEIR ACTIONS
You will study the basic principles of pharmacology, including how drugs exert their effects on the body. You will study the major categories of drugs and their actions, including antibiotics, anti-inflammatories, hormones, analgesics, and drugs that affect the central nervous system. **Prerequisites:** BIOL 329 and BIOL 349/L (Spring) (4, 4T+0L)

### 435 COMPARATIVE ANIMAL PHYSIOLOGY
You will study the function of organ systems in animals, with emphasis on neuromuscular, cardiovascular, gastrointestinal, and renal physiology. **Prerequisite:** BIOL 349/L. **Co-requisite:** BIOL 435L. (3, 3T+0L)

### 435L COMPARATIVE ANIMAL PHYSIOLOGY LAB
You will engage in laboratory experiences supportive of BIOL 435. (1, 0T+1L)

### 451 GENERAL ECOLOGY
You will cover a comprehensive survey of the ecology of individuals, populations, communities, and ecosystems. **Prerequisite:** BIOL 204/L; **Co-requisite:** BIOL 451L. (3, 3T+0L)

### 451L GENERAL ECOLOGY LAB
You will engage in laboratory experiences supportive of BIOL 451. **Co-requisite:** BIOL 451. (1, 0T+1L)

### 456 IMMUNOLOGY
You will study experientially immunoglobulin structure, antigen-antibody reactions, immunity, and hypersensitivity. **Prerequisite:** BIOL 329. (4, 4T+0L)

### 467 EVOLUTIONARY PLANT ECOLOGY
You will learn evolutionary approaches to the study of plants and plant populations. You will study plant life history strategies, plant population biology and plant reproduction with an emphasis on empirical studies. **Prerequisite:** BIOL 151/L. (3, 3T+0L)

### 472 BIOLOGY SEMINAR
You will attend presentations given by faculty and visiting scientists on their research and careers, and students who have conducted research will present their results as well. Graded CR/NC. **Prerequisite:** permission of instructor. (1, 1T+0L)

### 492 BIOLOGY CAPSTONE PROJECT
You will have the culminating learning experience of your studies in biology and will have an opportunity to integrate and apply competencies and knowledge gained from coursework and laboratory experiences, and to demonstrate a broad mastery of learning across the curriculum. Graded CR/NC. **Prerequisite:** BIOL 151/L and permission of the instructor. (1, 1T+0L)

## BUSINESS ADMINISTRATION (BA)

### 128 INTRODUCTION TO ENTREPRENEURSHIP
An introduction to the principles of entrepreneurship. Topics include self-analysis of entrepreneurship readiness, the role of the entrepreneur in economic development, legal problems, organizational structure, sources of financing, and cash flow. **Prerequisite:** ENG 111. (Fall) (3, 3T+0S)

### 205 BUSINESS STATISTICS
Use of statistics in business; techniques for describing and analyzing descriptive and numerical data; estimation, hypotheses testing, t-tests, and regression; application to business problems. **Prerequisite:** MATH 102N or MATH 103N. (3,3T+0S)

### 214 SMALL BUSINESS MANAGEMENT
Introduces the challenges of entrepreneurship, including the start-up and operation of a small business. Topics include market research techniques, feasibility studies, site analysis, financing alternatives, and managerial decision making. **Prerequisite:** ENG 111. (Fall) (3, 3T+0S)
220  INTRODUCTION TO BUSINESS  Provides an integrated overview of American business and its operations. Special attention to current business, marketing, finance, accounting, and the legal environment of business. A small-business plan will be formulated.  Prerequisite: ENG 109N. (3, 3T+0S)

221  ACCOUNTING PRINCIPLES I  Basic accounting theory and practice, with the purpose of providing information for decision making. Preparation, analysis, and interpretation of financial statements.  Prerequisite: MATH 100N. (3, 3T+0S)

222  ACCOUNTING PRINCIPLES II  This course offers both accounting and non-accounting majors an introduction to managerial accounting. Attention will be focused on the use of accounting data as a basis for decision by management, stockholders, creditors, and other users of financial statements and accounting reports.  Prerequisite: BA 221. (3, 3T+0S)

236  COMPUTERIZED ACCOUNTING  Use of prepared integrated business software, QuickBooks, on microcomputers for the computerization of accounting principles topics.  Prerequisites: BA 221. (3, 3T+0S)

240  PRINCIPLES OF MANAGEMENT  An overview of management principles as these apply to the public, private, and tribal sectors. Special attention to techniques of managerial decision making, the planning process, motivation, leadership, and communication skills.  Prerequisite: ENG 109N. (3, 3T+0S)

241  INTEGRATED MANAGEMENT  This course provides a management-simulated environment to make critical decisions based on the situations that arise in operating competitive business enterprises.  Prerequisite: BA 214 (Spring) (3, 3T+0S)

250  BUSINESS COMMUNICATIONS  Skill development in business writing with an emphasis on the preparation of letters and reports, and on presenting information in a logical, forceful, and acceptable form.  Prerequisite: ENG 111. (3, 3T+0S)

251  PRINCIPLES OF MARKETING  This course covers the marketing process from the inception to conclusion of goods and services, including market, product distribution, promotion, and pricing strategies; devotes special attention to analysis of market and consumer behavior. (3, 3T+0S)

254  INTRODUCTION TO E-COMMERCE  This course builds on currently accepted business practices to develop a business plan and implementation model for e-commerce. Topics include analysis and synthesis of the planning cycle, cost/benefit analysis, technical systems, and marketing.  Prerequisite: BA 128. Spring) (3, 3T+0S)

258  INDIAN GAMING, ENTREPRENEURSHIP, SOVEREIGNITY, AND CASINOS  Review of games played by Pueblo Indians from earliest times to the present and how the establishment of casinos fits within these traditions. Recent history of gaming from bingo operations and the tribal court battles to the passage of the federal Indian Gaming Regulatory Act (1988). Explore and debate the importance of political and economic issues to Pueblo gaming.  Prerequisite: ENG 111. Cross-listed as PIS 258. (3, 3T+0S)

261  BUSINESS TECHNOLOGY  Focuses on how technologies are used to support business needs or initiatives. Course will cover such topics as Customer Relations Management (CRM), Enterprise Resource Planning (ERP), Point of Sale (POS), Accounting Information Systems, E-commerce, Artificial Intelligence (AI), Business Continuity Planning (BCP), risk management, operation security, and/or information security in addition to discussion of ethics as related to technology usage.  Prerequisite: ENG 111, (3, 3T + 0S)

300  BUSINESS LAW  General legal principles, including the creation of laws, contracts,
sales, business, insurance, and other related matters. Prerequisites: ENG 109N. (3, 3T+0S)

304 INTERMEDIATE ACCOUNTING I Accounting principles within a conceptual framework determined by generally accepted accounting principles, financial accounting functions and theory, and recognition and measurement of assets. Prerequisites: BA 222. (3, 3T+0S)

305 INTERMEDIATE ACCOUNTING II Accounting with the study of current accounting objectives, principles, theory and practice in the preparation, interpretation, and analysis of general purpose financial statements for business entities. Emphasis will be on problems relating to investments, liabilities, and stockholders equity, including EPS. Prerequisite: BA 304. (3, 3T+0S)

306 INTERMEDIATE ACCOUNTING III Topics in accounting pertaining to public reporting of company financials. Review of recent FASB rules. Prerequisite: BA 304. (3, 3T+0S).

310 PRINCIPLES OF FINANCE Practical and theoretical financial concepts in order to understand the finance function in today’s business firm. Emphasizes the time value of money, investment valuation, and working-capital management; introduces financial analysis. Prerequisites: BA 205. (3, 3T+0S)

313 ORGANIZATIONAL BEHAVIOR (WIC) Diverse conceptual and theoretical perspectives in organizations, focusing on problems related to perception, motivation, leadership, conflict, stress, influence, decision making, work/family balance, and ethics. Prerequisite: BA 240. (3, 3T+0S)

315 ORGANIZATIONAL THEORY AND DESIGN Organizational behavior on the “macro” level using case analysis topics covering organizational effectiveness, dimensions of organizational structure, determinants of structure, applications, and contemporary issues. (3, 3T+0S)

324 INCOME TAX ACCOUNTING Latest tax law changes as they apply to individuals; problems in tax computation and reporting for individuals, with some emphasis on taxation in business. Prerequisite: BA 221. (3, 3T+0S)

330 PRINCIPLES OF PROJECT MANAGEMENT Review of the complex and unique issues related to effectively managing projects through emphasis on nine knowledge areas specified by the Project Management Institute (PMI). (3, 3T+0S)

331 PROJECT MANAGEMENT PLANNING PROCESS Project planning: development of scope documents, estimates, and schedules for the purpose of planning projects. Prerequisite: BA 330. (3, 3T+0S)

332 PROJECT MANAGEMENT SYSTEMS: BASELINE DEVELOPMENT Systems support used in the development of project plans: database management, scheduling software, and spreadsheets (MS Project, Primavera, Visio). Prerequisite: BA 331. (3, 3T+0S)

333 PROJECT MANAGEMENT: FUNCTIONAL SUPPORT Functional areas and requirements that support project management. Prerequisite: BA 330. (3, 3T+0S)

350 ENTREPRENEURSHIP Methods of small business management and business formation, with an emphasis on the traditional business functions in a small setting. (3, 3T+0S)

351 ADVERTISING AND PUBLIC RELATIONS Advertising, public relations, sales, and promotion practices. Communication techniques and decision-making approaches to
strategically designed campaigns for business and public support. **Prerequisite:** BA 251 (Fall) (3, 3T+0S)

**352 ACCOUNTING INFORMATION SYSTEMS** Current practices and technologies used to design, install, operate, and manage an integrated automated accounting system. Application controls, information security requirements, and integration with other business information systems. **Prerequisite:** BA 222. (3, 3T+0S).

**353 OPERATIONS MANAGEMENT** This course explores the fundamental concepts of operations including productivity, quality control, new product and process development, inventory management, operations strategy, and computer applications. **Prerequisite:** BA 240. (3, 3T+0S)

**354 E-COMMERCE** Techniques, problems, and solutions in eCommerce. Marketing plan considerations, online catalogs, payment methods, security, outsourcing options, and the technologies behind eCommerce web sites. **Prerequisites:** BA 240, BA 251. (3, 3T+0S)

**360 HUMAN RESOURCES MANAGEMENT** Basic concepts of Human Resource Management functions and organizational processes. Emphasizes legislation, specialization, job description, job analysis, self-managed teams, profit/gain sharing, health care, medical leave, harassment, diversity, management and/or labor relations, recruitment, and training. **Prerequisite:** BA 240. (3, 3T+0S)

**361 ADVANCED MANAGEMENT INFORMATION SYSTEMS** The course includes such topics as security, decision support services, system life cycle, social issues of computing, database administration, data mining, data modeling, systems development and emerging technologies. Focus is from the technical manager perspective. **Prerequisites:** BA 261, BA 354 and IT 350. (3, 3T+0S)

**370 RETAIL MANAGEMENT** This course is designed to expose students to the excitement of retailing and to prepare them for a career in retailing and related fields. **Prerequisite:** BA 220 (3, 3T+0L)

**405 ACCOUNTING FOR NON-PROFIT ORGANIZATIONS** Accounting and financial reporting for governmental and non-profit organizations, including topics such as fund accounting for governmental organizations and adherence to GASB standards as well as statement preparation and analysis. **Prerequisite:** BA 304 (Spring) (3, 3T+0S)

**408 CORPORATE FINANCE** In-depth analysis of financial concepts including valuation capital budgeting, cost of capital, leasing, financial analysis, and working capital management. **Prerequisites:** BA 221, BA 310. (Spring) (3, 3T+0S).

**410 MONEY AND BANKING** In-depth analysis of modern monetary theory and policy, commercial banking system and depository institutions, global financial system and foreign exchange market. **Prerequisites:** ECON 200 and BA 310 (Spring) (3, 3T+0S)

**411 MANAGERIAL ACCOUNTING** You will examine the role of accounting in management decision-making for planning and control. Topics include: interpretation and analysis of financial information, relevant cost analysis; budgeting and responsibility accounting, planning for capital expenditures. **Prerequisite:** BA 222 (3, 3T, 0L).

**412 INVESTMENT ANALYSIS AND MANAGEMENT** Types of investment security markets, investment instruments, concepts and strategies for institutional and individual investors. **Prerequisites:** ECON 200, BA 221. (Spring) (3, 3T+0S)

**414 INTERNATIONAL FINANCIAL MANAGEMENT** Analysis of multinational financial markets, their use by the multinational corporation in managing currency risk, as a source
of funds, and for portfolio investment. *Prerequisites:* ECON 200, BA 310. (Spring) (3,3T+0S).

424 FEDERAL TAX ACCOUNTING II Special tax issues of corporations, partnerships, S-corporations, gift taxes, estates, and trusts. Computer applications to research, solve, and analyze tax problems. *Prerequisite:* BA 324. (3, 3T+0S)

429 ADVANCED ACCOUNTING Advanced study of corporate financial analysis and planning, including capital budgeting, cost of funds, and capital structure and valuation. *Prerequisite:* BA 304. (3, 3T+0S)

432 STRATEGIC MANAGEMENT Basic concepts, frameworks, and methodologies useful to managers in crafting and executing business strategy, including quality management. *Prerequisite:* BA 240. (3, 3T+0S)

434 PROJECT EXECUTION & CONTROL: STRATEGIC MANAGEMENT AND ANALYSIS In-depth strategic management and analysis during the execution of projects. *Prerequisite:* BA 332. (3, 3T+0S)

436 PROJECT EXECUTION AND CONTROL: SYSTEMS SUPPORT Execution, reporting and analysis of projects; database management, scheduling software, and spreadsheets (Primavera, Prism, and MS Excel). *Prerequisite:* BA 434. (3, 3T+0S)

442 ADVANCED COST MANAGEMENT Cost management as part of the decision-making process, with an emphasis on resource planning, cost estimating, cost budgeting, and cost control. *Prerequisite:* BA 411. (3, 3T+0S)

444 FINANCIAL STATEMENT ANALYSIS Tools and expertise to find, interpret, and analyze available information to determine, perform, and evaluate the firm. *Prerequisite:* ECON 200, BA 221. (3, 3T+0S)

445 COST ACCOUNTING Advanced topics in the development and interpretation of accounting information as an aid to management. Includes collecting cost information; cost estimation and allocation; standard costing and variance analysis; activity based costing and cost-value relationships. *Prerequisite:* BA 411 Managerial Accounting. (3,3T+0S).

446 AUDITING THEORY AND PRACTICE Accepted principles, practices, and procedures used by public accountants for certifying corporate financial statements. *Prerequisite:* BA 344. (3, 3T+0S)

451 PROFESSIONAL SALES AND SERVICE This course focuses on the skills required to be successful in sales. Students will learn how to employ a strategic selling approach —identifying and addressing the challenges and obstacles to closing the sale. Often, there is more than one decision maker and the sales person must determine who they are and how to satisfy each of their needs and objections. The student will learn how to effectively deal with operational, economic, strategic and technological decision makers. The course details each of the steps within the selling process; provides numerous examples of how to execute each step; and how each step affects the others. The Service section of the course will address successful service strategies and how to maintain growth and customer loyalty in a competitive environment while reducing cost. *Prerequisite:* BA 251 (3, 3T+0S).

452 SERVICES MARKETING Students will study the key components of a successful services business and how to position the business in the market to achieve competitive advantage and customer loyalty. The course focuses on development of the service concept and its value proposition applying the traditional marketing mix: Product; Promotion, Price and Place to specific services characteristics and customer requirements.
Successful services businesses are relationship driven, so emphasis is placed on the people and processes required to expeditiously deliver quality service and superior value. **Prerequisite:** BA 251 (3,3T+0S).

**453 MARKET RESEARCH** Students will learn how to effectively organize and execute the process of gathering information about markets, competition and customers to facilitate strategy development and decision making. Data collection and interpretation techniques required to effectively select and segment markets, define product and service offerings and preempt the competition are covered. **Prerequisites:** BA 251, MATH 145 (3, 3T+0S)

**454 INTEGRATED MARKETING COMMUNICATIONS** Integrated Marketing Communications (IMC) provides the student with a very comprehensive look at how market managers build and sustain strong customer relationships. Today’s communications strategies must encompass the total communications mix. In order to effectively communicate with all of an organization’s constituencies (customers, prospects, suppliers, partners, shareholders and employees) marketers must utilize a myriad of tools; advertising, public relations, direct marketing, personalized communications, interactive marketing, sales promotion, the internet and personal selling. Students will learn how each component of this integrated messaging strategy is designed to complement and build on the others. The course underscores the importance of recognizing that a firm must use every tool at its disposal to convey a unified message to each of their target audiences. **Prerequisite:** BA 351 (3, 3T+0S)

**455 PRODUCT MANAGEMENT** Students will learn how to direct and manage the entire product life cycle from new product development through launch and on to maturity and end-of-life. **Prerequisite:** BA 251 (3, 3T+0S).

**456 MARKETING MANAGEMENT** The student will gain a comprehensive view and understanding of the role of Marketing Managers in today’s dynamic and rapidly changing global marketplace. They must provide their business with a vision for the future; monitor and understand a dynamic market environment; generate strategic options and deliver programs that sustain a measurable competitive advantage. The course focuses on these goals as well as the issues that marketing managers are confronted with on a daily basis. It covers the most recent and relevant techniques and processes being applied to the functions of: strategy development; interpreting consumer behavior; market segmentation; B2C and B2B marketing; brand management; marketing communications; customer relationship management (CRM); distribution strategy; product pricing and promotion. The course also addresses the latest technologies in digital marketing and e-commerce. **Prerequisite:** BA 351. (3,3T+0S).

**457 MIS POLICIES** Examine and critique various MIS policies covering such topics as Access Control; Application Security, Information Security and Risk Management, Personal Computer Usage, E-mail, Acceptable User Practices, Internet Usage, Intellectual Property, Firewall, Management Risk Acceptance and Non-Disclosure. Focus is from a technical manager perspective. **Prerequisites:** EECE 152L, EECE 132, IT 210. (3,3T+0S)

**460 LABOR RELATIONS** Labor union history, labor law, collective bargaining, labor-management relations, and the concept of management prerogative with respect to defining jobs, working conditions, and other human resources functions. (3, 3T+0S)

**461 ETHICAL AND LEGAL ISSUES IN BUSINESS** Current topics in the areas of law, regulatory controls, and ethical issues, focusing discussions on the implications of these legal situations in management. **Prerequisite:** BA 300. (3, 3T+0S)

**462 INTERNATIONAL BUSINESS AND MANAGEMENT** International business and
environments by covering topics such as the international monetary system, import-export, growing competition and trading relationships in a global community. (3, 3T+0S)

463 TECHNOLOGY TRANSFER ASIA/USA Technology transfer process between Asia and the United States in the last twenty-five years, the emergence of Asia as a technology center with Foreign Direct Investment (FDI), and the role of multinationals, government incentives, and world trade agreements. Prerequisite: BA 462. (Spring) (3, 3T+0S)

464 BUSINESS CONTINUITY PLANNING/DISASTER PLANNING Examine and critique various Business Continuity and Disaster Recovery Planning models and documents. Students will conduct a business impact analysis of one business function. Prerequisites: 30 hours of BA courses or instructor permission and BA 354. (3, 3T+0S).

465 SPECIAL TOPICS IN MIS Topics from current literature dealing with MIS issues or concepts. Focus is from the technical manager perspective. Prerequisites: 30 hours of BA courses or instructor permission and BA 354. (1-6 crs)

470 SCIENCE, ENGINEERING, AND TECHNOLOGY MANAGEMENT Techniques in the management of science, technology, or engineering organizations; the influence of technology on business processes; technology and business strategy. Prerequisite: BA 220 and 240. (Fall) (3, 3T+0S)

471 MARKETING HIGH TECHNOLOGY The marketing of high technology products and services in business-to-business market segments; product management, manufacturing, service and sales in high-technology companies. Prerequisites: BA 220 and 240. (Fall) (3, 3T+0S)

485 INTERNSHIP Service learning in field of interest within a job-related environment. Prerequisite: You must petition to enroll in this course. (6, 6T+0S)

490 CAPSTONE Service Learning project in a field of interest within a job-related environment. Course will also include completion of a Major Field Test. Prerequisites: completion of at least 18 hours of Common BBA requirements and permission of instructor. (6, 6T+OL)

BUSINESS COMPUTING INFORMATION SYSTEMS (BCIS)

102 COMPUTER LITERACY Overview of computer hardware, software, and the Windows or Linux environment. You will cover basic computer operating principles, file management, the using the Internet, along with an introduction to word processors, spreadsheets, and database programs. (3, 3T+0S)

115 INTRODUCTION TO MS EXCEL Introduction to the electronic spreadsheet, specifically how to use, design, and edit spreadsheets for use in a variety of personal and business applications. (1, 1T+0S)

116 INTRODUCTION TO MS POWERPOINT Introduction to the electronic presentation, specifically how to use, design, and edit presentation graphics for use in a variety of personal and business applications. (1, 1T+0S)

139 INTRODUCTION TO MS WORD A brief overview of the word processing application package, Microsoft Word. You will learn to create basic documents, such as letters and memos. You will be provided with the basic knowledge as well as hands-on experience to allow you to become computer literate in Word. (1, 1T+0S)

155 INTRODUCTION TO MS ACCESS Introduction to the electronic database, specifically, how to use, design, and edit databases for use in a variety of personal and business applications. (1, 1T+0S)
200 BUSINESS COMPUTER APPLICATIONS The owner/manager approach to the use of microcomputers: systems design, software, business applications, and the Windows environment. (3, 3T+0S)

225 EXCEL Illustrates the features of Microsoft Excel, a spreadsheet program that organizes data, completes calculations, makes decisions, graphs (charts) data, and develops professional-looking reports. (3, 3T+0S)

226 POWERPOINT Microsoft PowerPoint is a complete presentation graphics software program that produces a professional-looking presentation. PowerPoint enables informal presentations in a small conference room using overhead transparencies. (3, 3T+0S)

249 MICROSOFT WORD Covers the commands of Microsoft Word by using step-by-step applications; provides a working knowledge of the basic and intermediate capabilities of Microsoft Word on an IBM compatible. (3, 3T+0S)

265 MICROSOFT ACCESS A Windows database course teaching basic through intermediate features: creating and editing databases by using step-by-step activities; formatting fields and entering calculated fields, as well as creating forms and using queries to extract information. (3, 3T+0S)

CARPENTRY (CARP)

153 FRAMING CARPENTRY WITH WOOD / STEEL STUDS Covers the basics of standard stud frame building construction with emphasis on walls. Wood frame construction is emphasized; steel frame construction gets secondary attention. Safety, tools, measuring and cutting materials begin the course. You will learn the various parts of a wall framing system, their proper size, and how to fasten them together. Classes will be conducted on- and off-campus. (4, 2T+2S)

154 FINISH CARPENTRY Covers the techniques, materials, and tools used in finish carpentry. Emphasis is on interior finish woodwork, such as the trim around windows and doors, and at junctures between floors and walls. Also covers traditional and historical methods and materials found in the Southwest. Includes new materials and emerging techniques which are replacing wood. Classes will be conducted on- and off-campus. (4, 2T+2S)

155 SPECIALIZED CARPENTRY Covers the techniques, materials, and tools used in specialized carpentry. Includes stair building; deck and rail building; cabinetry installation; and the construction of light shafts, skylights, dormers, and site-built trusses; foundations of wood and concrete foundation formwork. Classes will be conducted on- and off-campus. (3, 2T+1S)

171 CARPENTRY APPRENTICE LEVEL 1A This course is for Carpentry Apprentices in the National Construction Trades Center for Education and Research (NCCER) Program. The four-year program leads to Journeyman Certification by NCCER, where credentials reside in the National Registry. Instruction and testing is by NCCER certified instructors. The course covers basic safety, an introduction to construction math, an introduction to hand and power tools, an introduction to blueprints, basic rigging, and wood building materials. Prerequisite: acceptance into the NCCER program. (6, 6T+0S)

172 CARPENTRY APPRENTICE LEVEL 1B This course covers floor systems, wall and ceiling framing, and windows and exterior doors. It is the second course in the four-year NCCER Carpentry Apprenticeship Program. Prerequisite: CARP 171 (6, 6T+0S)

173 CARPENTRY APPRENTICE LEVEL 2A This course covers reading plans and elevations, site layout one, distance measurement and leveling, introduction to concrete and
reinforcing materials, and foundations and flatwork. This is the third course in the NCEER four-year program. Prerequisite: CARP 172, or NCCER admission at this level. (6, 6T+0S)

174 CARPENTRY APPRENTICE LEVEL 2B This course covers concrete forms, reinforcing concrete, handling and placing of concrete, and manufactured forms. This is the fourth in the NCCER program. Prerequisite: CARP 173. (6, 6T+0S)

175 CARPENTRY APPRENTICE LEVEL 3A This course covers exterior finishing, roofing applications, thermal and moisture protection, stairs, and framing with metal studs. This is the fifth course in the NCCER program. Prerequisite: CARP 174 or NCCER admission at this level. (6, 6T+0S)

176 CARPENTRY APPRENTICE LEVEL 3B This course covers drywall one, installation, dry-wall two, finishing, interior finish one, doors, interior finish two, suspended ceilings, interior finish three, window, door, floor, and ceiling trim, interior finish four, and cabinet installation. This is the sixth course in the NCCER program. Prerequisite: CARP 175. (6, 6T+0S)

177 CARPENTRY APPRENTICE LEVEL 4A This course covers Site Layout Two: angular measurement; advanced roof systems; and advanced floor systems. This is the seventh course in the NCCER program. Prerequisite: CARP 176 or NCCER admission at this level. (6, 6T+0S)

178 CARPENTRY APPRENTICE LEVEL 4B This course covers advanced wall systems, advanced stair systems, introduction to light equipment, introductory skills for the Crew Leader, with welding and metal buildings as elective modules. This is the last in the NCCER four-year Carpentry Apprenticeship program. Prerequisite is CARP 177. This course is the seventh course in the NCCER program. (6, 6T+0S)

CHEMISTRY (CHEM)

110 INTRODUCTION TO CHEMISTRY Introductory course to prepare students with no high school chemistry for college level chemistry courses and to familiarize students in health occupations programs with basic concepts of inorganic, organic, and biochemistry in physiology and medicine. Prerequisite: MATH 102N and ENG 109N; Co-requisite: CHEM 110L. (3, 3T+0L)

110L INTRODUCTION TO CHEMISTRY LAB Co-requisite: CHEM 110. (1, 0T+1L)

121 GENERAL CHEMISTRY I Chemical and physical behavior of matter. Prerequisite: MATH 130, high school chemistry, or an ACT score of 19 or higher in Natural Science, and ENG 111. Co-requisite: CHEM 121L. (3, 3T+0L)

121L GENERAL CHEMISTRY I LAB Co-requisite: CHEM 121. (1, 0T+1L)

122 GENERAL CHEMISTRY II A continuation of CHEM 121. Prerequisite: CHEM 121L. Co-requisite: CHEM 122L. (3, 3T+0L)

122L GENERAL CHEMISTRY II LAB Co-requisite: CHEM 122. (1, 0T+1L)

210 INTEGRATED ORGANIC & BIOCHEMISTRY Introductory course designed to meet the entrance requirements in chemistry for students in allied-health fields in which some knowledge of organic chemistry and biochemistry is needed. Prerequisite: CHEM 110/L or CHEM 121/L; Co-requisite: CHEM 210L. (3, 3T+0L)

210L INTEGRATED ORGANIC & BIOCHEMISTRY LAB This course provides experiences with the physical properties and laboratory synthesis of organic compounds. Includes exercises in the preparation, separation, isolation, and characterization of biologically derived molecules. Co-requisite: CHEM 210. (1, 0T+1L)
CHEMISTRY

221 QUANTITATIVE & ANALYTICAL CHEMISTRY Basic theory and techniques of quantitative chemical analysis. Concepts of sampling and separation techniques with an emphasis on precision measurements and statistical analysis in volumetric and gravimetric procedures. Co-requisite: CHEM 221L. Prerequisites: CHEM 122L and MATH 145. (Spring) (2, 2T+0L)

221L QUANTITATIVE & ANALYTICAL CHEMISTRY LAB Laboratory experiments involving instrumentation emphasis on sampling, statistical, measurement, and separation techniques. You will focus on proper documentation and data analysis. Co-requisite: CHEM 221. Prerequisites: CHEM 121 and 121L. (Spring) (2, 0T+2L)

260 STANDARD LABORATORY PROTOCOLS Presents the theory and practice of basic laboratory protocols and analyses as performed in research and/or industrial settings. Emphasizes safety, detailed and accurate record keeping, data handling, and report writing. Beneficial to all majors in Biology, Materials Science, Environmental Management, and other applied science curricula. Prerequisites: CHEM 122 and 122L. (4, 4T+0L)

290 UNDERGRADUATE RESEARCH EXPERIENCE I You will learn experimental design, library and Internet information searches, research methodology, laboratory safety, and how to maintain laboratory notes while interacting with peers and faculty. You prepare a technical report, poster, or presentation on your activities. Research questions may vary. Graded CR/NC. Prerequisites: CHEM 121/L and 122/L, and permission of instructor. (3, 3T+0L)

301 ORGANIC CHEMISTRY I The study of the compounds of carbon and the relationships among molecular structure, chemical reactivity, physical properties, and spectral features, approached by way of the functional group classification of organic compounds. Prerequisite: CHEM 122/L; Co-requisite: CHEM 301L. (Fall) (3, 3T+0L)

301L ORGANIC CHEMISTRY I LAB Introduction to the techniques involved in the preparation, isolation, purification, and characterization of organic compounds. Co-requisite: CHEM 301. (Fall) (1, 0T+1L)

302 ORGANIC CHEMISTRY II The study of the compounds of carbon and the relationships among molecular structure, chemical reactivity, physical properties, and spectral features, approached by way of the functional group classification of organic compounds. Prerequisite: CHEM 301/L; Co-requisite: CHEM 302L (Spring). (3, 3T+0L)

302L ORGANIC CHEMISTRY II LAB Application of more advanced techniques in the preparation, isolation, purification, and characterization of organ compounds, with special emphasis on the use of spectroscopic techniques to elucidate structure. Co-requisite: CHEM 302. (Spring) (1, 0T+1L)

311 PHYSICAL CHEMISTRY You will study the quantitative principles of chemistry, gases, thermodynamics, quantum systems, equilibrium, kinetics, and spectroscopy. Prerequisites: CHEM 122/L, 221/L, MATH 163, and PHYS 122/L; Co-requisite: CHEM 311. (3, 3T+0L)

311L PHYSICAL CHEMISTRY LAB You will engage in laboratory experiences supportive of CHEM 311. Co-requisite: CHEM 311. (1, 0T+1L)

341 SURVEY OF BIOCHEMISTRY Covers the basic principles of biochemistry, including properties of nucleic acids, proteins, carbohydrates, fats, and lipids, while also introducing the chemistry of metabolic pathways, pH regulation, membranes and receptors, cell organization, enzymes kinetics and mechanisms, hormonal regulation, energy transformations, chemical reactions in living cells, ATP synthesis and use, and biochemical genetics. Prerequisite: CHEM 210/L or 301/L. (Spring) (3, 3T+0L)
421  BIOCHEMISTRY  You will study the fundamentals of general and organic chemistry to understand the complex array of structures and chemical processes that occur in living organisms.  Prerequisite: CHEM 301/L, 302/L, and 311/L; Co-requisite: CHEM 421L.  (3, 3T+0L)

421L  BIOCHEMISTRY LAB  You will engage in laboratory experiences supportive of CHEM 421.  Co-requisite: CHEM 421.  (1, 0T+1L)

CIVIL ENGINEERING (CE)

160L  GENERAL ENGINEERING DESIGN I  Introduces engineering graphics, the design process, computer-aided design, engineering ethics, design economics, and project management. [Cross-listed with ME 160L]  Prerequisite: MATH 160.  (3, 2T+1L)

202  ENGINEERING STATICS  You will study force analysis of particles and rigid bodies in two and three dimensions using vector algebra as an analytical tool; centroids, distributed loads, trusses, frames, friction. [Cross-listed with ME 202]  Prerequisites: PHYS 215/L and MATH 163.  (Fall)  (3, 3T+0L)

302  MECHANICS OF MATERIALS  You will study stresses and strains in members subjected to tension, compression, torsion, shear and flexure; combined and principal stresses; Mohr’s circle construction; buckling, introduction to statistically indeterminate members. [Cross-listed with ME 302]  Prerequisites: PHYS 216/L and MATH 163.  (Fall)  (3, 3T+0L)

357  MECHANICAL VIBRATIONS  You will study free and forced vibrations of one and two degrees of freedom systems for both steady state and transient forcing, and vibrations of selected continuous systems and balancing. [Cross-listed with ME 357]  Prerequisites: ME 306 and MATH 316.  (Fall)  (3, 3T+0L)

COMMUNICATIONS (COMM)

111  BUSINESS AND PROFESSIONAL COMMUNICATIONS STUDIES  Practical introduction to the principles and skills needed to communicate effectively for on-the-job success in business and other professional settings. Emphasis is on developing, organizing, and supporting ideas at interpersonal business encounters, groups, and meetings, and platform presentations.  Prerequisite: ENG 111.  (3, 3T+0S)

300  PROFESSIONAL COMMUNICATIONS  You will be exposed to the wide range of communications required for IT professionals, learning proven techniques to sharpen writing, speaking, and active listening skills.  Prerequisites: ENG 111 and 116.  (3, 3T+0S)

COMPUTER SCIENCE (CS)

Unless otherwise noted, these courses are offered each term.

103  INTRODUCTION TO COMPUTER APPLICATIONS I  An introduction to software programs commonly used for personal or professional use. May be repeated for credit.  (1, 1T+0S)

104  INTRODUCTION TO COMPUTER APPLICATIONS II  An introduction to software programs commonly used for personal or professional use. May be repeated for credit.  (1, 1T+0S)

105  INTRODUCTION TO DATABASES  Through an introduction to database software, you will study basic database table, query, form, and report creation and management.  Prerequisite: BCIS 102 or IT 101.  (3, 3T+0S)
106 INTRODUCTION TO THE INTERNET Fundamentals of the Internet, including the use of browsers for searches, menus, setting up preferences, bookmarks, and downloading files from the World Wide Web network. Introduction to how to prepare a home-page and linking to other existing web-pages. Also includes an introduction to e-mail. (1, 1T+0S)

132 INTRODUCTION TO PROGRAMMING You will use a modern high-level programming language to learn the basic concepts and practices of procedural and object-oriented programming. This course is suitable for non-CS majors or those seeking an introduction to CS. Prerequisite: MATH 102N or MATH 103N (3, 2T+1S)

142 COMPUTER SCIENCE I Through program analysis and design using a high-level programming language, you will study the fundamentals of program design, basic programming techniques, and concepts of object-oriented programming. Prerequisites: CS 132 or IT 110, and MATH 130. (3, 2T+1S)

167 C PROGRAMMING You will learn programming in the C Language. Prerequisite: CS 132. (Fall) (3, 2T+1S)

170 MATHEMATICS FOR COMPUTER SCIENCE You will study discrete mathematics: the logic of predicates, compound and quantified statements, application to digital logic circuits and computer arithmetic, programming logic, elementary number theory, and methods of proof, mathematical induction, algorithms, and combinatorial reasoning. Prerequisite: MATH 130. (Spring) (3, 3T+0S)

200 C++ PROGRAMMING Covers programming using the C++ language, with emphasis on problem solving. Prerequisite: CS 142. (Spring) (3, 2T+1S)

201 MATHEMATICAL FOUNDATIONS OF COMPUTER SCIENCE You will study the formal mathematical concepts of computer science, including such topics as elementary logic, induction, algorithmic processes, graph theory, and models of computation. (Fall) Prerequisite: EECE 152L. (3, 3T+0S)

210 DATABASE DESIGN AND PROGRAMMING Database theory, design, and programming using Structured Query Language (SQL). Covers database definition and normalization, programming using the industry standard SQL, and server operational considerations. Prerequisites: CS 105 and 132. (Fall) (3, 2T+1S)

220 ADVANCED JAVA A graphical approach to object-oriented programming, continuing the exploration of classes, methods, encapsulation, and inheritance introduced in CS 142. Also covers event-driven programming. Prerequisites: CS 142 and MATH 130. (Offered as needed) (3, 2T+1S)

238L COMPUTER LOGIC DESIGN You will study binary number systems; Boolean logic: combinatorial, sequential, and register transfer logic; VHDL: arithmetic/logic unit; memories; computer organization; input-output and microprocessors. Prerequisite: ENGR 120 or MATH 150 and EECE 152L. [Cross-listed with EECE 238L] (Spring) (4, 3T+1S)

241 DATA ORGANIZATION You will study data representation, storage and manipulation; memory organization of data storage and its relation to computation and efficiency. Topics include linked versus contiguous implementation, memory management, the use of indices and pointers, and an introduction to issues raised by the memory hierarchy. Prerequisite: EECE 152L. (Fall) (3, 3T+0L)

242 COMPUTER SCIENCE II A continuation of CS 142, this course introduces algorithms and data structures, including trees, stacks, queues, and linked lists. Also covers basic operations using these structures, such as sorting and searching. Prerequisites: CS 142 and CS 170. (Spring) (3, 2T+1S)
280 GUI/WINDOWS PROGRAMMING Introduction to event-driven programming and graphical user interfaces (GUI) on a Windows platform. The class is taught using TCL/Tk or an object-oriented approach using a development environment, such as Visual Studio with VisualBasic. Prerequisite: CS 132. (Spring) (3, 2T+1S)

295 COMPUTER SCIENCE PROJECT Individual project using tools and skills developed in previous courses. You will define your own project and its goals. May be repeated for credit to a maximum of 3 credits. Prerequisite: Three 200-level CS/CT courses, one of which may be taken concurrently. (3, 3T+0S)

351 DESIGN OF LARGE PROGRAMS A project course on object-oriented analysis, design, and programming; programming language issues, programming tools and other computer science concepts for the project, such as discrete event simulation and parsing. Prerequisites: EECE 231 and CS 241. (Spring) (3, 3T+0L)

352L SOFTWARE DEVELOPMENT A project course in which you will study the planning, design, and implementation of a software engineering assignment; emphasis is on the use of project tools for integrating software, tracking changes, and reporting status. Prerequisite: EECE 231. (Fall) (3, 2T+1L)

374 REAL TIME COMPUTING You will study the analysis and design of computational programs requiring real-time input and output; layout of arithmetic operations, memory management, and computational sequencing. You will practice on real-time processors, such as the TMS320 series. Prerequisites: EECE 231 and 238L. (Fall) (3, 3T+0L)

CONSTRUCTION TRADES (CONS)

150 CONTRACTOR LICENSING REQUIREMENTS Licensing Act and requirements of the New Mexico Construction Industries Division; registering a business with the state and federal governments; financial responsibility determinants; bonding; insurance; workmen’s compensation requirements; preparation for the state business and law examinations for contractors pursuing EE-98, MM-98, GB-98, and sub-categories. (2, 2T+0)

151 INSPECTION PROCESS Permit requirements, code enforcement, inspections, certificates of approval, and fees. (1, 1T+0S)


153 CONSTRUCTION CONTRACTOR TAXATION Federal and New Mexico tax laws, employee withholding, unemployment insurance, FICA, NM Gross Receipts Tax, Calendar dates for filing CRS-1, 940, 941, NM U/I, W-4, W-3, 1099, 10096, and others. You will receive ample practice in filling out forms and using tables, formulas, and software to calculate tax liabilities. Covers the differences in proprietorship, partnership, and corporate requirements and reports; records keeping and bookkeeping requirements. (3, 3T+0S)

155 CONSTRUCTION MATH & BLUEPRINT READING Lumber and materials dimensions; scaling from plans; materials take-off; estimating costs; interpreting construction drawings, specifications, and blueprints; floor plans, elevations, sections, symbols, and notations. (3, 3T+0S)

156 INTERNATIONAL CONSTRUCTION CODE You will learn the use and applications of the International Construction Code (ICC) and the International Residential Code
Cosmetology (COSM), with special emphasis on residential regulations. The entire state of New Mexico is covered by the ICC and IRC, except certain jurisdictions which use other codes in whole or in part, or may have addenda to these codes. (2, 2T+0S)

157 Site Development and Layout  Planning the layout of a site with regard for codes, covenants, planning and zoning regulations, utility easements, and other requirements; locating homes, outbuildings, wells, septic systems, utilities, and roads using the instruments and measuring devices normally associated with site preparation. Classes will be conducted on-and-off campus. (2, 1T+1S)

158 Foundation Theory and Construction  Site layout; footing and stem wall construction; flat concrete work; insulation systems; monolithic floor/foundations, foam form, and other alternative systems. Provides theory, laboratory instruction, and hands-on activities. Classes will be conducted on-and-off campus. (2, 1T+1S)

159 Masonry Theory and Construction  Theory and practice of concrete, stucco, stone, brick, and block masonry techniques. Classes will be conducted on-and-off campus. (3, 1T+2S)

206 Building Construction  Introduces you to building construction, including building codes, construction sequencing, structural systems, construction methods, and estimating. Cross-listed as DRFT 206. Prerequisites: MATH 100N and ENG 108N. (3, 3T+0S)

207 Construction Materials and Estimating  Introduces you to building materials and the preparation of a building project estimate, including computing and compiling materials and labor costs from working drawings using various techniques common in building construction and in accordance with standard specifications and estimating formats. You will be introduced to the CSI System, along with the use of spreadsheets and estimating software. Prerequisites: MATH 100N, ENG 108N, and BCIS 102, or permission of instructor. (3, 3T+0S)

Cosmetology (COSM)

Prerequisite for any Cosmetology course is completion of ENG 108N or adequate scores on the Course Placement Evaluation instrument.

110 Cosmetology I  This course presents an integrated study and overview of the demands of the profession and the self discipline needed to succeed in the field of cosmetology. It includes concepts related to professional image, work ethic, professional standards, communication skills, infection control, and industry history. As this course requires both theory and lab, you will perform practical skills on mannequins. The course introduces you to state-required study in theory, facials, hair coloring, chemical texturizing, haircutting, shampooing, hairstyling, manicuring, and pedicuring. (17, 7T+10S)

120 Cosmetology II  This course is a continuation of Cosmetology I. You will perform practical skills on mannequins, while continuing your study in theory, facials, hair coloring, chemical texturizing, haircutting, shampooing, hairstyling, manicuring, and pedicuring. Prerequisite: COSM 110. (16, 5T+11S)

210 Cosmetology III  This course is a continuation of Cosmetology II. You will perform practical skills on mannequins and clients, while continuing your study in theory, salon business, facials, hair coloring, chemical texturizing, haircutting, shampooing, hairstyling, manicuring and pedicuring. Prerequisite: COSM 120. (15, 3T+12S)

220 Cosmetology IV  This course is a continuation of Cosmetology III. You will perform practical skills on clients, while continuing your study in theory, salon business,
facials, hair coloring, chemical texturizing, haircutting, shampooing, hairstyling, and shaving. You will study State Board Regulations and prepare for state and national exams. **Prerequisite:** COSM 120. (15, 3T+12S)

### 222 COSMETOLOGY DIRECTED STUDY
This course is an independent clinical practice of all skills and knowledge learned in related courses. It is designed for students to make-up missed state-required clock hours. It may be repeated once. **Prerequisite:** COSM 120 or 210 or 220. (6, 0T+6S)

### 230 COSMETOLOGY/BARBER REFRESHER
This course is designed for the cosmetology or barber whose license has expired. You will complete a review of state laws and regulations, take mini-board exams (state laws and practical), and review all required cosmetology/barber course work. **Prerequisite:** proof of expired cosmetology/barber license. (Summer only) (10, 8T+2S)

### CRIMINAL JUSTICE (CJ)

**Note:** Each course in this program has a prerequisite of ENG 109N or an adequate score on the Course Placement Evaluation.

#### 111 INTRODUCTION TO CRIMINAL JUSTICE
You will study the agencies and processes involved in the criminal justice system, including the legislature, police, prosecutor, courts, corrections, industrial security, personnel security, and loss prevention. (4, 4T+0S)

#### 132 INTRODUCTION TO CRIMINOLOGY
You will explore the nature and extent of crime through an interdisciplinary perspective; theories focus on attempt to explain criminality and delinquency. (3, 3T+0S)

#### 201 CRIMINAL LAW
You will study the legal definitions of crime and defense; purposes and functions of substantive criminal law; historical foundations; limits of the criminal law; focused approach through case study. (3, 3T+0S)

#### 202 COURTS AND CRIMINAL JUSTICE
You will acquire a basic knowledge of the history, organization, and dynamics of the different levels of court systems and their relation to the other entities that include the criminal justice system. You will examine the importance and impact of the courts upon society. (3, 3T+0S)

#### 211 INTRODUCTION TO LAW ENFORCEMENT
You will study the historical settings of law enforcement; police role and career; police discretion; values and culture; organization and control. (3, 3T+0S)

#### 221 CRIMINAL JUSTICE COMMUNITY RELATIONS
You will study problems with citizen relations; treatment of victims, witnesses, and jurors; citizen involvement in the criminal justice process; community resources related to criminal justice programming. (3, 3T+0S)

#### 224 INTRODUCTION TO CORRECTIONS
You will study the history, philosophy, legal issues, research, and models of the correction system and the impact of the system on prisoners and society, including the rights of the convicted criminal, the corrections process, the correctional system, community corrections, and other alternative sentencing programs. (3, 3T+0S)

#### 228 FORENSIC INVESTIGATIONS
You will study the fundamentals of crime scenes and criminal investigations, with an emphasis on procedural techniques and technological advancements and how these relate to the collection and documentation of the physical evidence present. Places emphasis on various types of crimes and physical evidence, and how to better assure a more competent successful case closure and courtroom presentation. (3, 3T+0S)
**231  CRIMINAL INVESTIGATIONS** You will study the fundamentals of investigations: crime scene, search and recording; collection and preservation of physical evidence, modus operandi, scientific aids, sources of information, interviewing and interrogation, follow-up and case preparation, legal search, types and degrees of evidence, and rules governing admissibility. (3, 3T+0S)

**233  JUVENILE JUSTICE PROCEDURES** You will explore the causes of juvenile delinquency and philosophy of the juvenile court. In depth instruction in practice of the Juvenile Court, police handling of juveniles, detention and processing, juvenile case disposition, and major juvenile crime problems. (3, 3T+0S)

**251  LAW ENFORCEMENT MANAGEMENT** You will study problems in organizational allocation of resources, information systems, determinants of police policy; principles of organizational functions, structures, processes, and behaviors. (3, 3T+0S)

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## CHICANA/O STUDIES (CHIC)

**110  INTRODUCTION TO CHICANA/O STUDIES** This course is an introductory survey of the field of Chicana/o Studies and the factors that influence Chicana/o culture. Emphasis is placed on the historical development of the Chicana/o people, including Mesoamerican roots, cultural identification, political activism and contemporary roles and influence in United States culture, society and economy. **Prerequisite:** ENG 109N or permission of the Instructor. (3, 3T+0S)

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## DANCE (DANC)

Any DANC activity course may be used to satisfy graduation requirements for Health, Physical Education, and Recreation.

All studio courses may be repeated without penalty; however, no course may be counted more than once toward graduation requirements.

**110  FITNESS FOR DANCERS** This course is an aerobic dance class that integrates stretching, conditioning, and various types of dance styles, that may include Zumba®, into an exercise form for optimal performance for dancers. (2, 1T+1S)

**126  MODERN DANCE** Fundamentals of movement and its application to aesthetic communication. (2, 1T+1S)

**139  FOLKLORICO DANCE I** You will study the historical and cultural roots, traditions, and basic techniques and styles of various regional dances: Mexican Folk, Spanish Colonial, and contemporary dances of the Chicano/Latino experience. This course will challenge you to expand your cultural understanding through movement. (2, 1T+1S)

**149  BALLET I** Fundamental work in vocabulary, techniques, and styles of ballet for the adult beginner. (2, 1T+1S)

**150  HIP-HOP AND JAZZ I** You will explore the music and culture of Hip-Hop, focusing on dance techniques and styles of African dance, jazz, and hip-hop. As you learn the hip-hop dance movement, you will strengthen your ability to choreograph and execute a group performance. (2, 1T+1S)

**169  FLAMENCO DANCE I** Develops the fundamentals of techniques and styles of Flamenco Dancing. (2, 1T+1S)

**172  FLAMENCO TECHNIQUE I** You will focus on flamenco rhythm, technique, and the structure of flamenco dance. Includes an introduction to the rich culture of flamenco. (3, 1T+2S)
182 SALSA DANCE I A vigorous Latin dance style performed to music blending various Latin rhythms. Students will gain knowledge or basic dance fundamentals and techniques, as well as discuss the history of the salsa dance style. (2, 1T+1S)

211 CHOREOGRAPHY You will learn how to select dance materials and sound accompaniment for solo and group compositions. Prerequisite: DANC 212 (3, 1T+2S)

212 DANCE IMPROVISATION You will discover the authentic self in movement; developing skills in group interaction, including the first steps in the use of structure and form in dance composition. Prerequisite: DANC 149 (2, 1T+1S)

214 KINESIOLOGY Practical applications of concepts and theories of kinesiology, in which you will cover the pathomechanics of injury, injury management, injury prevention, and the kinesiology of ballet, flamenco, and modern dance. (3, 1T+2S)

222 FLAMENCO RHYTHMIC FUNDAMENTALS You will be introduced to rhythms and meters common in flamenco dance. Includes dancing, percussion playing, singing, and recognition of audio rhythms. (2, 1T+1S)

239 FOLKLORICO DANCE II In this continuation of DANC 139, you will develop more advanced techniques and styles of Folklorico dancing. Prerequisite: DANC 139. (2, 1T+1S)

240 DANCE APPRECIATION You will study forms of dance technique and performance while also exploring dance rituals within different cultures. (3, 3+0S)

245 DANCE HISTORY A historical survey of the origins, growth and development of theatrical dance. The course will focus on the forces, processes and personalities that influenced dance from ancient societies to the present. Prerequisite: ENG 109N or adequate score on the Course Placement Evaluation. (3,3T).

249 BALLET II This course is a continuation of Ballet I introducing more advanced vocabulary, techniques and styles of ballet for the intermediate level student. Prerequisite: DANC 149. (2, 1T+1S).

250 HIP-HOP AND JAZZ II In this continuation of DANC 150, you will be exposed to more advanced dance movements and choreography for group performances. Prerequisite: DANC 150. (2, 1T+1S)

269 FLAMENCO DANCE II Continues DANC 169, adding the development of techniques and styles at the intermediate level. Prerequisite: DANC 169. (2, 1T+1S)

282 SALSA DANCE II A continuation of Salsa Dance I, introducing more advanced techniques of Salsa dance for the intermediate level student. Prerequisite: DANC 182 (2,1T+1S).

292 REPERTORY: FOLKLORICO DANCE Professional training in the learning and performing of a new or staged choreography. (1, 0T+1S)

293 REPERTORY: FLAMENCO DANCE Professional training in the learning and performance of new or staged choreography in flamenco dance. (1, 0T+1S)

295 DANCE PORTFOLIO A course to assist dance students in creating a portfolio that documents their accomplishments in their dance area. Instruction will focus on the content, creation and presentation of a dance portfolio. Prerequisite: DANCE 292 (3, 2T+1S).

DRAFTING (DRFT)

100 COMPUTER AIDED DRAFTING I You will develop basic drafting skills using computer-aided drafting software (AutoCAD), including lettering, scales, line types, line
Drafting

weight, 2- and 3-view orthographic projection, dimensioning, and sectioning. (4, 3T+1S)

101 RESIDENTIAL CAD I Introduction to residential computer-aided drafting, emphasizing the preparation of residential working drawings using AutoCAD. Prerequisite: DRFT 100. (4, 1T+3S)

102 MECHANICAL ENGINEERING CAD I Introduction to engineering graphics using AutoCAD. Includes 2 and 3 view orthographic projection, geometric construction and dimensioning. Prerequisites: DRFT 100. (4, 1T+3S)

103 SURVEYING AND CAD MAPPING I Introduces you to surveying using the transit, theodolite, level, etc. You will then convert the data you collected in the field to site plans/maps using AutoCad. Prerequisites: DRFT 100, MATH 100N, and ENG 108N. (4, 1T+3S)

107 GLOBAL POSITIONING SYSTEM GPS basics, including use of receivers, data collection, and differential correction. Prerequisite: Familiarity with mapping. (1, 1T-0S)

108 AUTOCAD BASICS I Basics of computer aided drafting using AutoCAD software. (1, 1T+0S)

109 ARCVIEW GIS BASICS I Basics of map production using ArcView GIS software. Prerequisite: must be computer literate. (1, 1T+0S)

110 GIS/GPS Introduction to geographical information systems (GIS) using ArcView and the Global Positioning System (GPS) using hand-held GPS receivers. (3, 2T+1S)

111 COMMERCIAL BUILDING CAD Introduction to commercial building computer-aided drafting, emphasizing the preparation of working drawings using AutoCAD and Architectural Desktop. Prerequisites: DRFT 101, MATH 100N, and ENG 108N. (4, 1T+3S)

112 MECHANICAL ENGINEERING CAD II Continues DRFT 102 using AutoCad or Pro-Engineering, including sectional, auxiliary, and isometric/3D views, and advanced dimensioning. Prerequisites: DRFT 102, MATH 100N, and ENG 108N. (4, 1T+3S)

113 SURVEYING AND CAD MAPPING II Continues DRFT 103 using more advanced surveying and CAD mapping. Prerequisites: DRFT 103 and MATH 102N or MATH 103N. (4, 1T+3S)

118 AUTOCAD BASICS II A continuation of DRFT 108 AutoCad Basics I. Prerequisite: DRFT 108. (1, 1T+0S)

119 ARCVIEW GIS BASICS II Continuation of DRFT 109, ArcVIEW GIS Basics I, focusing on more advanced GIS map production. Prerequisite: DRFT 109 or permission of instructor. (1, 1T+0S)

122 GEOMETRIC DIMENSIONING AND TOLERANCING Principles and practices of geometric dimensioning and tolerancing. Prerequisite: DRFT 102 or permission of instructor. (3, 3T+0S)

123 SURVEYING BASICS Basics of surveying theory and collection of field data using levels, transits and theodolite. (1, 1T+0S)

126 AUTODESK LAND DESKTOP BASICS I You will study the basics of computer-aided drafting using AutoCAD software. (1, 1T+0S)

132 PRINTED CIRCUIT BOARD DESIGN Introduction to designing printed circuit boards, including the schematics, logic diagrams, and board/component drawing needed to manufacture single- and double-sided printed circuit boards. (4, 2T+2S)

199 JOB SKILLS You will develop resumes, portfolios, job search strategies, and interviewing techniques. Prerequisite: ENG 109N. (1, 1T+0S)
EARLY CHILDHOOD EDUCATION

201  RESIDENTIAL CAD II  You will design a residence using AutoCAD and Architectural Desktop, with emphasis on the preparation of the design and working drawings. Prerequisites: DRFT 101. (4, 1T+3S)

202  MECHANICAL ENGINEERING CAD III  You will design and draft, using AutoCAD or ProEngineering, interrelated parts that make up an assembly of prototype product. Prerequisites: DRFT 112. (4, 1T+3S)

203  CIVIL ENGINEERING CAD  You will draft various civil engineering highway projects, including plan and profile views, cross section and detailing. Prerequisite: DRFT 113. (4, 1T+3S)

209  COMPUTER-AIDED DRAFTING II  Introduces you to 3D Modeling and utilization of the more advanced features of the AutoCAD software. (4, 1T+3S)

215  COMPUTER-AIDED MACHINING I  Introduces you to CAM using the MasterCAM software. Includes part geometry, toolpath creation, and post processing to a CNC mill or lathe. Prerequisite: DRFT 100. (3, 2T+1S)

238  3-D MECHANICAL MODELING  You will develop mechanical parts, assemblies and working drawings, using 3-D models created with a 3D parametric modeling, such ProEngineering software. Prerequisites: DRFT 100 or MT 130. (2, 2T+0S)

299  COOPERATIVE WORK EXPERIENCE  You will be employed in an approved work-related experience following individualized on-the-job learning objectives. 48 work hours are required to earn one semester hour of credit. You will responsible for finding employment and you will be evaluated jointly by program faculty and employer on a CR/NC basis. Prerequisite: permission of instructor. (2-5)

EARLY CHILDHOOD EDUCATION (ECE)

Note: Unless shown otherwise, each course in this department has a prerequisite of ENG 109N.

202  CHILD GROWTH, DEVELOPMENT AND LEARNING  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. (Fall) (3, 3T+0S)

218  HEALTH, SAFETY, AND NUTRITION  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. (Summer) (2, 2T+0S)

220  PROFESSIONALISM  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. (Spring) (2, 2T+0S)

222  INTRODUCTION TO LANGUAGE, LITERACY AND READING  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. (Summer) (3, 3T+0S)

225 CURRICULUM DEVELOPMENT THROUGH PLAY-BIRTH THROUGH AGE 4 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 IFSP is included. Curriculum development is all areas, including literacy, numeracy, the arts, health, science, social skills, and adaptive learning for children, birth through age four, is emphasized. Co-requisite: ECE 238 (Fall). (3, 3T+0S)

226 FAMILY AND COMMUNITY COLLABORATION This 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. (Fall) (3, 3T+0S)

238 PRACTICUM-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, special skills, and adaptive learning for children birth through age four, is emphasized. Co-requisite: ECE 224 (Fall). (2, 2T+0S)

254 CURRICULUM DEVELOPMENT AND IMPLEMENTATION AGE 3 TO GRADE 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 development of IEPs is included. Co-requisite: ECE 264 (Spring) (3,3T+0S).

264 PRACTICUM-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. Co-requisite: ECE 254 (Spring) (2,2T+0S)

285 CHILD GUIDANCE This course explores various theories of child guidance and the practical applications of each. It provides developmentally appropriate methods for guiding young 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. (Spring) (3, 3T+0S)

295 ASSESSMENT OF CHILDREN AND EVALUATION OF PROGRAMS This basic course familiarizes students with a variety of culturally appropriate assessment methods and instruments, including systematic observation of typically and on-typically developing children. The course addresses the development and the 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. (Spring) (3, 3T+0S)

ECONOMICS (ECON)

200 MACROECONOMICS Introduction to the fundamental principles underlying the operation of a market economy on a global scale, mainly with problems of unemployment and inflation. Also discusses related problems of income redistribution and international trade and exchange rates, and economic growth and development. Prerequisite: ENG 109N. (3, 3T+0S)

201 MICROECONOMICS Focuses on the problems specific to a household, firm, or industry, rather than those of a national or worldwide scale. Topics of concern are household and firm behavior, demand and supply, market structures, labor, and capital. Concentrates on the economics of the consumer, the business firm, the distribution of income, and the efficient allocation of resources. Prerequisite: ENG 109N. (3, 3T+0S)

EDUCATION (ED)

201 FOUNDATIONS OF EDUCATION This course introduces you to the basics of the teaching profession. It includes societal expectations of teachers, social problems which impact students, essential knowledge needed for teaching, recent reforms in education, historical perspectives on education, the role of schools in today’s society, school governance, and the legal and ethical issues in education. Further, you will be expected to begin to articulate your philosophy of education. Prerequisites: ENG 111 (3, 3T+0S)

205L INTEGRATING TECHNOLOGY IN THE K-8 CLASSROOM This course provides an overview of technology as a way of enhancing instruction. You will use the Microsoft Office Suite and a variety of educational websites to become efficient in the classroom. You will create a portfolio that will include, but not be limited to, an e-lesson, presentation, newsletter, webpage, and grade book. (2, 1T+1S)

213 FIELD EXPERIENCE You will do initial observations of classroom environments and determinations of what classroom teacher do. You will participate in seminars and observe 45 hours of classroom instruction in the field. Prerequisite: ENG 111, or permission of instructor; Co-requisite: ED 201(1, 0T+1L)

220 EDUCATIONAL PSYCHOLOGY Introduces you to psychological principles as they apply to teaching and learning. You will examine the relationships between theory, research, and practice in learning, memory, child development, motivation, and educational assessment for the school setting. You will address cognitive, linguistic, affective, and social development, with particular attention to the K-8 learner. Emphasis is on the integration of theory and practice, with numerous classroom applications of psychological theories and principles. Prerequisites: ED 201 and PSY 105. (3, 3T+0S)
311 PRACTICUM I This course is designed to supplement ED 326. As assigned by the instructor, you will be engaged in specific responsibilities for 30-38 hours in field and/or lab experiences. **Prerequisite:** ED 201; **Co-requisite:** ED 326. (1, 0T+1S)

313 SCIENCE AND MATH FOR EDUCATORS I This course is aligned to the following concepts and processes: systems, order and organization, evidence, models and explanation; constancy, change, and measurement; evolution and equilibrium, form and function. You will be prepared to understand the development of scientific inquiry and scientific thinking in grades K-4 and to teach the National Science Education Standard A (Science as Inquiry), Standard B (Physical Science), Standard C (Life Science), Standard D (Earth and Space Science), Standard E (Science and Technology), Standard F (Science in Personal and Social Perspectives), and Standard G (History and Nature of Science). As assigned by your instructor, you will be engaged in specific responsibilities over a sustained period of time in field and/or lab practice. **Prerequisites:** ED 201 and MATH 130, and a 4-cr science course w/lab. (Fall) (3, 2T+1S)

322 MATH FOR EDUCATORS I This course is designed to prepare you to teach the National Council of Teachers of Mathematics Standard 1, K-8, Numbers and Operations, and Standard 2, K-8 Algebra, integrated with Standards 6, 7, 8, 9, and 10 Problem Solving, Reasoning and Proof, Communications, Connections, and Representations. You will be assessed based on performance measures designed to demonstrate mastery of mathematical concepts.). As assigned by your instructor, you will be engaged in specific responsibilities over a sustained period of time in field and/or lab practice. **Prerequisites:** ED 201 and Math 130. (Fall) (3, 2T+1S)

326 STRATEGIES FOR SUCCESSFUL CLASSROOMS You will develop a rationale and plan for creating classroom procedures, routines, and structures that lead to increased student learning. You will research and also be presented with learning theories and practices that result in the creation of learning environments which are safe physically and psychologically. You will understand the principles involved in motivating students and overcoming resistance to learning. **Prerequisite:** ED 201; **Co-requisite:** ED 311. (2, 2T+0S).

404 MUSIC AND ART ACROSS THE K-8 CURRICULUM You will learn how rhythm, color, design, texture, and elements of composition in various media can be used across the elementary curriculum to enhance learning and self-expression. You will correlate the application of theory with individual small and large group projects. (2, 2T+0S)

410 TEACHING AND DIAGNOSIS OF READING This course provides you with a conceptual framework for understanding the growth of language development throughout the elementary years. You will be introduced to instructional strategies to build reading, writing, and speaking abilities. The course will address literacy differences through a literature-based approach to instruction, focusing on cognitive, affective, social, and cultural factors that created differences in literacy abilities. State standards and benchmarks are incorporated into this course. You will be required to do field work. **Prerequisite:** ED 201 and Passing NMTA. (3, 3T+0S) [11/14/07]

411 PRACTICUM II Designed to supplement the Teaching and Diagnosis of Reading (ED 470). As assigned by the instructor, you will be engaged in specific responsibilities for 30-48 hours in field and/or lab experiences. **Co-requisite:** ED 410. (1, 0T+1S)

420 CREATIVE MOVEMENT FOR THE CLASSROOM You will understand and appreciate the natural tendency of the human body to express feelings, thoughts, and sensations through moving and making sound. Creative Movement as a discipline encourages exploration and discovery of this natural movement impulse. Through this, you will
develop learning skills, social skills, self-esteem, and self-expression leading to improved problem solving on all levels. You will correlate course objectives to individual and to small and large group activities. (2, 2T+0S)

**422 MATH FOR EDUCATORS II** This course is designed to prepare you to teach the National Council of Teachers of Mathematics Standard 3, K-8, Geometry, and Standard 4, K-8, Measurement. You will also address NCTM Standard 5, K-8, Data Analysis and Probability, integrated with NM Standards 6, 7, 8, 9, and 10. Problem Solving, Reasoning and Proof, Communications, Connections and Representations. You will be assessed based on performance measures designed to demonstrate mastery of mathematical concepts. **Prerequisite:** ED 201. (Spring) (3, 2T+1S)

**423 SCIENCE AND MATH FOR EDUCATORS II** This course is aligned to the following concepts and processes: systems, order and organization, evidence, models and explanation; constancy, change, and measurement; evolution and equilibrium, form and function. You will be prepared to understand the development of scientific inquiry and scientific thinking in grades 5-8, and to teach the National Science Education Standard A (Science as Inquiry), Standard B (Physical Science), Standard C (Life Science), Standard D (Earth and Space Science), Standard E (Science and Technology), Standard F (Science in Personal and Social Perspectives), and Standard G (History and Nature of Science). You will also be engaged in specific responsibilities for 30-48 hours in field and/or lab experiences. **Prerequisite:** ED 313. (Spring) (3, 2T+1S)

**450 PEDAGOGY AND LEARNING (WIC)** In this course, you will review the social, emotional, physical, and cognitive development of children from birth through adolescence, and it critically examines researched methods and theories, enabling you to become an effective practitioner. You will also explore brain-based learning, multi-sensory instruction, developmentally appropriate practice, multiple intelligences, and learning style. **Prerequisite:** ED 201. (3, 3T+0S)

**460 READING AND WRITING ACROSS THE CURRICULUM (ELEM.)** This course provides you with an overview of literacy and language development, and focuses on the development and implementation of an integrated curriculum approach at the elementary level. You will see how the emphasis of the integration of state standards and benchmarks is through a literary approach. (3, 3T+0S)

**475 CURRICULUM METHODS AND MATERIALS FOR SPECIAL EDUCATION** You will focus on teacher knowledge and application skills in teaching curricula aligned with state content standards and benchmarks. You will explore areas of individualized modifications and/or accommodations when the general education curriculum is not appropriate. You will address instructional strategies in meeting the needs of the special learner with transition as a major component, with emphasis on the application of technology to support teaching and learning. You will address and integrate the Individual Education Plan (IEP) throughout the learning process. **Prerequisite:** ED 401 AND 450, and passing NMTA. (Spring) (3, 3T+0S).

**479 STUDENT TEACHING** This is a full-time assignment during the semester, in conjunction with ED 480 (Student Teaching Seminar). You will be engaged in a minimum of 14 weeks and 420 hours of student teaching. You will follow the daily schedule of the assigned grade, assume regular faculty and out-of-classroom duties, participate in faculty meetings, PTA/PTO meetings, and other appropriate school-community activities. Your final placement in a school is decided by the Education Department, contingent upon your being acceptable to the school in which you will do your teaching. You must have already passed the New Mexico Content Knowledge Assessment of Elementary Education examination (NMTC and NMCK); **Co-requisite:** ED 480. (9, 0T+9L)
480 STUDENT TEACHING SEMINAR  This course provides you interaction with guided
discussion on reflections of the student teaching experience. Supplemental requirements
include outside readings based upon educational research and corresponding reflective
papers. Prerequisite: Department Permission. Co-requisite: ED 479. (1, 1T+0S)

495 ASSESSMENT AND EVALUATION OF STUDENT LEARNING  Explores the con-
struction and utilization of teacher-made and standardized tests. You will learn to gather
data, report, and communicate assessment results to students, parents, and adminis-
trators in a variety of ways in an effort to meet diverse student needs. You will become
familiar with the local school district’s testing program and will develop valid evaluation
tools to measure student outcomes. Prerequisite: passing NMTA. (3, 3T+0S)

EDUCATION—BILINGUAL EDUCATION (EDBE)

Prerequisite for these programs is at least 6 credit hours in Spanish as a Heritage Lan-
guage, or permission from the department.

301 FOUNDATIONS OF BILINGUAL/ESL EDUCATION  You will explore and review
the historical, legal, philosophical, theoretical paradigms of bilingual/ESL education. Prerequisite: SPAN 111 and 112; Co-requisite: EDBE 303. (Fall) (3, 3T+0L)

303 INTRODUCTION TO LINGUISTICS  You will be exposed to a broad overview of
the field of linguistics; principles and practices of linguistic analysis, sociolinguistics,
psycholinguistics, and educational linguistics. This course is oriented primarily to the
needs of present and prospective teachers. (Spring) Prerequisites: SPAN 111 and 112
Co-requisite: EDBE 301. (Fall) (3, 3T+0L)

305 SPANISH LITERACY FOR BILINGUAL EDUCATION  You will study the practical
implementation of Spanish literacy skills, including reading, writing, listening, and
speaking. This course will be taught in Spanish. (Summer) Prerequisites: EDBE 360 and
361; Co-requisite: EDBE 306. (3, 3T+0L)

306 SPANISH FOR THE BILINGUAL CLASSROOM  This course will present the Span-
ish language as it is applied to school community settings in addition to the classroom
setting. It will include both vernacular and formal language. Spanish will be the language
of instruction inclusive of student presentations and participation. (Summer) Prerequi-
sites: EDBE 360 and 361; Co-requisite: EDBE 305. (3, 3T+0L)

360 METHODS OF TEACHING BILINGUAL/ ESL  You will learn methodological
approaches for working with TESOL and bilingual population. Prerequisites: EDBE 301;
Co-requisite: EDBE 361. (Spring) (3, 3T+0L)

362 SECOND LANGUAGE ACQUISITION  You will study in-depth how first and second
languages are acquired. Prerequisite: EDBE 301 and 303; Co-requisite: EDBE 360. (Spring)
(3, 3T+0L)

481 LINGUISTICS & PHONETICS FOR THE BILINGUAL TEACHER  This course will
apply linguistics and phonetics to the knowledge and use of Spanish in order to provide
future teachers the ability to help students develop their language. It will cover the Span-
ish sound system, and include phonology, morphology, syntax, and dialectology of the
Spanish language. (Fall) Prerequisites: EDBE 305 and 306; Co-requisite: EDBE 482. (3,
3T+0L)

482 SPANISH LANGUAGE & FOLKLORE OF NEW MEXICO FOR THE BILINGUAL
TEACHER  This course will cover aspects of New Mexican language and folklore: lin-
guistic structure, regional and social variation, bilingualism, maintenance and shift, Eng-
lish influence, etc. It will also cover folkways of the Spanish-speaking people of New
EDUCATION—TEACHING ENGLISH AS A SECOND LANGUAGE/TESOL (EDTE)

Prerequisite for these programs is at least 6 credit hours in a language other than English, or permission from the department.

301 FOUNDATIONS OF BILINGUAL/ESL EDUCATION You will explore and review the historical, legal, philosophical, theoretical paradigms of bilingual/ESL education. (Fall) Prerequisite: 6 crs of a language other than English; Co-requisite: EDTE 303. (3, 3T+0L)

303 INTRODUCTION TO LINGUISTICS You will be exposed to a broad overview of the field of linguistics; principles and practices of linguistic analysis, sociolinguistics, psycholinguistics, and educational linguistics. This course is oriented primarily to the needs of present and prospective teachers. (Spring) Prerequisites: 6 credits of a language other than English; Co-requisite: EDTE 301. (Fall) (3, 3T+0L)

360 METHODS OF TEACHING BILINGUAL/ESL You will learn methodological approaches for working with TESOL and bilingual population. Prerequisite: EDTE 301; Co-requisite: EDTE 361. (Spring) (3, 3T+0L)

362 SECOND LANGUAGE ACQUISITION You will study in-depth how first and second languages are acquired. (Spring) Prerequisite: EDTE 301 and 303; Co-requisite: EDTE 360. (3, 3T+0L)

380 APPROACHES TO TEACHING ENGLISH-WRITING SKILLS TO ESL/BILINGUAL STUDENTS As an ESL and/or bilingual teacher or teacher candidate, you will develop the knowledge, experience, and skills you need to assess student writing: developing appropriate assignments and teaching techniques and using technology (e-mail, the Web, etc.) to teach writing. You will also explore research on writing and attitudes toward writing. (Summer) Prerequisites: EDTE 360 and 361; Co-requisite: EDTE 381.

381 ENGLISH AS A SECOND LANGUAGE (ESL) IN THE CONTENT AREA You will focus on the theories and practical strategies used to encourage second language development in the content-area classroom. You will pay special attention to sheltered instruction techniques and differentiating instructional practices. You will learn how to modify content, context, and procedures to meet the individual needs of non-native English speakers in the English-speaking classroom. You will explore current vocabulary acquisition theories and their practical classroom applications. You will acquire a variety of vocabulary teaching strategies and techniques. (Summer) Prerequisites: EDTE 360 and 361; Co-requisite: EDTE 380. (3, 3T+0L)

412 ASSESSING ENGLISH LANGUAGE LEARNERS This course, which is designed to help you understand the principles of second language assessment, as well as assessing second language learners in the content area, will address current issues in assessing English Language Learners (ELLs). You will develop a foundation of assessment theories, practices, and strategies, with particular attention on how to link assessment to instructional activities. You will gain practical experience in designing, administering, and interpreting assessments, with special attention to assessment instruments used in New Mexico. (Fall) Prerequisites: EDTE 380 and 381; Co-requisite: EDTE 413. (3, 3T+0L)

413 SPECIAL TOPICS IN TESOL You will address topics on current requests/needs in ESL. (Fall) Prerequisites: EDTE 380 and 381; Co-requisite: EDTE 412. (3, 3T+0L)
EDUCATION—ALTERNATIVE LICENSURE PROGRAM (ED)

Those enrolled in this program must achieve a minimum grade of ‘B” for each of the following:

401 FOUNDATIONS OF EDUCATION This course introduces you to the basics of the teaching profession. It includes societal expectations of teachers, social problems which impact students, essential knowledge needed for teaching, recent reforms in education, historical perspectives on education, the role of schools in today’s society, school governance, and the legal and ethical issues in education. Further, you will be expected to begin to articulate your philosophy of education. Prerequisite: Passing NMTA; Co-requisite: ED 452. (3, 3T+0S)

412 TEACHING AND DIAGNOSIS OF READING (ELEMENTARY) This course provides a conceptual framework for understanding the growth of language development throughout the elementary years. The class provides instructional strategies to build reading, writing, and speaking abilities, and it addresses literacy differences through a literature-based approach to instruction. The class focuses on cognitive, affective, social, and cultural factors that created differences in literacy abilities. State standards and benchmarks are incorporated in this course. Prerequisite: Passing NMTA. (3, 3T+0S) [11/14/07]

452 PEDAGOGY AND HUMAN LEARNING This course reviews the social, emotional, physical, and cognitive development of children from birth through adolescence, and it critically examines researched methods and theories, enabling teachers to become effective practitioners. You will explore brain-based learning, multi-sensory instruction, developmentally appropriate practice, multiple intelligences, and learning style. Prerequisite: Passing NMTA; Co-requisite: ED 401. (3, 3T+0S)

462/509 READING AND WRITING ACROSS THE CURRICULUM (SECONDARY) Provides an overview of literacy and language development, and focuses on the development and implementation of an integrated curriculum approach. at the secondary level. You will explore and practice alternative reading assessments which focus on teaching strategies incorporating state content and benchmarks. Prerequisite: ED 401 and passing NMTA. (3, 3T+0S)

464/504 READING AND WRITING ACROSS THE CURRICULUM (ELEMENTARY) Provides an overview of literacy and language development, and focuses on the development and implementation of an integrated curriculum approach at the elementary level. Also emphasized is the integration of state standards and benchmarks through a literary approach. Prerequisite: ED 401 and passing NMTA. (3, 3T+0S) [11/14/07]

474 METHODS AND MATERIALS IN SECONDARY EDUCATION This course explores the methods and materials appropriate in a secondary learning environment. You will learn teaching strategies, assessments, adaptive teaching for student learning styles, integration of content areas, and block scheduling. Alternatives to lecture are emphasized, with diversity of multiculturalism as a major focus. Prerequisite: Passing NMTA. (3, 3T+0S)

492 ASSESSMENT AND EVALUATION OF STUDENT LEARNING Explores that construction and utilization of teacher-made and standardized tests. You will learn to gather data, report, and communicate assessment results to students, parents, and administrators in a variety of ways in an effort to meet diverse student needs. You will become familiar with the local school district’s testing program, and will develop valid evaluation tools to measure student outcomes. Prerequisite: ED 401 and passing NMTA. (3, 3T+0S).

493 THE INTEGRATED ELEMENTARY CLASSROOM Explores the historical and theo-
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retirical perspectives underlying and supporting the integrated curriculum approach to teaching and learning. You will explore practical approaches to thematic instruction and integration through content areas through incorporating state standards and benchmarks. Components include assessment methods, lesson plans, curriculum planning and development. Prerequisite: Passing NMTA. (2, 2T+0S)

496  SUPERVISED FIELD EXPERIENCE (ELEM)  This course provides an interaction with other students in the elementary field-experience setting. Guided discussions address classroom management, student learning, lesson plans, discipline, school/home communication, and professional development. Additional areas include professional issues and ethics, and portfolio preparation. Prerequisites: Passing NMTA. (1, 1T+0S)

496L  SUPERVISED FIELD EXPERIENCE LAB (ELEM)  Provides a field experience in an appropriate elementary classroom setting under the advisement and supervision of a mentor teacher and college supervisor; emphasizes observation of student learning styles, teaching strategies, classroom management, and discipline. Requires 96 or more hours of practicum in the field, which includes 6 hours of seminar. Interaction with students on a one-to-one basis and in small group settings is provided. Prerequisite: Passing NMTA. (2, 0T+2S)

498  SUPERVISED FIELD EXPERIENCE (SEC)  This course provides an interaction with other students in the secondary field-experience setting. Guided discussions address classroom management, student learning, lesson plans, discipline, school/home communication, and professional development. Additional areas include professional issues and ethics, and portfolio preparation. Prerequisite: Passing NMTA. (1, 1T+0S)

498L  SUPERVISED FIELD EXPERIENCE LAB (SEC)  Provides a field experience in an appropriate secondary classroom setting under the advisement and supervision of a mentor teacher and college supervisor; emphasizes observation of student learning styles, teaching strategies, classroom management, and discipline. Requires 96 or more hours of practicum in the field, which includes 6 hours of seminar. Interaction with students on a one-to-one basis and in small group settings is provided. Prerequisite: Passing NMTA. (2, 0T+2S)

ELECTRICAL TECHNOLOGY (ELEC)

110  INTRO TO SOLAR ELECTRICITY  You will study the basics of electrical wiring technology found in photovoltaic systems, including direct current (DC) and alternating current (AC) circuits. You will review basic electrical theory and the current National Electrical Code (NEC) requirements. You will be introduced to the components found in grid-tied systems and stand-alone systems and given the opportunity to compare these systems. (1, 1T+0S)

110L  INTRO TO SOLAR ELECTRICITY LAB  In this course, you will have laboratory experiences which apply to the theoretical material covered in ELEC 110. You will work with AC and DC components, methods, tools, and materials needed to connect photovoltaic systems from collector module wiring to panels to batteries to inverters to grid-tie equipment. Safety in the electrical environment is stressed. (2, 0T+2S)

140  ELECTRICAL THEORY I  Basic electrical theory, OHMs Law, series and parallel circuits, electrical symbols, AC and DC circuits. (3, 3T+0S)

141  ELECTRICAL CODE I  National Electrical Code (NEC) requirements for single and multi-family dwellings, use of NEC tables and calculations. (3, 3T+0S)

142L  RESIDENTIAL WIRING LAB  Practical applications and operations in wiring tech-
Electrical, Electronic, and Computer Engineering

Electrical, Electronic, and Computer Engineering (EECE)

105 Microcomputer Systems In this introductory course on microcomputers, you will study the characteristics and nature of modern-day computer systems, including hardware and software components. Among the principal software components, the course describes the role of operating systems, and then focuses on Linux. The course provides the background knowledge and skills in Linux you will require for any type of engineering, technology or computer science related career. The course also includes an introduction to scripting languages and their benefits to automate operating systems tasks. (Fall, Spring) (4, 3T+1L)

132 Computer Networks I Students will learn both practical and conceptual skills that build the foundation of networking. They will examine the OSI and TCP/IP layers in detail to understand their functions and services. Students will become familiar with the various network devices, network addressing schemes, and types of media used to carry data across the network. They will gain experience designing and deploying internetworks of WAN and LANS using static routing. (3, 2T+1S)

152L Computer Programming This course introduces students to the basics of computer programming using C language, including basic syntax and semantics of a higher-level language, variables, types, expressions, and assignments. The course also covers simple Input/Output, conditional and iterative control structures, functions and parameter passing, and structured decomposition. (Fall and Spring) (4, 3T+1L)

203L Circuit Analysis I You will study basic electrical elements and sources; energy and power; Ohm’s and Kirchoff’s Laws; resistive networks, node and loop analysis; network theorems; first and second order circuits; sinusoidal sources and complex representations; impedance, phasors’ complex power; and three-phase circuits. Prerequisites: PHYS 216/L. (Fall) (3, 2T+1L)

213 Circuit Analysis II You will study general transient analysis of electrical circuits; LaPlace transform with application to circuit analysis; state-space equations; Fourier
series analysis; the network function, convolution, and frequency response. **Prerequisites:** MATH 314 and 316, and EECE 203L. (Spring) (3, 2T+1L)

220 NETWORK AND SERVER SOFTWARE By the end of this course, which includes an overview of networking architecture, services, and features covering hardware requirements, software installation, and system administration through an exploration of server software based on an organization’s needs, you will install and configure a variety of software, primarily Linux and Free/Open Source projects. **Prerequisite:** EECE 132. (4, 2T+2S)

231 INTERMEDIATE PROGRAMMING I This course introduces students to object-oriented programming. Most programming assignments are done in the Java language. Several programming projects of moderate size will help students to learn how to design object-oriented programs using design patterns; how to choose appropriate data structures and algorithms that strike a balance between logical simplicity and performance; and how to write programs in stream-oriented and event-oriented style. The exercises will involve common data structures such as lists and stacks. **Prerequisite:** EECE 152L (3, 3T+0L) (3, 3T+0L)

238L COMPUTER LOGIC DESIGN You will study binary number systems, Boolean logic; combinatorial, sequential, and register transfer logic; VHDL; arithmetic/logic unit; memories, computer organization, input-output, and microprocessors. **Prerequisites:** ENGR 120 or MATH 150 and EECE 152L. [Cross-listed with CS 238L] (Spring) (4, 3T+1L)

314 SIGNALS AND COMMUNICATION You will study linear system analysis; signal spectra; Fourier series and transforms; modulation and demodulation schemes, sampling theorem, discrete time signals, discrete time Fourier series and transform, elements of z-transform. **Prerequisites:** EECE 213 and MATH 163. (Fall) (3, 3T+0L)

321 ELECTRONICS I You will be introduced to diodes, bipolar and field-effect transistors; analysis, design and characterization of linear amplifiers; analysis and design of operational amplifiers and their circuit applications. **Prerequisite:** EECE 213. (Fall) (3, 3T+0L)

322 ELECTRONICS II You will study the design of multistage, operational amplifiers and feedback circuits; analysis and design of common digital integrated circuits; gates, flip-flops, and multivibrators. **Prerequisite:** EECE 321. (Spring) (3, 3T+0L)

327L ELECTRONICS LAB You will engage in laboratory experiments in analog and digital electronics. **Prerequisite:** EECE 321. (Spring) (2, 1T+1L)

329 HUMAN COMPUTER INTERACTION This course covers the development of IT products considering the human-computer interaction, including human factors, performance analysis, usability studies, environment, and training. The course also covers the development of effective interfaces and accessibility. **Prerequisite:** EECE 231. (3, 3T+0L)

330 COMPUTER NETWORKS II The focus of this course is on learning network design and operation from a layer 3 perspective. The course includes both intra-domain static routing and dynamic routing protocols. Students will describe how routers discover remote networks and determine the best path to them. They will design addressing schemes and deploy WANs, LANs and inter-networks using static routing as well as RIPv1, RIPv2, EIGRP, and OSPF protocols. Based on these protocols, students will identify the characteristics of distance vector and link state routing protocols. They will learn fundamental tools for routing scalability, and will design hierarchical routing schemes with OSPF. Students will describe the concept of traffic engineering and apply multi-path schemes. **Prerequisites:** EECE 132. (3, 2T+1S)
331 DATA STRUCTURES AND ALGORITHMS You will be introduced to data structures and algorithms used in software programs; mathematics needed to analyze their time and space and complexity. Topics include asymptotic notation, recurrence algorithms and their sorting, hash tables, basic priority queues, search trees, and basic graph representation and search. Prerequisites: EECE 231 and EECE 337. (3, 3T+0L)

337 INTRODUCTION TO COMPUTER ARCHITECTURE AND ORGANIZATION You will survey various levels of computer architecture and design; microprogramming and processor architecture, advanced assembly language programming, operating system concepts, and input/output via the operating system. Prerequisites: EECE 238L and CS 241. (Fall) (3, 3T+0L)

340 PROBABILISTIC METHODS IN ELECTRICAL ENGINEERING You will study probability axioms, random variables, mean, variance, characteristic functions, transformation of random variables, confidence intervals, jointly defined random variables, multi-variate Gaussian variables, conditional probability densities, random processes, correlation, power spectrum, white noise, Markov processes and chains, transmission of noise through linear systems. Prerequisites: EECE 314 and MATH 314. (Spring) (3, 3T+0L)

342 WIRELESS AND MOBILE COMPUTING This course focuses on principles and applications of wireless networks and Local Area Networks (LANs) including switches, Virtual LANs (VLANs) and extended switched networks. The course also provides an overview of mobile devices and an introduction to network security including message integrity, authentication and operational security in switched and wireless networks. Prerequisite: EECE 132 (3, 2T+1S)

344L MICROPROCESSORS You will study computers and microprocessors; architecture, assembly language programming, input/output and applications. Prerequisite: EECE 322. (Fall) (4, 3T+1L)

355 WEB ENGINEERING This course covers the design, implementation and testing of web-based applications including related software, database, interfaces and digital media. It also covers social, ethical and security issues arising from the Web and social software. Prerequisites: IT 250 and EECE 231. (4T).

360 ELECTROMAGNETIC FIELDS AND WAVES You will study Maxwell’s equations, plane wave propagation, waveguides and transmission lines, transient pulse propagation and elementary dipole antenna. Prerequisites: EECE 213, PHYS 216/L, and MATH 163. (Spring) (3, 3T+0L)

371 MATERIALS AND DEVICES You will be introduced to quantum mechanics, crystal structures, insulations, metals, and semiconductor material properties, bipolar field effect, and light emitting devices. Prerequisite: PHYS 216/L. (Fall) (3, 2T+1L)

390 POWER SYSTEMS You will study mechanical and electrical properties of machinery for power generation or deployment; network or grid design of distribution of power; sources of electric power and their characteristics of energy conversion efficiency, cost, and environmental impact; introduction to electric energy storage. [Cross-listed with ME 390] Prerequisites: ME 306 and 317, and EECE 203L. (Spring) (3, 3T+0L)

432 INTRODUCTION TO PARALLEL PROCESSING Machine taxonomy and introduction to parallel programming; performance issues, speed-up and efficiency; interconnection networks and embedding; models of data flow. Prerequisites: EECE 231 and 337. (Spring) (3, 3T+0L)

435 SOFTWARE ENGINEERING As junior- and senior-level science and engineering students, you will study modeling the process and life cycle, planning and managing
the software project, designing, delivering, and maintaining the software systems. **Pre-requisite:** EECE 231 and IT 250. (Fall) (3, 3T+0L)

**437 OPERATING SYSTEMS** You will study the structure and functions of operating systems; synchronization and mutual exclusion; process, memory, and storage management; resource allocation and deadlock; multi-core processors, clustered computers, and virtual machines. **Prerequisite:** EECE 152L. (3, 3T+0L)

**440 ADVANCED COMPUTER NETWORKS** Students will research, design, and implement a variety of WANs considering different technologies and protocols such as Frame Relay and PPP. Students will also implement multimedia applications over WANs, and develop knowledge and expertise network security and management. **Prerequisites:** EECE 330 and EECE 342, (Fall, Spring, Summer) (3,2T+1S).

**441 INTRODUCTION TO COMMUNICATION SYSTEMS** You will study modulation methods—amplitude, phase, frequency and pulse dimensional, sideband shaping, synchronous and asynchronous mod/demod, timing recovery, phase-lock loops, equalizers—fixed and self-adjusting, linear and nonlinear impairments, effects of noise, spread spectrum by code or frequency hopping. **Prerequisites:** EECE 314 and 340. (Fall) (3, 3T+0L)

**447 ROUTING AND SWITCHING** You will learn how to connect computers in a network and how to connect the separate networks together to form an inter-network, through examination and implementation of bridging, switching concepts, and routing protocols and algorithms. **Prerequisite:** EECE 330. (3, 2T+1S)

**452 POWER CONTROLLERS** You will study power supply design, DC-DC and DC-AC conversion devices, electric power measurement devices, frequency and power level stabilizers; regulators, smart metering. **Prerequisite:** EECE 321. (Spring) (3, 2T+1L)

**453 ELECTRIC ENERGY STORAGE DEVICES** You will study electrochemical, electrostatic, and electromechanical processes for storage of electrical energy; design of storage systems; storage efficiency measures. **Prerequisite:** EECE 203. (Fall) (3, 3T+0L)

**461 SOFTWARE AND DESIGN** This course introduces software design and software configuration management (SCM). Design concepts, design strategies, architectural design and human computer interface design etc., will be covered. SCM principles, advanced topics and implementation procedures in one accessible resource will also be covered. It maps the integration of SCM activities within the software development life cycle. It explores the latest advances in SCM tools, SCM organization, operation and maintenance of SCM systems. (Fall) **Prerequisite:** EECE 435 (3T+0L)

**462 SOFTWARE PROCESS AND MANAGEMENT** This course introduces the practical approach to improve the software process through process assessment, combined with people factors such as organizational culture and team based improvement. The process assessment will include setting Target Profiles, Process Capability Determination and Process Improvement. It will also cover a standard assessment method and variants, plus how to rate a process up to ISO/IEC 15504 capability level 5. The software management will also be covered in this course, including management concepts, project planning and project control et.al. **Prerequisite:** EECE 435. (Spring) (3T+0L).

**463 SOFTWARE MODELING AND ANALYSIS** This course will cover modeling foundations, software models, and analysis fundamentals. (Fall) **Prerequisite:** EECE 435 (3T+0L)

**470 SOFTWARE QUALITY ASSURANCE** As junior- and senior-level science and engineering students, you will study software quality assurance, covering such topics as software verification and validation, structural testing, functional testing, software test-
ing metrics and strategies, and software quality assurance and engineering. Prerequisite: EECE 435. (Spring) (3, 3T+0L)

472 PHOTOVOLTAIC DEVICES You will study photovoltaic effect in semiconductors; electrical and mechanical design of photovoltaic cells, panels, and systems; use of lenses and mirrors in PV systems; manufacturing methods of PV devices. Prerequisite: EECE 203L. (3, 3T+0L)

490 CAPSTONE I IN SOFTWARE ENGINEERING A project course in which you will exercise your knowledge of computer and software engineering. Prerequisite: EECE 152L (4, 2T+2L)

491 CAPSTONE II IN SOFTWARE ENGINEERING A project course in which you will exercise your knowledge of computer and software engineering. Prerequisite: EECE 152L (4, 2T+2L)

547 ROUTING AND SWITCHING Computer networking principles and operational structures of bridges, routers, and switches. Packet switching techniques, routing protocols and packet processing algorithms. EECE 547 has higher standards and different deliverables than EECE 447. (3, 2T + 1S)

ENGINEERING (ENGR)

110 INTRODUCTION TO ENGINEERING This course is intended to provide an introduction to the engineering discipline. The course also provides a learning community experience for the mechanical engineering and information technology engineering students. Topics discussed include: departmental policies, code of ethics in engineering, history of engineering, introduction to writing technical reports, time management, introduction to concepts and techniques in computer programming. Students are exposed to intensive hands-on experiences that are assessed through a final project. Prerequisite: Math 102N or better or Permission of the Instructor. Fall & Spring (3, 1T, 2S)

120L INTRODUCTORY MATHEMATICS FOR ENGINEERING APPLICATIONS Students will learn the basic algebraic manipulations, trigonometry, 2-D vectors, complex numbers, 3-D vectors and matrices, sinusoids, basics of differentiation, basics of integration, and linear differential equations with constant coefficients from the point of view of engineering applications. Students will learn the fundamental and minimum of these topics in order to understand the engineering applications. Prerequisite: MATH 130. (4, 3 T + 1 L).

160L GENERAL ENGINEERING DESIGN I Introduces engineering graphics, the design process, computer-aided design, engineering ethics, design economics, and project management. [Cross-listed with ME 160L] Prerequisite: ENGR 120L. (3, 2T+1L)

470 ENGINEERING MANAGEMENT I You will study engineering management and business principles for first-time engineering, science, or technology managers. You will cover time and budget management, employee and organizational management, team building and rewards, and project strategy. Prerequisite: ENG 111, with Senior standing recommended. (3, 3T+0L)

471 ENGINEERING MANAGEMENT II You will study advanced engineering management principles for mid-level and executive engineering managers, focusing on technology and science strategies at the organization or corporate level. Topics will also include technology transfer, valuation, and transactions. Prerequisite: ENGR 470. (3, 3T+0L)

472 ENGINEERING ENTREPRENEURSHIP You will study the principles of engineering/technology entrepreneurship, marketing, people management, and team building for technology-based start-ups, focusing on best practices in the formation of a company
which is focused on product and service innovations. As a member of a team, you will train in business plan assembly, presentation, and defense. **Prerequisite**: ENG 111, with Senior standing recommended. (Spring) (3, 3T+0L)

**473 FINANCING ENGINEERING COMPANIES** You will study the evaluation, financing, and the investor oversight of technology or engineering start-ups; the investment principles applied to technological innovation, the interaction between entrepreneurial teams, investors, and private/public financing markets. **Prerequisite**: ENG 111, with Senior standing recommended. (Fall) (3, 3T+0L)

**474 ENGINEERING PROJECT MANAGEMENT** In this introduction to the methods underlying modern project management in the development of engineering software, hardware, or systems products, you will study team formation, status reporting, project management tools, and management of cross-disciplinary teams. **Prerequisite**: ENG 111, with Senior standing recommended. (Spring) (3, 3T+0L)

**475 DEVELOPING ENGINEERING PRODUCTS** You will study the art and science of managing engineering product development from the requirements phase to the testing phase and customer delivery and support while reviewing rapid time to market principles, along with product platform design processes. **Prerequisite**: ENG 111, with Senior standing recommended. (Fall) (3, 3T+0L)

**476 MARKETING ENGINEERING PRODUCTS** You will study marketing principles of science, technology, or engineering products and services, reviewing best practices in product research, competitive analysis, sales/marketing incentives, and the acquisition of technology products. **Prerequisite**: ENG 111, with Senior standing recommended. (Spring) (3, 3T+0L)

**477 TECHNOLOGY TRANSFER—EAST/WEST** You will study the historical, political, financial, and cultural aspects of technology transfer between countries in the western hemisphere and those in the eastern hemisphere, with particular emphasis on India and China in Asia and the United States. Your review of bargaining strengths held by parties in the negotiation will be followed by a study of subsequent development of technology through financial transactions, joint ventures, and licensing agreements. **Prerequisite**: ENG 111, with Senior standing recommended. (Fall) (3, 3T+0L)

**478 ENGINEERING ETHICS** You will review the impact of engineering decisions in product design, testing and marketing in light of cases which depict appropriate and inappropriate ethical behavior in engineering organizations. You will also review cultural, ethnic, and historical factors in the formation of ethical systems. **Prerequisite**: ENG 111, with Senior standing recommended. (Spring) (3, 3T+0L)

**479 ENGINEERING FACTORS IN CORPORATE STRATEGY** You will study the influence, contributions and interdependency of engineering innovation on financing and market needs as these relate to corporate strategy and advancement. You will review the concepts of core competencies, engineering equity, and high performance in terms of corporate assets. **Prerequisite**: ENG 111, with Junior/Senior standing recommended. (Spring) (3, 3T+0L)

**578 ENGINEERING ETHICS** You will review the impact of engineering decisions in product design, testing and marketing in light of cases which depict appropriate and inappropriate ethical behavior in engineering organizations. You will also review cultural, ethnic, and historical factors in the formation of ethical systems. (Spring) (3, 3T+0L)
ENGLISH (ENG)

106N BASIC READING AND WRITING  Studies grammar, simple sentence structure, and reading improvement skills; develops abilities in critical thinking. **Prerequisite:** adequate score on Course Placement Evaluation; **Corequisites:** Personal Development courses per direction of advisor. (4, 4T+0S)

108N BASIC COMPOSITION I  This course focuses on basic writing skills necessary to create focused, well-organized and supported essays. Students will engage in the writing process to draft, revise, proofread and edit their essays so that their writing is coherent and clear. Students will practice the skills of critical reading and develop skills of critical thinking. They will also study the conventions of grammar, punctuation, and usage. **Prerequisites:** English 108N, or adequate score on Course Placement Evaluation. (4, 4T+0S)

109N ACCELERATED BASIC COMPOSITION II  This course prepares students for college-level composition by engaging them in the writing process and focusing on the rhetorical skills necessary to write focused, clearly organized, well-supported, and grammatically correct essays. Students will critically read texts and incorporate ideas from sources to develop and support an arguable thesis. This will be accomplished by practicing the research skills of summarizing, paraphrasing, and quoting, using MLA format. This accelerated course has a co-requisite of English 111 and is designed to support student's successful completion of the objectives of English 111. **Prerequisite:** English 108N, or adequate score on Course Placement Evaluation. (4, 4T+0S)

109NL BASIC COMPOSITION II  This course prepares students for college-level composition by engaging them in the writing process and focusing on the rhetorical skills necessary to write focused, clearly organized, well-supported, and grammatically correct essays. Students will critically read texts and incorporate ideas from sources to develop and support an arguable thesis. This will be accomplished by practicing the research skills of summarizing, paraphrasing, and quoting, using MLA format. **Prerequisite:** English 108N, or adequate score on Course Placement Evaluation. (4, 4T+0S)

110N PUNCTUATION AND GRAMMAR REVIEW  This course focuses on the basic rules of punctuation, mechanics, and grammar to support students in their efforts to write clearly and correctly. Students will work towards becoming proficient at finding and correcting their own errors. (1, 1T+0S)

111 ENGLISH COMPOSITION I  Involves instruction and practice in expository writing and critical reading; reviews grammar and stresses vocabulary development. **Prerequisite:** ENG 109N, or adequate score on Course Placement Evaluation. (3, 3T+0S)

112 ENGLISH COMPOSITION II  Involves analytic writing, reading, and discussion of imaginative literature. **Prerequisite:** ENG 111. (3, 3T+0S)

114 INTRODUCTION TO MASS COMMUNICATIONS  Covers the functions and organization of the mass media system in the United States; analyses the cultural, social, and political impact of mass media, especially TV, on US society. **Prerequisite:** ENG 111. (3, 3T+0S)

115 WRITING FOR THE MASS MEDIA I  Introduces you to journalistic writing, including conventions of journalism, and the gathering and writing of news articles for print and broadcast media. **Prerequisite:** ENG 111. (3, 3T+0S)

116 TECHNICAL WRITING  This course covers the preparation of written reports of a scientific and/or technical nature, with emphasis on formal and informal reports, instructions, abstracts, technical articles, scientific and technical terminology and vocabulary, formats, tables, graphs, charts, and audio-visual and oral presentation.
techniques. *Prerequisite:* ENG 111. (3, 3T+0S)

117 **GRANT WRITING** Provides you with an overview of the grant writing process, development of an idea, determining a need statement, evidence of need (statistics, etc.), defining the objective of the grant, story boarding and designing a program. Includes information on where and how to locate grants. (1-3, 1-3T+0S)

221 **CREATIVE WRITING** Involves the analysis and criticism of student-produced poetry or fiction (focus varies by semester). May be taken twice for credit. (3, 3T+0S)

230 **WORLD LITERATURE I** You will explore global literature from the first epics through works of the early 17th century. You will focus on how narrative and myth represent the perspectives, achievements, and values of specific world societies through major genres of the period, including non-fiction, poetry, and drama. *Prerequisite:* ENG 111. (3, 3T+0S)

231 **WORLD LITERATURE II** You will study masterpieces of fiction, non-fiction, poetry, and drama in order to develop a deeper appreciation of world literature from the 17th to the 21st centuries, and to strengthen your analytical skills. *Prerequisite:* ENG 111. (3, 3T+0S)

260 **THE BIBLE AS LITERATURE** You will study and discuss the narratives and poetry found in the English Bible, with emphasis on the literary qualities of the readings. *Prerequisites:* ENG 111. (3, 3T+0S)

262 **SOUTHWEST LITERATURE** You will learn to appreciate and analyze Southwest literature through reading, discussing, and writing. The literature chosen will be from a cross-section of cultures, genders, and genre (fiction, poetry, non-fiction). *Prerequisite:* ENG 112. (3, 3T+0S)

265 **NATIVE AMERICAN LITERATURE I** Involves a survey of Native American writing from the time of the European invasion to the present with an emphasis on contemporary authors. *Prerequisite:* ENG 111. Cross-listed as Pis 265. (3, 3T+0S)

266 **NATIVE AMERICAN LITERATURE II** Involves critical reading and discussions of writings by Native American writers of fiction (short stories and novels) and poetry. *Prerequisite:* ENG 111. Cross-listed as Pis 266. (3, 3T+0S)

270 **CHILDREN’S LITERATURE** In order to develop an understanding of children’s literature from a multicultural perspective, you will explore stories and novels written for children from various cultures, with an emphasis on Native American and Hispanic cultures. Through class discussion and essays, you will develop literary analysis of these works, focusing on issues of cultural identity and conflict. To help you better grasp the role of children’s literature in our community, you will participate in a service-learning project that supports literacy and cultural awareness among local youth. *Prerequisite:* ENG 111. (3, 3T+0S)

280 **READINGS IN LITERATURE** You will study selected regional or ethnic themes in literature. As the content varies, consult a current Schedule of Classes for each term’s specific content area. May be taken twice for credit. *Prerequisite:* ENG 111. (3, 3T+0S)

290 **STUDY OF LITERATURE** Focused study of literary periods, types, traditions, themes, or individual authors; content varies from semester to semester; involves readings, lecture, discussion, and composition. As the content varies, consult a current Schedule of Classes for each term’s specific content area. May be taken twice for credit. *Prerequisite:* ENG 111. (3, 3T+0S)

292 **WOMEN’S LITERATURE** You will study literature written by and focusing on women, including novels, short stories, poetry, drama, and theory. *Prerequisite:* ENG
294 MYTHOLOGY  Provides a comparison and study of the mythologies of a variety of civilizations and their influences on literature. The course may focus on different mythologies depending on the semester. The areas of study may include Greek mythology, Roman mythology, Celtic mythology, and/or Native American mythology. May be repeated once for credit if the topic varies. Prerequisite: ENG 111. (3, 3T+0S)

296 FILM AS LITERATURE  You will develop your ability to critically view films through an examination of literary elements and film techniques. You will view films based on literature, reading works on which these films are based, which will allow a comparative analysis of the film’s interpretation of the literary source. You will also view films from a variety of cultures to gain insight on how these cultures are represented through the films. Prerequisite: ENG 111. (3, 3T+0S)

318 ORAL TRADITIONS: FOLK STORIES  In order to develop an understanding of how oral traditions and folk stories shape the way people understand and interpret their experiences, you will explore folk stories from various cultures, with a special emphasis on Native American, Hispanic, and African American cultures. You will experience storytelling through guest speakers, class presentations, and films. Through class discussion and writing, you will develop critical responses and analysis of folktales, focusing on cultural patterns and perceptions. To help you better understand the role of folk stories in our community, you will participate in a service learning project that supports the preservation and celebration of folk stories and the oral tradition. Prerequisite: ENG 112. (3, 3T+0S)

456 SHAKESPEAREAN PLAYS  You will study a selection of Shakespearean dramatic forms as presented in histories, tragedies, and comedies. Through discussion and writing, you will engage in careful analysis of the text and interpretation of the characters, conflicts, and themes. Through this work, you will develop an appreciation for and understanding of Shakespeare’s plays: their literary value, their historical context, and their insight into the human condition. Additionally, you will analyze a film production of at least one play to examine the relationship between the text and the theatrical interpretation. You will develop and refine your own insights into Shakespearean drama through synthesizing literary criticism and theories of human behavior from other traditions and disciplines. Prerequisite: ENG 112. (3, 3T+0S)

468 ECO-CRITICISM  You will explore the interpretive possibilities of eco-criticism as it applies to the understanding and writing of literature. You will address the question of how literary texts represent and explore the relations between nature and culture and the human and non-human, and how they may help us understand environmental crisis and the multifaceted threat posed today by the domination of homo sapiens over the earth. Prerequisite: ENG 112. (3, 3T+0S)

ENVIRONMENTAL SCIENCE (ES)

100 ENVIRONMENTAL SAFETY, HEALTH, AND RADIATION  Involves the successful completion of training modules offered by LANL: General Employee Training (8 hours); First Aid and CPR (8 hours); Electrical Safety Program for Non-Electrical Crafts (4 hours); Hazard Communication (4 hours); Batteries and Battery Banks (2 hours); Lockout Tagout (3 hours), and Radiological Worker (12 hours). Prerequisite: Permission of instructor. (2, 2T+0S)

103 INTRO TO NATURAL RESOURCE MANAGEMENT  This course reviews elements of range management, forest management, wildlife management, watershed manage-
Environmental Science

This is an introductory-level course designed to expose students to key principles and concepts in natural resources management while emphasizing a science-based approach to solving complex problems. Topics will include an overview of basic relationships between animals and their habitat resources, the goods and services provided by natural resources, and various approaches to sustainably managing these resources. Students will participate in field trips to regional sites to improve their understanding of socio-political issues related to natural resource management. (3, 3T+0L).

112 INTRODUCTION TO ENVIRONMENTAL SCIENCE I
You will study environmental science through the structure and function of ecosystems and the various levels of living organisms. You will define and analyze ecological principles which determine the sustainability of ecosystems, including energy use, nutrient recycling, balance, natural resources, resilience, and biodiversity. Co-requisite: ES 112L. (3, 3T+0L)

112L INTRODUCTION TO ENVIRONMENTAL SCIENCE I LAB
In this field-work companion to ES 112, you will work as part of a team, concentrating on a detailed investigation and analysis of a specific environmental problem or case. Co-requisite: ES 112. (1, 0T+1L)

120 FOREST AND RANGE ECOLOGY
Identification of native southwestern range plants, ecosystems and their relation to associated ecosystems, soil types and moisture zones as they affect the range; studies grazing by both wild and domestic animals and its effect on plant communities, and man and his effect on the range. (3, 3T+0S)

121 ENVIRONMENTAL AIR MONITORING
Explores fundamentals and techniques of monitoring the environment with an emphasis on the air pathway, including the nature of gases and the atmosphere, the oxygen and carbon cycles, Stokes law, the gas laws, Gaussian plume models, source pathways of pollutants, and the use of state-of-the-art equipment to measure pollutants and meteorological variables. Prerequisite: ES 112/L. (3, 3T+0S)

123 ENVIRONMENTAL HYDROLOGY AND ECOLOGY
Explores fundamentals and techniques of monitoring the environment with an emphasis on the water pathway, including the periodic table, ions, bonds, pH, phase changes, fluid flow, Stokes law, hydrostatic pressure, eco-toxicology, the food chain, and the use of state-of-the-art equipment to measure pollutants in soils, and in surface and ground water. (3, 3T+0S)

126 MONITORING WATER QUALITY
Students will participate in monitoring water quality to include site selection, measurement of physical characteristics such as temperature, turbidity, and chemical parameters such as alkalinity, dissolved oxygen levels, phosphate levels, and ammonia nitrogen levels to establish a water profile. (3, 3T+0L)

134 OSHA HEALTH AND SAFETY
Overview of the accepted technologies to protect the health and safety of personnel handling hazardous waste. Meets OSHA 29 CFR 1910.120 requirements for Hazardous Waste Operations. Graded CR/NC. (3, 3T+0S)

137 OSHA FIRST RESPONDER
Required for the Operations Level Responder as per 29 CFR 1910.120, this course includes the OSHA Awareness Level course requirements. The Operational Level may take defensive actions from a safe distance that will control the release and keep it from spreading. These actions are intended to protect nearby persons, property, and the environment from the effects of the release. First Responders at the Operational Level are not trained to enter the Hot zone. (1.5, 1.5T+0L)

201 ENVIRONMENTAL PHYSICAL AND CHEMICAL PROCESSES
You will study basic general, analytical, organic, and polymer chemistry from an environmental perspective:
the pollutants of air, water, and land; the rudiments of toxicology, and an introduction to green chemistry. You will learn about chemical processes in industry and nature, physical transport, risk, and aspects of human impacts and policy. **Prerequisites:** BIOL 201/L and CHEM 121/L; **Co-requisite:** ES 201L. (3, 3T+0L)

**201L ENVIRONMENTAL PHYSICAL AND CHEMICAL PROCESSES LAB** You will study the basic techniques for chemical analysis of environmental samples including air, water, and soil. You will also learn to use electronic data acquisition systems and further develop your scientific writing skills. **Co-requisite:** ES 201. (1, 0T+1L)

**203 INTRODUCTION TO GIS/GPS AND CARTOGRAPHY** You will evaluate the characteristics, uses, and limitations of computer applications in natural resource management including application programs in statistical analysis, computer modeling, geographic information systems (GIS), global positioning systems (GPS), and database management systems (DBMS). Cross-listed as DRFT 110. **Prerequisite:** permission of instructor. (3, 2T+1S)

**211 INTRODUCTION TO SOIL SCIENCE AND MANAGEMENT** You will apply fundamental soil science principles in sustainable management of forested, agricultural and urban or constructed ecosystems. You will be introduced to concepts related to relationships between soil formation, soil classification, nutrient response and chemical, physical, and biological properties of soil. You will do soil sampling and interpretation. You will learn about the less impacting methods for remediation of soils and the reintroduction of nutrients and biota. **Co-requisite:** ES 211/L. (3, 3T+0L).

**211L INTRODUCTION TO SOIL SCIENCE AND MANAGEMENT LAB** You will be introduced to field analysis, interpretation, and characterization of soil profiles and how they are impacted by weather, drainage, agricultural, industrial, and man-made factors. You will sample soil and interpret the results. You will apply soil management principles in the field with an emphasis on integrating sustainable agricultural practices while maintaining environmental health and economic productivity using the principles of soil science. **Co-requisite:** ES 211L. (1, 0T,1L).

**217 RANGELAND MANAGEMENT** You will study both the broad concepts of planning and the variety of planning approaches that are frequently used in rangeland planning on public and private land. You will also take an in-depth look at the management of grazing resources, including ecology, economics, burning, brush and weed control, grazing systems, and complementary grazing crops. You will address related topics, such as job satisfaction and leadership, communications, professionalism, ethics, and problem-solving. **Prerequisites:** ES 112/L, ES 120, and BIOL 203/L. (3, 3T+0L)

**220 FIELD DECONTAMINATION PROFICIENCY** Reinforces basic decontamination training for mixed groups of employees with limited training or experience performing decontamination techniques. Intended for groups such as new recruits, volunteer firefighters, and/or law enforcement personnel. Basic decontamination principles, techniques, and equipment are reviewed; participants have an opportunity to plan, perform, and observe the results of their decontamination techniques. (1-3, 1-3T+0L)

**225 PRINCIPLES OF AGRICULTURE ECOLOGY** You will be introduced to ecology in the analysis of agriculture and sustainable alternatives, with an emphasis on the fundamentals of agriculture: soils, seeds, and water, and the geographical and cultural context of farming systems. You will study topics in traditional agriculture, farm development and design, and sustainable farm practices. **Prerequisites:** ES 112/L and BIOL 203/L. (3, 3T+0L)

**236 ENVIRONMENTAL SAMPLING AND INSTRUMENTATION** You will study the
fundamental standards of environmental monitoring, such as the application and use of site assessment, monitoring wells, permeability testing, soil vapor extraction and air sparging pilot installations. You will employ principles such as obtaining a representative sample; sample containment; design, installation site assessment, monitoring wells, permeability testing, soil vapor extraction and air sparging pilot installations. You will employ principles such as: obtaining a representative sample; sample containment; design, installation, testing and monitoring of wells; design, establish, and collect data from permeability testing, groundwater contour maps, soil vapor extraction, and air sampling systems, and pilot tests. Prerequisites: ES 112/L, ES 134, ES 201/L or CHEM 122/L, and MATH 145. (3, 3T+0L)

237 POLLUTION PREVENTION AND WASTE MINIMIZATION Covers pollution prevention and hazardous waste minimization, with emphasis on techniques and implementation strategies. (3, 3T+0S)

238 ENVIRONMENTAL LAW AND REGULATIONS You will study the basic laws and regulations for the management of solid and hazardous wastes, as well as those regulations impacting national forests and agriculture. Supplemental courses will follow in the concentration areas. Prerequisite: ES 112/L. (3, 3T+0L)

250 WATERSHED AND HYDROLOGY MANAGEMENT You will integrate concepts of physical hydrology, geomorphology, and water quality of watersheds with problem-based emphasis on managing natural resources and the effects of management activities on hydrologic and geomorphic processes. You will focus on the amount and timing of water yield, storm flow, water quality, and sedimentation through examination of water and sediment budgets, riparian systems, and hillslope/watershed hydrological processes. Prerequisites: ES 112/L, BIOL 203/L, and CHEM 121/L. (3, 3T+0L)

257 INTRODUCTION TO ECONOMICS OF FOOD AND AGRICULTURE IN INDUSTRIAL DEVELOPMENT This course introduces students to current topics in the economics of how people meet their food needs and on the role of agriculture in economic development. Additional topics will cover changing diets of people on a local and global scale. Prerequisites: ES 112/L. (3, 3T+0L)

260 ENVIRONMENTAL RADIOACTIVITY You will explore the fundamentals and techniques of monitoring the environment with an emphasis on radioactivity, including electrons, protons, neutrons, photons, ionization, fission, units, the Chart of the Nuclides, half-life, spectroscopy, and the use of hand-held detectors (TLDs, NEWNET, and AIRNET) to measure radionuclides in the environment. You will experience hands-on work with LANL staff and technicians. Prerequisites: MATH 102N or MATH 103N and ES 100. (3, 1T+2S)

265 INTRODUCTION TO PRINCIPLES OF SUSTAINABLE AGRICULTURE You will study food production resources (soils, crops, and climates) and approaches that conserve or renew those resources for a continuing benefit to society. You will participate in field trips which stress hands-on experience with soils and crops. Prerequisite: ES 225. (3, 3T+0S)

280 SUSTAINABLE BUILDING SYSTEMS This course will cover alternative building designs for housing and structures, understanding “green building” and natural building. Low energy building design principles applied to climatic zones will be covered as will material selection, house and room design, passive solar principles and application, human settlement design, and intentional communities. (3, 3T+0L)

299 PRACTICUM IN ENVIRONMENTAL SCIENCE Learning experiences while employed in the field of environmental management. Forty-eight work hours are required to earn one semester hour of credit. You may earn up to four credit hours and will be
evaluated jointly by program faculty and by employers on a Credit/No Credit basis. **Prerequisite:** permission of advisor. (1-4, 0T+1-4L)

**300 TECHNICAL COMMUNICATION IN THE STEM FIELDS** Students will write and present for the technical areas of science, technology, engineering and math. Students will write abstracts, research proposals and findings, as well as prepare a poster presentation acceptable for professional submission. **Prerequisite:** ENG 112. (3, 3T+0L)

**305 FUNDAMENTALS OF HAZARD RECOGNITION, RISK ASSESSMENT, AND CONTROLS** Students will recognize and evaluate controls for chemical, physical (noise, radiation, thermal), biological, and ergonomic stressors in the work environment. **Prerequisites:** ES 112/L and CHEM 121/L (3, 3T+0L)

**307 ATMOSPHERIC SCIENCE** You will study how the climate system works, how climate has changed in the past, and how it is now being changed by human activity. You will develop the skills needed to analyze and critically evaluate public discussions of climate issues and written and oral communication skills in the context of climate and Earth system science. **Prerequisites:** ES 112/L, BIOL 203, CHEM 121/L, and MATH 162. (3, 3T+0L)

**308 INVASIVE SPECIES** You will evaluate the role and scope of introduced species as well as their impact; conduct an overview of the problem and discuss how modes of exotics spread both historically and currently, as well as discussing terminology and political impacts. You will evaluate the common characteristics of successful invasive species, epidemics and epizootics, and describe the role of invasive species and the disruption of the normal ecosystem function by exotics. **Prerequisites:** ES 112/L and BIOL 203/L (3, 3T+0L)

**310 MENSURATION AND BIOMETRICS** You will develop skills in mensuration, the practice of measuring, particularly lengths and angles, and Biometrics, the set of techniques for measurement and analysis of biological phenomenon. You will develop a deeper understanding of forest inventory techniques and various sampling designs used in forest inventory. **Prerequisites:** ES 103, FOR 113, and MATH 145 (3, 3T+0L)

**311 PLANT PATHOLOGY** You will study the historical foundation of plant pathology and will evaluate the current and future nature of plant disease and its causal agents (fungi, bacteria, viruses, nematodes, environmental/chemical agents) and of symbionts and their effect on plant health and disease resistance, epidemiological considerations on disease spreading and major outbreaks, and disease control and management techniques. **Prerequisites:** ES 112/L and BIOL 203. (3, 3T+0L)

**316 FIRE MANAGEMENT AND RESTORATION** You will study the concepts fire management, which involves predicting fire behavior and effects, as well as making decisions appropriate to natural resource management objectives. You will also study fire management options, which vary greatly, and may include fuels management and education, fire suppression, wildland fire use, and igniting and managing a prescribed fire, and post-fire rehabilitation. **Prerequisites:** ES 112/L, ES 203, and BIOL 203/L. (3, 3T+0L)

**317 RANGELAND MANAGEMENT** You will study both the broad concepts of planning and the variety of planning approaches that are frequently used in rangeland planning on public and private land. You will also take an in-depth look at the management of grazing resources, including ecology, economics, burning, brush and weed control, grazing systems, and complementary grazing crops. You will address related topics, such as job satisfaction and leadership, communications, professionalism, ethics, and problem-solving. **Prerequisites:** ES 112/L, ES 120, and BIOL 203/L. (3, 3T+0L)
318 SILVICULTURE (WIC) You will study the physical, biological, social, historical, and economic forces shaping past and present forest structure and composition in the various regions of the United States, and you will learn how silvicultural practices have been adapted to address specific management problems. You will also evaluate silvicultural alternatives for addressing present and anticipated future forest management-related problems and issues. Prerequisites: ES 103, FOR 113, and BIOL 203/L. (3, 3T+0L)

319 PRINCIPLES OF WILDLIFE SCIENCE AND MANAGEMENT This course will cover ecological principles of the management of various groups of wildlife, the history and development of wildlife management as a science, characteristics of, and factors affecting wildlife populations, techniques and theories of management, and wildlife conservation. Prerequisites: ES 103 and BIOL 203/L. (3, 3T, +0L)

320 ENVIRONMENTAL ETHICS You will study values systems underlying human relations to the natural environment with emphasis on issues that arise when these values conflict, beginning with a discussion of our current environmental crises, different approaches to solving these crises, and issues of environmental justice and how science and knowledge affect decisions. (3, 3T+0L)

325 PRINCIPLES OF PHYSICAL HYDROLOGY In this course, you will be exposed to a qualitative introduction to the dynamics of watersheds and groundwater flow from an intuitive perspective, laying the foundations for understanding the physical mechanisms by which water is transported throughout a hydrologic system. Prerequisites: ES 250, MATH 162 (3, 3T+0L)

330 PRINCIPLES OF ENVIRONMENTAL AND OCCUPATIONAL HEALTH You will study the basics of environmental and occupational hazard assessment, how policies and programs are designed to protect communities and workers from health risks posed by chemical, biological, and physical agents. Prerequisites: ES 112/L, BIOL 203/L, and CHEM 121/L. (3, 3T+0L)

333 RADIATION BIOLOGY Survey of radiobiology: effects of differing types of radiation on matter, different radiations and their properties; detailed modes of action of radiation on biochemical and biophysical systems with emphasis on the large macromolecules of living tissue; nature of radiation damage to long-chain nucleic acid molecules; potential problems from indiscriminate use of radiation therapy and diagnostic x-rays, and nuclear facility accidents; effects of low-level radiation exposure. Cross-listed as RAD 233. Prerequisite: permission of instructor. (Spring only) (3, 3T+0L)

336 ENVIRONMENTAL SAMPLING AND INSTRUMENTATION You will study the fundamental standards of environmental monitoring, such as the application and use of site assessment, monitoring wells, permeability testing, soil vapor extraction and air sparging pilot installations. You will employ principles such as obtaining a representative sample; sample containment; design, installation site assessment, monitoring wells, permeability testing, soil vapor extraction and air sparging pilot installations. You will employ principles such as: obtaining a representative sample; sample containment; design, installation, testing and monitoring of wells; design, establish, and collect data from permeability testing, groundwater contour maps, sol vapor extraction, and air sampling systems, and pilot tests. Prerequisites: ES 112/L, ES 134, ES 201/L or CHEM 122/L, MATH 145, and BIOL 203/L. (3, 3T+0L)

336L ENVIRONMENTAL SAMPLING AND INSTRUMENTATION LAB In a hands-on setting students will participate in the fundamentals of environmental sampling and instrumentation to include data collection and evaluation. Prerequisites: ES 112/L, ES 134, ES 201 or CHEM 122/L; Co-requisite: ES 336. (1, 0T+1L)
ENVIROMENTAL LAW AND REGULATIONS  You will study the basic laws and regulations for the management of solid and hazardous wastes, as well as those regulations impacting national forests and agriculture. Supplemental courses will follow in the concentration areas. Prerequisites: ES 112/L. (3, 3T+0L)

PRINCIPLES OF CROP PRODUCTION  You will focus on the ecological principles underlying crop production systems, evaluating cropping systems, tillage methods, planting and harvesting methods, and crop growth patterns. You will examine crop production in the context of management approaches, environmental resources and constraints, and socioeconomic considerations. Prerequisites: ES 225. (3, 3T+0L)

PRINCIPLES OF SUSTAINABLE AGRICULTURE  You will study food production resources (soils, crops, and climates), with emphasis on the scientific principles of management that conserve or renew those resources for a continuing benefit to society. You will participate in field trips which stress hands-on experience with soils, crops, and descriptive climatology. Prerequisites: ES 225 and BIOL 203/L. (3, 3T+0S)

FIELD PROBLEM  Topic developed between student and advisor. Var. 1-6, (1-6T)

UNDERGRADUATE RESEARCH EXPERIENCE  This is a practical faculty-directed research experience for upper-division Environmental Science majors. During the regular semester you will perform 8-10 hours per week of work alongside your mentor in a project with a time frame agreed to by both, the student intern, and the mentor. Arrangements involve all aspects of environmental research that can include fieldwork, bench laboratory work, library research, or any combination of these activities. The mentor will actively engage you in sharing the responsibility for the research process. Fall & Spring (3, 3T, 0L)

ENVIRONMENTAL MANAGEMENT  You will integrate the principles of regulatory, social, and ecological concern in order to critically discuss and evaluate existing and proposed environmental management systems. By the end of this course, you will be able to design environmental management strategies which reduce environmental impacts, optimize resource use, promote waste reduction and recycling, prevent pollution, and involve public stakeholders, leading to superior environmental and bottom-line performance. Prerequisites: ES 112/L and BIOL 203/L. (3, 3T+0L)

COMMUNITY PARTICIPATION IN ENVIRONMENTAL PLANNING  You will study the ethical and regulatory implications for community involvement, participating in at least one community-related environmental initiative. You will evaluate methods for integrating community values and perspectives in overall decision making. Prerequisites: ES 112/L, ES 320, BIOL 203/L, and SPCH 130. (3, 3T+0L)

FOREST HEALTH, RESTORATION, AND MANAGEMENT  You will study the basic roles of natural disturbance agents, such as diseases, insects, fire, exotic organisms and their interactions in natural forest ecosystems. You will study how restoring and maintaining the health of forests has become an internationally recognized goal for resource management agencies, public conservation organizations, and society in general. Prerequisites: ES 103 and ES 318. (3, 3T+0L)

SOIL TESTING AND INTERPRETATION  You will become acquainted with soil composition and classification; relationship of soil to plant growth and animal health; use of fertilizers, erodian and control. You will study the four general components of soil testing: a) soil sampling and handling, b) analytical methodology involved in nutrient extraction from the soil by various tests, c) interpretation of the analytical results, and d) recommendations for the correction of soil nutritional problems, including acidity, deficiencies, imbalances, and excess levels. Prerequisites: ES 112/L, ES 201/L, BIOL 203/L, ES 211 and ES 211/L; Co-requisite: ES 410L. (3, 3T+0L)
410L SOIL TESTING AND INTERPRETATION LAB  Soil morphology and development. Field analysis and characterization of soil profiles, impact of weather, drainage, agricultural, industrial, and man-made factors on edaphic characterization. Co-requisite: ES 410. (1, 0T+1L)

411 SOIL MANAGEMENT AND FERTILITY  You will apply fundamental, unifying soil science principles in sustainable management of forested, agricultural and urban or constructed ecosystems, evaluating the relationships between nutrient response and chemical, physical, and biological properties of soil, and proposing the least impacting methods for remediation of contaminated soils and the re-introduction of nutrients and biota. Prerequisite: ES 410/L. (3, 3T+0L)

412 ENVIRONMENTAL HEALTH AND TOXICOLOGY  You will study the relationship between human health and environmental toxicants from an interdisciplinary perspective. You will become familiar with a broad range of concepts, including the nature of hazards, epidemiological study design, exposure assessment, toxicology microbiology, risk assessment, risk perception, and risk management. You will learn to draw the links among human health and sustainability, urbanization, energy production, and relevant ethical issues. Prerequisites: ES 112/L, ES 201/L or CHEM 122/L, BIOL 203/L, and BIOL 210/L. (3, 3T+0L)

414 WILDLAND FIRE MANAGEMENT  In this course, you will focus on fire in restoration ecology and the effects of fire on plants, animals, soils, water, and air, with an emphasis directed toward fire as an ecological process in wildland ecosystems. You will study how to characterize and predict fire effects over time and space, as well as how to apply this to restoration ecology. Prerequisites: ES 318. (3, 3T+0L)

415 ENERGY AND RESOURCE DEVELOPMENT (WIC)  You will study a wide variety of topics in energy and resource conservation and development, from a global scale to those of industry, buildings, and products, with emphasis on the evaluation of systems with particular attention given to dynamic and efficient systems and input/output models. Topics you will study include experimental and theoretical research in energy technology; development, application, and evaluation of methods and tools for the analysis of technical systems, with respect to the environment, sustainable development, and energy. (3, 3T+0L)

416 IRRIGATION AND DRAINAGE  You will participate in the design, management, and evaluation of irrigation and drainage systems, addressing the concepts and processes of system design, soil-water-plant relationships, evapo-transpiration and water requirements, effective water use, irrigation scheduling, infiltration, and irrigation systems planning. Prerequisites: ES 112/L and MATH 162. (3, 3T+0L)

420 ECOLOGY AND HYDROLOGY OF SOUTHWESTERN RIVER SYSTEMS  Students will experience the unique geology, ecology, and dynamic hydrology of northern New Mexico as dramatically exposed along the banks of the Rio Chama and Rio Grande River systems. The curriculum includes three days of classroom lecture followed by a multi-day whitewater field trip on the Rio Chama and/or the upper Rio Grande. The field trip will include a diverse set of hikes, lectures, and projects investigating multiple aspects associated with the evolution of Southwest river and riparian systems including the geological, ecological, natural resources, the social and political water issues and management practices. Prerequisite: Permission of Instructor. (2, 2T+0L).

457 ECONOMICS OF FOOD AND AGRICULTURE IN INDUSTRIAL DEVELOPMENT  You will survey recent research in the economics of how people meet their food needs and on the role of agriculture in economic development, addressing the transitioning
diets of traditional populations of the southwest region, and through observance of diet trends on a national and international basis. Prerequisites: ES 112/L, ES 201/L, and BIOL 203/L. (3, 3T+0L)

480 SENIOR CAPSTONE This will be the culminating experience for you, as an environmental science student. You will work with an academic advisor who will serve as your mentor in overseeing your final student internship with a government agency, environmental organization, or private company. In your fieldwork, you will search for solutions to real problems while working with professionals, acquiring important experience, and making connections with potential employers. You must identify a capstone field mentor who will provide on-site student support and who will periodically and ultimately evaluate your performance. (3, 0T+3L)

499 PROBLEM Topic developed between student and advisor (Var. 1-6 (1-6T).

### ENVIRONMENTAL AND FOOD SCIENCE PROFESSIONAL

Certification Test Preparation (ES)

Note: These courses are test-preparation courses; their completion does not guarantee a passing score on an associated CHMM, CHMP, NEHA, or NRA exam.

351 ENVIRONMENTAL SANITARIAN This is a preparation course for the Registered Environmental Health Sanitation/Registered Sanitarian (REHS/RS) for the National Environmental Health Association (NEHA) Exam. (1, 1T+0S)

352 PROFESSIONAL FOOD SAFETY This is a preparation course for the Certified Food Safety Professional (CFSP) for the National Environmental Health Association (NEHA) Exam. (1, 1T+0S)

353 INTRODUCTION TO APPLIED ENVIRONMENTAL HEALTH This is a preparation course for the Certified Environmental Health Technician (CEHT) for the National Environmental Health Association (NEHA) Exam. (1, 1T+0S)

354 HAZARDOUS SUBSTANCES I This is a preparation course for the Registered Hazardous Substances Specialist (RHSS) for the National Environmental Health Association (NEHA). (1, 1T+0S)

355 HAZARDOUS SUBSTANCES II This is a preparation course for the Registered Hazardous Substances Professional (RHSP) for the National Environmental Health Association (NEHA). (1, 1T+0S)

356 ENVIRONMENTAL TECHNICIAN This is a preparation course for the Registered Environmental Technician (RET) for the National Environmental Health Association (NEHA). (1, 1T+0S)

357 ONSITE WASTEWATER TREATMENT SYSTEMS This is a preparation course for the Certified Installer of Onsite Wastewater Treatment Systems (CIOWTS) for the National Environmental Health Association (NEHA). (1, 1T+0S)

358 RADON MEASUREMENT This practical 16-hour course is designed to prepare radon measurement personnel to perform radon measurements, communicate radon behavior and risk to clientele, and to respond to technical questions as preparation for the associated NEHA Exam. (1, 1T+0L)

359 SAFE FOOD HANDLING Through the use of the National Restaurant Association Education Foundation (NRAEF) ServSafe® Coursework, you will be provided with up-to-date, comprehensive food safety training preparatory to certification. (1, 1T+0S)
FIBER ARTS

460  IHMM NATIONAL OVERVIEW COURSE®  This is a preparation course for the CHMM exam. Additionally, those who have already earned the CHMM® designation can take the NOC to obtain annual Credential Maintenance Points (CMPs). The NOC is designed as a broad introduction to the industry and provides instruction about laws and regulations, as well as about technologies and practices. It highlights topics and information which hazardous materials managers need to know to better perform their jobs. (1, 1T+0S)

FIBER ARTS (FA)

100  INTRODUCTION TO WEAVING  An introduction to design work using basic shuttle techniques; an introduction to warping the loom and understanding how the loom works. You will be required to complete a minimum of one weaving. (Var. 1-3, ) (1, .5T+.5S) or (2, 1T+1S) or (3, 1T+2S)

101  WEAVING I  Design work of quality textile, warping the loom, weaving special projects using different warps, wefts, techniques, and proper finishing methods. You will weave several rugs. Co-requisite: FA 101L. (Fall only) (1, 1T+0S)

101L  WEAVING I LAB  Practical application of warping looms and weaving. Five projects incorporating one, two, and three-shuttle techniques. Co-requisite: FA 101. (Fall only) (6, 0T+6S)

102A  KNITTING PART 1  You will study the basics of knitting. Graded CR/NC. (1, .5T+.5S)

102B  KNITTING PART 2  You will learn how to write, modify, and finish patterns while mastering knitting techniques and advanced patterns. Prerequisite: FA 102. (1, .5T+.5S)

103  SPINNING I  You will prepare fleece for spinning; including washing, carding, and blending of different fibers. You will spin on drop spindles and three different types of spinning wheels. (3, 1T+2S)

103A  SPINNING I PART 1  You will learn how to prepare fleece for spinning by washing and carding. You will study the basics of spinning on drop spindles. Graded on a CR/NC basis. (1, .5T+.5S)

103B  SPINNING I PART 2  You will learn how to spin on drop spindles and three different types of spinning wheels. Prerequisite: FA 103A. Graded on a CR/NC basis. (1, .5T+.5S)

103C  SPINNING I PART 3  You will polish your proficiency in spinning for specific projects using single and plied yarns. Prerequisite: FA 103B. Graded on a CR/NC basis. (1, .5T+.5S)

106A  WARP PAINTING PART I  Using Lanaset dyes, you will create a painted warp for a woven scarf made of protein fibers such as wool or silk. Graded on a CR/NC basis. (1, .5T+.5S)

106B  WARP PAINTING PART 2  Using the painted warp created in FA 106A, you will weave a scarf on a four-harness loom. Prerequisite: FA 106A. Graded on a CR/NC basis. (1, .5T+.5S)

107  TEXTILE COLOR AND DESIGN  You will explore elements of design and color theory. Emphasizes personal work with a focus on designing textiles. (2, 1T+1S)

107A  COLOR THEORY FOR TEXTILES  You will explore the principles of color theory and their application to textile design. This is 1/2 of FA 107. Graded on a CR/NC basis. (1, .5T+.5S)
107B DESIGN FOR TEXTILES You will explore the principles of design and its application to textiles. This is the second 1/2 of FA 107. **Prerequisite:** FA 107A. Graded on a CR/NC basis. (1, .5T+.5S)

109 LOOM BUILDING You will learn loom parts and how to maintain and repair any problem that may arise with a loom by constructing a two-harness or four-harness treadle loom. At the time you enroll for this class, you will be assessed a special materials fee to cover the cost of the lumber needed in constructing your loom. (1, .5T+.5S)

110 HISTORY OF TEXTILES History of world textile with emphasis on the southwest. (2, 2T+.0S)

112 VEGETAL DYES: IDENTIFICATION & SELECTION Identification and selection of various dye plants and materials available during prime season. You will learn techniques of dyeing, and explore the possible colors obtained from local plants, roots, and barks, as well as from ancient historical dyes. You will dry and preserve materials, keep records of dye samples, and recipes for future use. Fall only. (5, 1T+.45)

113A NATURAL DYES: LOCAL PLANTS You will dye wool using locally available plants by first going on gathering excursions to identify and collect dye plants in their natural environment, and then learn how to process the plants and how to dye with them, including preparation of the wool yarn, mordanting procedures, dye bath procedures, finishing the yarn, and record keeping. Graded on a CR/NC basis. (1, .5T+.5S)

113B NATURAL DYES: ANCIENT DYES You will learn to use natural dyestuffs that have been used historically around the world, learning the unique properties of cochineal, madder, logwood, alkanet, brazilwood, cutch, and osage orange. You will dye larger quantities with each material. In addition, you will learn to prepare an indigo vat and learn techniques for dyeing with indigo. You will review mordanting, safety procedures, and record keeping. Graded on a CR/NC basis. **Prerequisite:** FA 113A. (1, .5T+.5S)

113C NATURAL DYES: COLOR COMBINATIONS You will build on your knowledge of natural dyes to combine dyestuffs in varying proportions and over dye yarn with indigo to create a much larger range of colors. You will explore gradation, in which the color changes in increments from one hue to another. You will also learn how to shift colors with different modifiers, including pH and iron, to further expand the variety of colors you are able to produce. Graded on a CR/NC basis. **Prerequisite:** FA 113B. (1, .5T+.5S)

116 QUILTING Beginning students will learn the techniques of piecing a quilt together, preparing the top of the quilt and sandwiching, and they will explore the traditional designs and contemporary styles. Advanced students will learn strip piecing, simple patchwork, hand and machine appliques, and more advanced traditional piecework. Each student will design and finish a quilt. This class may be repeated twice for credit. (2, 1T+.15)

202 SPINNING II Selection of fibers, and processing and spinning techniques appropriate for the end use of yarn. Emphasizes controlling yarn size and twist; fibers such as silk, cotton, and alpaca will be introduced and you will practice various plying techniques. **Prerequisite:** FA 103 or permission of instructor. (Fall only) (2, 1T+.15)

202A SPINNING II PART 1 Through a combination of lecture, demonstrations, and hands-on activities, you will prepare fiber for spinning and develop a personal portfolio in your mastery of hand-spinning techniques. This represents 1/2 of FA 202. **Prerequisite:** FA 102 or FA 102C. Graded on a CR/NC basis. (1, .5T+.5S)

202B SPINNING II PART 2 In this second half of FA 202, you will prepare fiber for spinning, using cotton, silk, and other exotic fibers. **Prerequisite:** FA 202A. (1, .5T+.5S)
208 MARKETING OF WOVEN GOODS You will create a marketing plan for selling to the occasional retail customer or for running a full-time retail or wholesale business with employees; emphasis on pricing, consignment, and mail order. *Prerequisite:* MATH 100N with a grade of “C” or better. (2, 2T+0S)

210 WEAVING II Introduces you to basic tapestry techniques, including vertical and diagonal designs. *Co-requisite:* FA 210L. (1, 1T+0S)

210L WEAVING II LAB Practical application of vertical and diagonal designs. Weaving of samplers incorporating all geometric shapes. You will design and weave your own textile. *Co-requisite:* FA 210; *Prerequisites:* FA 101 and 101L with grades of C or better, or instructor permission. (6, 0T+6S)

213 WEAVING III Study of color gradation with applied skills. *Co-requisite:* FA 213L. (1, 1T+0S)

213L WEAVING III LAB You will design and weave a free form or pictorial tapestry. *Co-requisite:* FA 213. *Prerequisites:* FA 101 and 101L, FA 210 and 210L, or permission of instructor. (6, 0T+6S)

216 RUG RESTORATION Covers the basic materials and techniques employed in the restoration of hand-woven textiles, including Navajo, Mexican, Rio Grande, Chimayo, and Oriental Kilns; evaluation of damage, warp replacement, weft reweaving, design study, and color matching through dyeing with natural and annaline dyes. You will work on your own textiles or on those provided by the instructor. (2, 1T+1S)

218 RAG RUG WEAVING History of rag rugs in the United States and the Southwest; emphasizes using a variety of cloth materials (rags) and the process of preparing materials. You will incorporate your own design and weave a rug or pictorial tapestry for display. (2, 0T+2S)

225 FOUR HARNESS WEAVE Application of four harness weaves which include twills, double weaves, and overshot, as well as a comprehensive understanding of reading drafts and treading. *Prerequisite:* FA 101, or permission of instructor. (4, 1T+3S)

225A FOUR HARNESS WEAVE 1: WEAVING STRUCTURES: You will study the theory and applications of weaving on a four harness loom. You will cover drafting and basic weaving structures, such as twills, in addition to project planning and the mechanics of weaving on four harness. Graded on a CR/NC basis. (1, .5T + .5S)

225B FOUR HARNESS WEAVE 2: JERGA You will study the jerga, a traditional 2/2 twill woven in wool. Graded on a CR/NC basis. (1, .5T + .5S)

225C FOUR HARNESS WEAVE 3: SPECIAL PROJECTS You will read a pattern draft to determine the threading, tie up, and treading for your project. Graded on a CR/NC basis. May be repeated up to 2 crs. (1, .5T + .5S) or (2, 1T + 1S).

227 SYNTHETIC DYES You will learn to create a color rotation atlas which is defined by three attributes: hue, value, and chroma, which respectively represents the color family (lightness, darkness, and color strength) by the mixing of dyes. Color theory arranges the color points on a huge triangle based on the four variable physical qualities of the color family, and the rotation system gives the dye formula for each color point. You will work on special projects and will also create your own color atlas from which the dye formula for any desired color can be determined. *Prerequisite:* MATH 100N. (3, 1T+2S)

227A SYNTHETIC DYES PART I You will learn the basic techniques of dyeing wool using acid dyes (Lanaset) while following step-by-step instructions on yarn preparation, dye methods, and finishing methods. You will create yarn samples of each Lanaset hue and
learn about the three characteristics of color hue, value, and chroma. This is 1/3rd of FA 227. Graded on a CR/NC basis. (1, .5T+.5S)

227B SYNTHETIC DYED PART 2 Building on the basic dye techniques studied in FA 227A, you will explore color relationships through color samples. You will study gradation techniques which will allow you to produce a color atlas to serve as a reference for future dyeing. Graded on a CR/NC basis. Prerequisite: FA 227A. (1, .5T+.5S)

227C SYNTHETIC DYED PART 3 Building on the basic dye techniques in FA 227A and with the help of the color atlas you created in FA 227B, you will learn how to creatively apply your knowledge of the dye process and how to create any color you wish using Lanaset dyes. You will primarily focus on methods of experimentation with color and the effects that can be created by changing very small parts of the dye formula. You will choose from various techniques for a final project. Graded on a CR/NC basis. Prerequisite: FA 227B. (1, .5T+.5S)

228L SPECIAL PROJECTS You will work on individual special projects, with minimal assistance, with permission of the instructor. Prerequisite: FA 101 and 101L. (3, 0T+3S)

229A GRADATION DYEING PART 1 Using Lanaset dyes and protein fibers, you will create a gradation which can be used as the warp for a woven scarf or as the weft for a tapestry. Graded on a CR/NC basis. (1, .5T+.5S)

229B GRADATION DYEING PART 2 Using the gradations dyed in FA 229A, you will weave a scarf on a four-harness loom. Graded on a CR/NC basis. Prerequisite: FA 229A. (1, .5T+.5S)

230  WEAVING PRACTICUM You will have hands-on experience in a weaving studio, gallery, workshop, or classroom setting following individualized learning objectives prearranged between yourself and the program director. The director and gallery/workshop staff will work closely together on your work and/or activities. Forty-eight work hours are required to earn one semester hour of credit. Graded on a CR/NC basis. Prerequisite: Permission of program advisor. (4, 0T+4S)

231  BASKETRY: COILING, TWining, AND PLAITING Covers the techniques of coiling pine needles, sumac, and grasses to make small baskets; twining round, reed, willow, and man-made materials to make woven baskets; and plaiting flat reed cane and splints to make traditional woven baskets. (Spring only) (3, 0T+3S)

234  FUNDAMENTALS OF IKAT You will design and create a geometric weft IKAT; history of IKAT weaving. (1, 0T+1S)

235  PICTORIAL WITH IKAT You will design and create a weft IKAT weaving with simple pictorial designs as seen in historical textiles of the American Southwest and Central America. (1, 0T+1S)

236  ADVANCED IKAT Creation of warp and weft IKAT weaving through applied knowledge and skills; exploration of more advanced techniques for freer expression. (Spring only) (1, 0T+1S)

FILM AND DIGITAL MEDIA ARTS (FDMA)

101  INTRODUCTION TO DIGITAL VIDEO PRODUCTION Introduction to digital video production as it relates to digital media and documentary story telling. Emphasis will be on the fundamentals of videography with a broad exploration of basic camera skills and novice non-linear editing techniques with Windows Movie Maker 2 and iMovie. One short film will be the final assignment. (4, 3T+1S)
102 INTRODUCTION TO DIGITAL AUDIO DOCUMENTARY An introduction to basic digital studio and field production techniques and the procedures necessary for gathering aural history for the production of documentary radio/web broadcast. You will learn how to select and edit excerpts from your interviews to produce radio vignettes. You will study Pro Tools, basic audio field recording with digital technology, the practice of aural history, and the art of sound collage. (4, 3T+1S)

107 DIGITAL MEDIA LITERACY You will create a personal web page which will serve as the foundation for exploring communication and web publication/syndication in the modern world. (4, 3T+1S)

110 NON-LINEAR EDITING: LIGHTWORKS® Introduction to basic editing techniques using the popular professional editing software Lightworks®. You will learn the fundamentals of non-linear editing used in all film and video productions. You will practice picture editing, sound editing, and music editing. You will discuss and demonstrate solutions to real-world problems encountered in editing rooms around the world—such as poor photography and poor direction. (4, 3T+1S)

111 DIGITAL MEDIA PRODUCTION I This class will serve as a foundational hands-on course for intermediate and advanced courses in the FDMa program and introduce roles and positions through participation in student production projects. (4, 2T+2S)

115 INTRODUCTION TO DOCUMENTARY FILM MAKING You will learn how to make a short documentary film on an assigned subject drawn from topical events in northern New Mexico. The process will typify film-for-hire conditions and will be an exercise in filmmaker/client relations. The teacher and staff will play the role of client. Examples could be profiling a local artist, a new business enterprise, or exploring a local historical event. (4, 3T+1S)

120 DIGITAL AUDIO PRODUCTION You will explore the tools and techniques of digitized sound production by focusing on a series of individual and collaborative projects. Cross-listed as MUS 123. (4, 3T+1S)

125 DIGITAL MUSIC PRODUCTION TECHNIQUES You will build on skills learned in digital audio Production and progress from the technical to the procedural and aesthetic aspects of recording. Prerequisite: FDMa 120 or MUS 123. Cross-listed as MUS 134. (4, 3T+1S)

140 DIGITAL IMAGING I: ADOBE PHOTOSHOP In this course you will become familiar with Photoshop, digital camera, scanner and printer. (4, 3T+1S)

155 DIGITAL ANIMATION I: 3-D MAX During the first half-semester of this course you will spend gaining a working knowledge of 3-D MAX.. During the second half you will study storyboarding and executing an animated sketch. (4, 3T+1S)

175 WEB DESIGN I Introduces you to the production of web page design and publication on the Internet. Prerequisite: FDMa 140 (4, 3T+1S)

201 ADVANCED DIGITAL VIDEO PRODUCTION You will study advanced camera functions from a technical standpoint including maintaining optimum picture quality while filming, achieving higher caliber sound fidelity, and multi-camera shooting procedures. Prerequisite: FDMa 101. (4, 3T+1S)

211 DIGITAL MEDIA PRODUCTION II This class will serve as an advanced hands-on production centered course for FDMA Majors nearing graduation. Students will be required to function in leadership roles on Student developed production projects. Prerequisite: FDMa 111. (4, 2T+2S).
240  DIGITAL IMAGE II :ADOBE PHOTOSHOP ®  In this advanced Digital Imaging course, you will cover the preparation of images for advanced output and web publication using Adobe Bridge ®, Illustrator ®, and Photoshop ® software. **Prerequisite:** FDMA 140 (4, 2T+2S)

255  DIGITAL ANIMATION II  You will cover the development and execution of an animation clip that will be edited into a class project. **Prerequisite:** FDMA 155. (4, 3T+1S)

275  WEB DESIGN II  You will study advanced production of web page design and publication on the Internet. **Prerequisite:** FDMA 175. (4, 3T+1S)

280  HISTORY OF CINEMA  You will study the historical perspective of cinema from the genesis of the moving image to modern digital filmmaking. **Prerequisite:** ENG 109N. (3, 3T+0S)

290  MULTIMEDIA  Introduces you to multimedia, utilizing electronic imaging, animation, digital editing and digital audio production skills. **Prerequisites:** FDMA 140 and FDMA 155. (4, 3T+1S)

295  DIGITAL MEDIA PORTFOLIO  You will create your own digital portfolio with a strong emphasis on editing, content, and presentation. You will engage in discussions on how to market your work to enter advanced degree programs or the work force. **Prerequisite:** FDMA 201, or permission of instructor. (2, 1T+1S)

296  DIGITAL MEDIA PRODUCTION - INTERNSHIP  For this capstone course in the FDMA program, you will take on 100% of the duties necessary to produce professional quality film/television content. You will work with professional union and non-union mentors on professional NM Film projects throughout the state. **Prerequisite:** FDMA 111 & 211 (Summer) (6, 0T+6S)

**FILM TECHNICIAN TRAINING (FTT)**

FTT 103 and FTT 104 are offered only as summer intensives.

103  FILM CREW I  You will study set etiquette, jargon and terminology, film history, basic equipment handling in all the craft areas, and OSHA training. In addition to classroom instructions, job shadowing, and hands-on applications, you will be spending a significant time investment outside of class. (Summer) (9, 6T+3S)

104  FILM CREW II  As you continue your training, you will begin to specialize in the film/studio crafts based on demonstrated skills and interest. You will work on group projects within the class and on outside film projects, with processional mentors as available. You will also mentor high school students. You will be spending a significant time investment outside of class. **Prerequisite:** FTT 103. (Summer) (9, 6T+3S)

105  FILM CREW III—INTERNSHIP  In the final course in this program, you will take on 100% of the duties necessary to produce professional quality film/television content. You will work with union mentors on professional NM Film Office FTTP projects throughout the state. **Prerequisite:** FTT 104. (Fall) (6, 0T+6S)

**FORESTRY (FOR)**

101  INTRODUCTION TO FORESTRY  You will study forest resources and their management, including a history of forestry in America, an introduction to forest growth and development, the multi-use concept of forest management control of damaging agents, measurement, and wildlife. Cross-listed as ES 101. (3, 3T+0S)

113  DENDROLOGY  You will focus on the identification of forest tree and shrub spe-
cies, with emphasis on identification of trees by cone, bark, needle, and wood. Teaches use of keys with emphasis on species found in the southern Rocky Mountain region. Involves some field work. (3, 3T+0S)

123  **FOREST ECOLOGY** You will study forest ecosystems, assemblages of trees and their communities and the environments in which they live; introduction to silvics and the study of silviculture. (3, 3T+0S)

**GEOGRAPHY (GEOG)**

111  **WORLD GEOGRAPHY** Geography of the major land forms, environments, ethnic cultures, population and resources of the world, and the inter-relationships among them. (3, 3T+0S)

**GEOLOGY (GEOL)**

101  **PHYSICAL GEOLOGY** Materials composing the earth and the work of agencies modifying its surface. *Co-requisite:* GEOL 101L. (3, 3T+0L)

101L  **PHYSICAL GEOLOGY LAB** Chemical and physical characteristics of rocks, gems, and minerals. Includes field trips to discuss local area geomorphologic, stratigraphic, and sedimentation sites and geologic process involved in their creation. *Co-requisite:* GEOL 101. (1, 0T+1L)

102  **HISTORICAL GEOLOGY** History and evolution of the earth; rise and succession of various forms of life. *Prerequisite:* GEOL 101; *Co-requisite:* GEOL 102L. (3, 3T+0L)

102L  **HISTORICAL GEOLOGY LAB** Detailed Study of sedimentary rocks and fossils. Interpretation of geologic maps and cross-sections. Field trips to areas of sedimentary geology. *Co-requisite:* GEOL 102. (1, 0T+1L)

**HEALTH, PHYSICAL EDUCATION, AND RECREATION (HPER)**

All HPER courses are graded Credit/No Credit (CR/NC).

101  **CONDITIONING EXERCISES** Various exercises designed to promote endurance, strength, flexibility, and general physical fitness. (1, 0T+1S)

102  **AEROBICS I** Exercise and movements for general physical fitness. (1, 0T+1S)

103  **TENNIS** Instruction and participation in the basic skills, rules, and equipment of the game of tennis. Both singles and doubles games will be taught. (1, 0T+1S)

104  **STEP AEROBICS I** Exercise and movements for developing strength, endurance, and flexibility, with a combination of general physical fitness. (1, 0T+1S)

105  **BASKETBALL** Instruction and participation in the game of basketball, including rules, skills, shots, and strategies. (1, 0T+1S)

106  **GOLF** Focuses on the development of knowledge and skill competencies necessary to play golf; emphasis is placed on skill progressions, practice opportunities, and error diagnosis and correction. (1, 0T+1S)

107  **WALKING/RUNNING FOR FITNESS** Designed for all levels, including walkers, joggers, race walkers, and competitive marathon runners. (1, 0T+1S)

110  **SWIMMING** A course for those who can swim, not for those who want to learn the basics. It involves supervises lap swimming, including some instruction in swimming for fitness. (1, 0T+1S)
111 WATER AEROBICS  Exercises and movements in waist-high water, and usually performed to music, to promote general fitness and health. This course is self-paced and non-competitive, and the ability to swim is not required but preferred. (1, 0T+1S)

112 WEIGHT TRAINING  Skill training for developing strength and endurance with free weights and machines, emphasizing knowledge of equipment, lifting safety, and theories of training. (1, 0T+1S)

113 RACQUETBALL I  Through actual play, you will learn the basic skills, rules, and strategies of racquetball. (1, 0T+1S)

114 BEGINNING VOLLEYBALL  Teaches you the basic skills and rules of volleyball, emphasizing learning basic bump, set, and spike which are the fundamentals of volleyball skills. (1, 0T+1S)

115 SOFTBALL  Instructs you in the basic skills, strategies, and rules of softball. (1, 0T+1S)

116 AIKIDO I  Basic philosophy, history, and movements of the martial art AIKIDO. (1, 0T+1S)

117 INTRODUCTION TO KUNDALINI YOGA  Introduces you to Kundalini Yoga techniques and postures, emphasizing meditation and breathing. (1, 0T+1S)

118 COUNTRY WESTERN DANCE  Introduces you to Country and Western two-step and line dance. (1, 0T+1S)

119 HATHA YOGA  An integrative approach to Hatha Yoga, exploring philosophy, physical and energetic systems, asanas, pranayama, and yoga therapy. (1, 0T+1S)

120 DOWNHILL SKIING  Designed for all levels of downhill skiing. (1, 0T+1S)

121 CROSS-COUNTRY SKIING  For all levels of cross-country skiing. (1, 0T+1S)

122 BOWLING  Introduction to and practice in the basic skills of bowling. (1, 0T+1S)

123 DANCE AEROBICS  Dance movement for general physical fitness. (1, 0T+1S)

124 KICKBOXING AEROBICS  An intense aerobic workout using the moves of kickboxing to achieve better coordination and balance. (1, 0T+1S)

125 POWER CONDITIONING I  A conditioning course emphasizing aerobics, weight training and cardiovascular conditioning. (1, 0T+1S)

126 ART OF KARATE  Based on standards of the Japan Karate Association and the International Shotokan Karate Federation, through this course you will develop self-discipline, self-control, self-esteem, and self-defense. This course includes all aspects of Karate training, including calisthenics, training in basic Karate techniques, basic sparring drills, and Kata, including self-defense techniques. It will be an excellent cardio-vascular exercise class as well as muscle toner and conditioner. (1, 0T+1S)

127 TAI CHI CHUAN I  Includes an introduction to the basic principles and background of Tai Chi, practice of Qigong exercises, and study of the Yang style long form. (1,0T+1S)

128 TAI CHI CHUAN II  Continuation of the study of the Yang style long form began in HPER 127; further develops an understanding and practice of the basic principles of Tai Chi and Qigong. (1,0T+1S)

129 PILATES  You will learn the basic concepts and skills in the Pilates method of non-impact mat conditioning designed to increase core strength and stabilization, muscle tone, balance, coordination, and flexibility which develop whole body awareness and control, and which can be modified to various fitness levels. (1, 0T+1S)

130 INTERMEDIATE SWIMMING  Designed for individuals with a swimming back-
ground, this course begins with review of beginning techniques and continues on to five swimming strokes, with an introduction to the butterfly. Emphasis is on building endurance in preparation for Lifeguard Training course. May be repeated once for credit. **Prerequisite:** Must have swimming background and familiarity with basic swimming strokes. (1,0T+1S)

**131  WEIGHT LOSS YOGA** You will learn intermediate Kundalini Yoga in support of weight loss, through its imparting a deeper experience of yogic technology in working on helping you achieve self control and self fulfillment. (1, 0T+1S)

**132  LIFE-GUARDING TODAY** You will learn to recognize hazardous situations and prevent injury, with an emphasis is on supervising swimmers, minimizing dangers, preparation of facility records and reports. You will learn rescue skills with a concentration on preventive life-guarding. When you successfully complete this course, you will acquire certification in Life-guarding Training, which includes Professional CPR. **Prerequisite:** You must know all strokes (free style, breaststroke, sidestroke, and back-crawl) and be able to swim 500 yards of each stroke. (2, .5T+1.5S)

**133  STRESS RELIEF YOGA** You will learn intermediate Kundalini Yoga in support of stress relief, through its imparting a deeper experience of yogic technology and the principles for managing stress and renewing vitality on a constant basis. (1, 0T+1S)

**134  WOMEN’S SELF DEFENSE** You will learn to use your strength against a perpetrator’s weaknesses to end physical threat by using your mind and body as defensive measures against an attacker. (1, 0T+1S)

**135  LEADERSHIP SKILLS IN MOVEMENT EDUCATION FOR ELEMENTARY SCHOOL STUDENTS** With a group setting, you will plan and participate in physical movement activities with elementary school students in their local schools, thus integrating leadership skills, physical and movement education, and service learning. (1, 0T+1S)

**202  AEROBICS II** Continuation of Aerobics I, with emphasis on greater endurance. **Prerequisite:** HPER 102. (1, 0T+1S)

**204  STEP AEROBICS II** You will learn exercise and movements for developing strength, endurance, and flexibility, with a combination of general physical fitness. **Prerequisite:** HPER 104. (1, 0T+1S)

**213  RACQUETBALL II** In this continuation of HPER 113, you will put more emphasis on more advanced skills and strategies. **Prerequisite:** HPER 113. (1, 0T+1S)

**216  AIKIDO II** Continuation of Aikido I, with emphasis on greater skills. **Prerequisite:** HPER 116 or permission of instructor. (2, 0T+2S)

**223  INTERMEDIATE VOLLEYBALL** Volleyball competition and play. Focus will be on using skills to learn and develop strategies for competitive play. (1, 0T+1S)

**225  POWER CONDITIONING II** This is an advanced cardiovascular conditioning course, utilizing weight training, aerobics, and exercise equipment. **Prerequisite:** HPER 125. (1, 0T+1S)

**237  YOGA FOR ADDICTION** This course is an introduction to yogic addiction recovery technology and the Science of Humanology, helping to resolve dependent behavior, including alcohol and drugs, smoking, and gambling. The approach combines the thousands of years of yogic approach with the modern innovations of the West. (2, 1T+1S)

**250  TECHNIQUES OF COACHING BASKETBALL** You will develop the knowledge and skill competencies you need for coaching, with an emphasis on skill progressions, practice opportunities, and error diagnosis and correction. **Prerequisite:** basic basketball skills. This course does not satisfy HPER requirements for graduation. (2, 1T+1S)
HEALTH SCIENCE (HSCI)

102 AMERICAN HEART ASSOCIATION CPR The gross anatomy and physiology of the heart, electrical pathway, and respiratory system are discussed in preparation for CPR. Includes primary assessment and evaluation of ABCs. Successful completion of this course will result in American Heart Association CPR certification. (0.5, 0.5T+0L)

109 AMERICAN RED CROSS CPR/FIRST AID Covers basic emergency/first aid procedures which include shock, bleeding, poisoning, burns, musculoskeletal injuries and other medical emergencies. Includes proper basic life-saving techniques used in aiding victims of heart attack, suffocation, drowning, electrocution, and airway obstruction. Successful completion of this course will result in CPR and First Aid certification according to the American Red Cross Standards. (0.5, 0.5T+0S)

110 ANATOMY & PHYSIOLOGY I FOR MASSAGE THERAPISTS You will cover the gross anatomical structures of the human body and the normal physiological functions of the musculoskeletal system, nervous systems, and the integumentary system. If you are tracking into the Nursing Program or intending to transfer, do not take this course: take instead BIOL 237 and 237L. Prerequisites: ENG 109N and MATH 100N. (Fall only) (4, 4T+0L)

111 ANATOMY & PHYSIOLOGY II FOR MASSAGE THERAPISTS In a continuation of HSCI 110, you will cover the gross anatomical structures of the human body and the normal physiological functions of the endocrine, cardiovascular, respiratory, lymphatic, gastrointestinal, urinary, and reproductive systems. If you are tracking into the Nursing Program or intending to transfer, do not take this course: take instead BIOL 238 and 238L. Prerequisite: HSCI 110. (3, 3T+0L)

112 PATHOLOGY FOR MASSAGE THERAPISTS In order to practice safely, as a massage therapist you will need a basic understanding of pathological processes. This course, therefore, will introduce you to the types of disorders that occur in each body system and provide you with more specific knowledge of the signs and symptoms of selected disorders and the ability to recognize if massage is indicated or contraindicated. Prerequisites: HSCI 110 or BIOL 237 and 237L, and BIOL 238 and 238L. (3, 3T+0L)

114 KINESIOLOGY FOR MASSAGE THERAPISTS You will focus on efficient and safe movement patterns and on the basic principles of biomechanics and kinesiology. You will study the muscle origin and insertions, proprioception, the Lever system, and how to identify the planes of the body for massage therapy. You will also study muscle testing techniques of applied kinesiology. Co-requisite: HSCI 110. (Fall) (2, 2T+0L)

125 MEDICAL TERMINOLOGY Covers medical terminology used by health care professionals, including medical word construction and use; spelling, pronunciation of terms, common medical abbreviations, and the use of a medical dictionary. Pre- or Co-requisite: ENG 109N. (2, 2T+0L)

152 LEGAL AND ETHICAL ISSUES IN MASSAGE THERAPY Presents the legal and ethical standards currently existing in the field of Massage Therapy. Topics include the professional codes of ethics, informed consent, confidentiality, ethical principles of autonomy, justice, and truth telling, and the ethics of touch therapies. (Fall only) Prerequisite: ENG 109N. (2, 2T+0S)

158L FIRST RESPONDER Trains you to perform a basic primary assessment and maintain the individual until help arrives. Appropriate for law enforcement officers, members of fire or rescue services, or company employers. Prerequisite: Current American Heart Association BLS CPR certification or HSCI 102. (2, 1T+1L)
HEALTH SCIENCE

159L EMT-BRIDGE Designed for certified First Responders who wish to advance to the level of EMT-B. The Bridge course builds on the training of the First Responder and provides an intensive version of the EMT-B curriculum condensed into 80 hours. To be eligible you must have completed the First Responder training within the past 2 years, although exceptions will be considered on a case-by-case basis. Upon successful completion of the course, you will be eligible to take the state licensing exam for EMT-B. You must be at least 18 years old to register for the state licensing exam. (5, 4T+1S)

160 EMERGENCY MEDICAL TECHNICIAN—BASIC (EMT-B) A U.S. D.O.T. EMT-B course designed for individuals who have an interest in working in the pre-hospital setting. Trains ambulance and rescue personnel to recognize and stabilize patients with life-threatening emergencies at the scene and to transport using specialized items of equipment. When you complete this course you will be eligible to take the state licensing exam which is required to become an EMT in New Mexico. Co-requisite: HSCI 160L; Prerequisite: HSCI 102, or current American Heart Association CPR certification. You must be at least 18 years of age to register for the state board exam; however, high school students are eligible for concurrent enrollment with permission from the department. In general, those 17 years of age may take the course and apply for licensure; however, such applicants must meet special criteria (check with Northern’s Health Science department). In order to register to take the state board exam to become a licensed EMT-B, you must earn 80% or better in this course and also pass HSCI 160L. Prerequisite: permission of instructor or department chair; Co-requisite: HSCI 160L. (6, 6T+0L)

160L EMERGENCY MEDICAL TECHNICIAN—BASIC (EMT-B) LAB Skills lab for HSCI 160 utilizing specialized items of equipment necessary for pre-hospital care and transport of the ill or injured. Co-requisite: HSCI 160. (2, 0T+2L)

161 EMERGENCY MEDICAL TECHNICIAN—COMBO REFRESHER Provides you with an update in new protocols, skills, and medical information to already-licensed first responders, EMT-B’S & EMT-I’S. Required every two years to maintain state or national certification. Prerequisite: Certification as First Responder. (1.5, 1.5T+0L)

163 EMT—INTERMEDIATE This course, in combination with EMT-Intermediate Lab and Practicum, consists of 200 hours of instruction (lecture, lab, and practicum), covering the EMT-B review and intermediate curriculum, which consists of assessment of trauma and medical patients, airway management, shock, respiratory emergencies, fluids and electrolytes, adult and pediatric IV therapy, intraosseous therapy, inhalation therapy, obstetrical emergencies, pediatric emergencies, IV and subcutaneous medication administration, cardiovascular emergencies, toxicological emergencies, diabetes management, and medico-legal issues. You must earn 80% or better in HSCI 163, receive “credit” for both HSCI 163L and 164L to be eligible to register to take the state board exam to become an EMT-Intermediate. Prerequisites: EMT-Basic licensure with current CPR card. Corequisites: HSCI 163L and HSCI 164L. (4, 4T+0L)

163L EMT—INTERMEDIATE LAB You will learn under direct supervision. to initiate IV therapy, inhalation therapy, IV administration, and subcutaneous injections on fellow students. You will also learn, in a supervised environment, medical assessment, trauma assessment, and medication administration. You must successfully complete HSCI 163, 163L, and 164L to be eligible to register to take the state board exam to become an EMT-Intermediate. Prerequisites: EMT-Basic licensure with current CPR card. Co-requisite: HSCI 163 and 164L. (2, 0T+2L)

164L EMT—INTERMEDIATE PRACTICUM You will complete a minimum of 72 hours of on-site clinical experience with documented, supervised assessment, IV initiation, and medication therapy. Optional skills may include subcutaneous injections and other
165 EMT–INTERMEDIATE REFRESHER Provides you with an update in new protocols, skills, and medical information to already licensed EMT’s. Required every two years to maintain state or national certification. **Prerequisites:** HSCI 163 and 163L. (2, 2T+0S)

166 WILDERNESS FIRST RESPONDER Effective Fall 2013, this course will no longer be offered.

204 NUTRITION Introduces you to the basic concepts of nutrition with an emphasis on health promotion and disease prevention and/or control. You will study nutrition across the life cycle including special needs of individuals, families, and cultures; concepts of diet care planning, including diet assessment, planning, implementation, and evaluation. This course will encourage you to practice sound nutritional practices in your daily life. **Prerequisite:** BIOL 110/L or CHEM 110/L. (3, 3T+0L)

280 RN FIRST ASSIST Effective Fall 2013, this course will no longer be offered.

280L RN FIRST ASSIST CLINICAL Effective Fall 2013, this course will no longer be offered.

**HISTORY (HIST)**

Note: Each course in this department bears a **Prerequisite** of ENG 109N or an adequate score on the Course Placement Evaluation.

101 WESTERN CIVILIZATION I Social, political, and economic development from ancient times to 1648. (3, 3T+0S)

102 WESTERN CIVILIZATION II Social, political, and economic development from 1648 to the present. (3, 3T+0S)

161 HISTORY OF THE UNITED STATES TO 1877 Economic, political, social, and intellectual development to 1877. (3, 3T+0S)

162 HISTORY OF THE UNITED STATES FROM 1877 Economic, political, social, and intellectual development from 1877. (3, 3T+0S)

220 SOUTHWESTERN WOMEN’S HISTORY You will explore women’s involvement in Southwestern history, including politics, economics, and culture. (3, 3T+0S)

230 CHICANO EXPERIENCE IN THE U.S. You will analyze and examine historical, cultural, political, and economic conditions of Chicanos in the U.S. (3, 3T+0S)

250 AMERICAN INDIAN HISTORY You will study the history of Indians of North America, both pre-Colombian and post-Columbian: social and political structures, cultural patterns, and the sequence of relationships both with other Indian groups and with the U.S. government. (3, 3T+0S)

260 HISTORY OF NEW MEXICO Survey from the explorations of Cabeza de Vaca to the present: the borderlands, Spanish, Indian, and Anglo contributions. (3, 3T+0S)

301 HISTORY OF JUDEO-CHRISTIAN MUSLIM RELATIONS You will examine the nature of Judeo-Christian Muslim relations in different contexts and years of world history, with focus ranging from the Crusades to modern experiences in the world. You will concentrate on historical and societal dimensions rather than theology. (3, 3T+0S)
HONORS (HON)

200 HONORS TOPIC This is an interdisciplinary exploration of specific topics designed to demonstrate the inter-connectedness of academic disciplines. May be repeated 4 times for credit. With permission of department chairperson, you may use this course to satisfy graduation requirements in the humanities or social/behavioral science general education core requirements, depending on the topic direction. Prerequisite: ENG 112 and a minimum 3.2 cumulative GPA. (3, 3T+0S)

HOSPITALITY, TOURISM, & RESTAURANT MANAGEMENT (HTRM)

130 INTRODUCTION TO MANAGEMENT IN THE HOSPITALITY INDUSTRY You will explore and analyze management opportunities, functions, methods, and concepts in various segments of the hospitality industry. Prerequisite: ENG 109N, or adequate score on Course Placement Evaluation. (3, 3T+0S)

133 CASINO MANAGEMENT You will study the historical and current perspectives of the gaming industry as those apply to management principles for casino operations, including coordination with traditional hospitality services. Prerequisite: HTRM 130. (3, 3T+0S)

135 HOTEL MANAGEMENT You will study rooms management, including front office, housekeeping, security, and engineering with emphasis on operations, coordination, and communication within and between departments. Prerequisite: HTRM 130. (3, 3T+0S)

140 FOOD AND BEVERAGE SERVICE MANAGEMENT You will study food and beverage service management systems in the hospitality field. You will learn to analyze cost control and quality control techniques. This course requires a work site practice location. Prerequisite: ENG 109N, or adequate score on Course Placement Evaluation. (3, 3T+0S)

142 RESORT AND CASINO MARKETING AND MERCHANDISING You will study merchandising and marketing as a system concerned with motivating consumers to purchase hospitality products and services. Prerequisite: ENG 109N, or adequate score on Course Placement Evaluation. (3, 3T+0S)

210 INTERNSHIP You will be involved in supervised off-campus non-group instruction including field experiences, practica, or internships with a requirement that you provide written and oral critiques of the activities required. Prerequisite: prior approval of proposed assignment by instructor and completion of all other courses. (3, 0T+3S)

HUMANITIES (HUM)

100 FIRST YEAR EXPERIENCE: THE HISTORY AND CULTURE OF NORTHERN NEW MEXICO We will examine the culture and history of northern New Mexico as it is experienced in the politics, education, arts and traditions of the region. As we analyze northern New Mexico through various types of literature, we will also examine our own particular beliefs and impressions. HUM 100 is designed to engage students in the college community and reinforce academic success skills. Prerequisite: ENG 108N (Fall, Spring, Summer) (3, 3T, 0L)

101 HUMANITIES I Comparative study of religion, philosophy, art, metaphysics, ethics, and aesthetics (B.C.E. to 1500 C.E.). Prerequisite: ENG 109N, or adequate score on Course Placement Evaluation. (3, 3T+0S)

102 HUMANITIES II Comparative study of religion, philosophy, art, metaphysics, ethics, and aesthetics (1500 C.E to present.). Prerequisite: ENG 109N, or adequate score on Course Placement Evaluation. (3, 3T+0S)
HUMANITIES

105  HUMANITIES AND THE SOUTHWEST  This course emphasizes local and regional history, anthropology, ecology, art and folklore as a familiar, verifiable bridge into the universe of human experience; local solutions of universal human problems; the human place in the natural and cultural environment of the Southwest; the human capacity for expression, creativity, and the nature and transmission of knowledge. Involvement is primarily based on personal investigative assignments.  Prerequisite: ENG 109N. (3, 3T+0S)

CS110  HUMANITIES II  Comparative study of religion, philosophy, art, metaphysics, ethics, and aesthetics (1500 C.E to present.). Prerequisite: ENG 109N, or adequate score on Course Placement Evaluation. (3, 3T+0S)

200  COMPARATIVE RELIGION  To gain a familiarity with the major religious traditions in the world, you will examine various religious traditions and practices, focusing on the similarities and differences between their conception of the Divine and different religious conceptions of what it means to live the “good life.” You will alternate between (a) reading secondary texts that compare religious traditions from an “outsider” perspective and (b) reading primary texts central to each religion. Prerequisite: ENG 109N. (3, 3T+0S)

204  HISPANIC FEMINIST STUDIES  You will be introduced to the interdisciplinary field of Chicana Studies, including historical research on labor, political involvement, cultural studies, and feminism. (3, 3T+0S)

220  SURVEY OF BIOETHICS  You will examine ethics within the fields of medicine, research, and holistic health care practice through such topics as informed consent, confidentiality, truth-telling, death and dying, mental illness, human experimentation, stem cell research, resource allocation, and justice in health care. You will study a selection of classic historical and contemporary case studies reflecting your pre-professional and personal interests. Cross-listed as IHS 220. (3,3T+0S)

246  TOURISM AND THE ARTS IN NEW MEXICO PUEBLOS  As tourism and art production have become principal means for the Pueblo peoples of New Mexico to support their families and communities, you will study this course through a multi-lens perspective of this economic, cultural, and aesthetic reality using historical readings, short films, and visits to local museums and Pueblo artists’ galleries. Prerequisite: ENG 111. Cross-listed as PIS 246. (3, 3T+0S)

281  SPIRIT OF PLACE, NATIVE SENSES OF PLACE  You will examine the meaning of place in your life and its particular importance to understanding Native identity and culture. You will focus on how to relate place with examples of how Native writers, poets, artists, storytellers, and other performers convey a “sense” or “spirit” of place in their work. Prerequisite: ENG 111. Cross-listed as PIS 281. (3, 3T+0S)

390  TOPICS IN THE STUDY OF RELIGION  Focused study of religious traditions and/or issues within the study of religion; content varies from semester to semester. The course involves readings, lecture, discussion, and composition. As topics vary, consult a current Schedule of Classes for specific content areas. Prerequisite: ENG 112. (Fall, Spring, Summer) (3, 3T)

460  MYTHIC WAYS OF KNOWING  In this class, you will explore mythology as a way of knowing. You will compare and analyze mythic stories from many different cultures in order to understand the patterns in these myths and what they have to say about the human being. In addition to analyzing mythological patterns in primary texts, you will examine various perspectives and systems of thought that seek to understand the meaning of mythological material. Prerequisite: ENG 111. (3, 3T+0S)
HUMANITIES AND SOCIAL SCIENCES (HSS)

222 TEACHING IN DIVERSE COMMUNITIES  In today’s world, teaching only those students who share a teacher’s or a community’s background is neither desirable nor likely to happen. Diversity in an educational setting requires teachers to develop a framework for understanding how issues of culture, class and language impact the educational institution and relevant socio-cultural and to practice socioeconomic pedagogy that affirms and legitimizes the diversity of students. Our hope is to prepare “transformative teachers” by not only critically examining self and education, but implementing classroom practices that promote equity and justice and rigorous academic achievement for all students. Prerequisite: ENG 109N. (3, 3T+0S)

288 FOUNDATIONS OF INTEGRATED STUDIES  This is an introductory course to the B.A. in Integrated Studies. Students will study the nature of disciplines and interdisciplinary work. They will also be introduced to the Integrated Studies degree and to inquiry-based learning that extends beyond the boxes of traditional disciplines. Prerequisite: ENG 111. (Fall, Spring). (3, 3T+0S).

310 PERSPECTIVES ON NEW MEXICO HISTORY AND CULTURE  Inhabited for thousands of years, New Mexico and its peoples have a complex and wondrous history. A steady stream of peoples and cultures, from the Pueblos to the Spanish, and from the United States to the National Laboratories, have shaped New Mexico and its environs. Through various readings taken up according to the conversational method, the student will thoughtfully engage in discovering what New Mexico is—its arts, politics, economics, history, and society. Prerequisites: ENG 112. (4, 4T+0S).

311 READINGS IN THE SOCIAL SCIENCES  In this seminar, taught in the conversational method, students will read and discuss great works and ideas from the major social sciences. The works from these disciplines, such as Psychology, Sociology, Anthropology, Political Science, and Economics, explore the social structures that influence how we understand our social environment and ourselves. Often these works—such as the works of the psychologist Sigmund Freud—have themselves influenced our shared and individual experience so profoundly that they shape, perhaps unknowingly, our view of the world. Prerequisite: ENG 112. (4, 4T+0S).

320 GENESIS OF MATHEMATICS AND SCIENCE  This seminar, taught according to the conversational method, will examine landmark works and ideas from the history of mathematics and the natural sciences. These disciplines represent a dialogue with a rich tradition. Isaac Newton once wrote that, “If I have seen a little further it is by standing on the shoulders of Giants.” In this class, we will be engaging in conversation with giants from the field of mathematics and the sciences by reading various texts and by asking basic questions that arise from those texts. We will be asking the most basic questions, the kind whose answers are mostly taken for granted in traditional mathematics and sciences classes. Prerequisite: ENG 112. (4, 4T+0S).

324 EPIC LITERATURE AS PSYCHOLOGICAL INSIGHT  You will learn to use literature as a way of developing a greater understanding of our own lives and the culture in which we live through a study of great literary works and their themes within the interdisciplinary context of the themes that the literature explores, and you will use critical reading of texts as a way of uncovering and understanding larger social, cultural, and psychological themes in the works. In addition, you will demonstrate an ability to use literature as a lens for exploring both cultural mythologies and the individual psyche. Prerequisite: ENG 112. (3, 3T+0S).

388 INTEGRATED STUDIES II  In this junior-year, inquiry-based course, students will
explore a single, fundamental question, such as the following: “What is the Enlightenment?” Questions will be fundamental and will require material and methods from more than one point of view, cultural tradition, and academic discipline. **Prerequisite:** HSS 288. (Fall). (3, 3T+0S)

**410  SENIOR SEMINAR: TEACHING THE HUMANITIES**  This course focuses on integrating the different aspects of humanities education by teaching the humanities in an educational setting. (1, 1T)

**414  HUMANITY AND CREATIVITY**  New Mexico is one of the great artistic areas of the United States. It is home to archaic petroglyphs and prehistoric pottery, as well as traditional retablos and weavings; it is the inspiration for distinctive artists such as Georgia O’Keeffe and D.H. Lawrence. This course will explore art and its place by applying the conversational method to great works and ideas of and about art. We will examine questions such as these: What is art? What is an artist? What in us needs art? **Prerequisite:** ENG 112. (4, 4T+0S).

**421  HISTORY, LITERATURE, ART, AND PHILOSOPHY**  This seminar, taught according to the conversational method, will examine works from the humanities disciplines, such as philosophy, literature, and history. The great works of the humanities are driven by the most fundamental needs and questions that human beings have, such as the need for meaning, and the questions why are we here, and what may our highest hopes and aspirations be. The texts from these disciplines are perhaps the most undervalued academic works of our times, but they also seem to be the texts that speak most to the needs that go unaddressed and unrealized. These works confront us with and challenge our humanity. **Prerequisite:** ENG 112. (4, 4T+0S)

**488  INTEGRATED STUDIES III (WIC)**  In this intensive-writing capstone, students will—under the guidance of the workshop instructor and under a general course theme—select a series of interdisciplinary questions that will be explored throughout the semester. Questions will be fundamental and will require material and methods from more than one point of view, cultural tradition, and academic discipline. **Prerequisite:** HSS 388. (Spring). (3, 3T+0S)

**INFORMATION TECHNOLOGY (IT)**

**210  INFORMATION TECHNOLOGY SYSTEMS**  You will study the basic components of IT systems, including networking, web systems, databases, system administration and maintenance, scripting, and system integration. **Prerequisites:** EECE 152L. (3, 2T+1L)

**250  INTRODUCTION TO DATABASES**  Through an introduction to database software, you will study the Entity-Relationship model, basic database tables, queries, forms, and report creation and management. **Prerequisite:** EECE 152L. (3, 3T+0S)

**350  DATABASE MANAGEMENT**  You will study current trends in data management, studying topics which include database theory and architecture, normalization, query languages, security and Web applications, focusing primarily on a study of database structures and design, hierarchical and relational models, and database access using Oracle SQL. **Prerequisite:** IT 250. (3, 2T+1S)

**410  INFORMATION ASSURANCE AND SECURITY**  You will study the background of information systems-security fundamentals and tool, emphasizing the role of general and application systems controls in protecting data and computing resources, the identification of threats, and the administrative and technological tools and techniques used to audit and monitor access and access control. **Prerequisites:** EECE 355 and IT 350. (3, 2T+1S)
IT CAPSTONE I (WIC)  Capstone I is a project-oriented course where students work in teams to design and implement a large IT-related project. Projects are prepared in response to an industrial or in-house sponsor. Engineering ethics and project management skills such as communication and team management are reinforced through modules during the semester, and are applied to the different stages of the project. The course finalizes with oral presentations, written reports and/or student demonstrations which are judged by a panel composed of faculty members and external guests. IT 490 is a designated Writing Intensive Course (WIC). Prerequisite: senior standing, Information Engineering Technology major. (4, 2T+2S)

IT CAPSTONE II  Capstone II is a project-oriented course where students work in teams to design and implement a large IT-related project. Projects are prepared in response to an industrial or in-house sponsor and may be a continuation of the project developed in Capstone I. Project management skills such as communication and team management are applied to the different stages of the project. The course finalizes with oral presentations, written reports and/or student demonstrations which are judged by a panel composed of faculty members and external guests. Prerequisite: IT 490. (4, 2T+2S)

INFORMATION ASSURANCE AND SECURITY  You will study the background of information systems-security fundamentals and tools, emphasizing the role of general and application systems controls in protecting data and computing resources, the identification of threats, and the administrative and technological tools and techniques used to audit and monitor access and access control. Prerequisites: EECE 355 and IT 350. (3, 2T+1S)

NETWORK ADMINISTRATION  The practice of network administration in organizations in which security, application control, software updates, hardware inventory control and operational costs are of paramount importance. Economic modeling of organizational tasks in capital outlay, operational budgets and expense savings. (3, 3T + 0S)

TOPICS IN IT  Special topics in the IT field. (3, 3T + 0S)

INTEGRATIVE HEALTH STUDIES (IHS)

INTRODUCTION TO HOMEOPATHY  You will study the basic concepts of homeopathy including common remedies as well as the use of homeopathy in first-aid. (3, 3T+0L)

MEDITATION AND BREATH: MIND-BODY HEALING  You will study meditation and breathing exercises (pranayam) for personal spiritual development and self-care, and utilization by healthcare providers. You will review research on the physiologic aspects of meditation and its effects on health and mood. (2, 2T+0L)

INTRODUCTION TO TRADITIONAL CHINESE MEDICINE  You will study the basic theories of Chinese medicine to understand the concept of energetic imbalance, including the Eight Principles and Five Elements theory, basic meridian pathways, Yin / Yang, Exogenous and Endogenous causes of disease, the Six Eternal Pathogens and the Seven Emotions. (3, 3T+0L)

INTRODUCTION TO AROMATHERAPY  You will explore traditional and modern Egyptian, German, French, and English concepts of the chemistry of essential oils on body, mind, and spirit. You will also explore how oils are made, how they work, and what constitutes a good quality oil. (3, 3T+0L)

INTRODUCTION TO INTEGRATIVE HEALING  You will undertake a comprehensive comparison of Western medicine, Native American healing traditions, Traditional Chinese medicine, Ayurveda, and other healthcare belief systems. (3, 3T+0L)
120  **AYURVEDA AND ENERGY HEALING I** Ayurvedic Polarity Therapy for self-healing. Integrates Ayurvedic practices and principles from ancient India with the energy work of Polarity Therapy. Demonstrates simple techniques to improve energy, digestion, relaxation, and self-healing. (1, 1T+0L)

121  **INTRODUCTION TO AYURVEDA: ANCIENT SCIENCE OF LIVING** You will be introduced to the fundamental principles of the 5000+ year old healing tradition of India. You will focus on applying Ayurvedic principles in your daily life to gain a deeper understanding of yourself and self-healing. (3, 3T+0L)

122  **AYURVEDA AND ENERGY HEALING II** In a continuation of HSCI 120, you will learn how to integrate your previous learning of Ayurvedic healing practices and principles including marma therapy, with the modern energy work of Polarity Therapy, learning specific techniques on how to work with food and digestion. **Prerequisite**: HSCI 120. (1, 1T+0S)

123  **INTRODUCTION TO ACUPRESSURE** You will begin the study of the ancient healing art of Japanese acupressure. The healthy body needs a free flow of the life force (Qi). In this class, you will develop tools to give relaxing neck and shoulder treatments, open the chest to facilitate deeper breathing, and release muscular tension and pain through the simulation of acupoints. (1, 1T+0L)

124  **AYURVEDA AND ENERGY HEALING III** Directly applies ancient Ayurvedic energetic anatomy in simple pressure point routines (marma points). Teaches that specific points are integrated in a back rub to revitalize all tissues. Works with sound (manguruarjantra), breath, and touch. Bodywork is done clothed. (1, 1T+0L)

130  **COMMUNICATION SKILLS FOR HEALING** An experiential course introducing basic communication skills for therapeutic relationships. You will learn how communication fosters patient satisfaction, compliance, and improved outcomes. Based on the Recreation of the Self and Body-centered Psychotherapy. (1, 1T+0L)

140  **YOGA THERAPY: MIND-BODY HEALING** You will explore the philosophy and understanding of yoga, its origins and its history, and the traditional health practices and applications of yoga in healing. (2, 2T+0L)

161  **HEALTHY LIVING LOCALLY I** You will be involved in an experiential course “taught” in the neighborhood and at the grocery store: how to live and eat healthily, given everyday choices and availabilities. (1, 1T+0L)

162  **NUTRITION FOR DIABETES** A class for both the practitioner and for the general public. You will focus on the many aspects of self-care for the diabetic and pre-diabetic patient. (2, 2T+0L)

163  **HEALTHY LIVING LOCALLY II** In this continuation of IHS 1, you will conduct further exploration of how to live and eat healthily given everyday choices. (2, 2T+0L)

164  **HEALTHY LIVING LOCALLY TUTORIAL TRAINING** This special course will prepare you to practice and teach the lessons mastered in IHS 161 and 163. **Prerequisite**: IHS 163. (3, 3T+0L)

166  **AZTEC MEXICAN HEALING I** In this experiential course, you will be introduced to traditional and ancient Aztec practices of healing by an active practitioner of the system. (1, 1T+0L)

167  **AZTEC MEXICAN HEALING II** In this course, you will expand and deepen your understanding and practice of these techniques. **Prerequisite**: IHS 166. (1, 1T+0L)

201  **ACUPRESSURE FACIAL: RADIANCE OF SHEN** Using the 40 acupoints, releasing...
tension and aiding circulation of Qi flowing in the face, head, and neck, you will both
give and receive acupressure facial treatments. (1, 1T+0L)

208 INTRODUCTION TO HOLISTIC NUTRITION This course introduces the concept
of using food as a medicinal tool. You will learn to identify foods associated with disease
and healing for several of the most common disease processes in western society. You
will explore the state of optimal health through the use of whole foods and learn to
become educated consumers in the emerging field of holistic and whole foods nutrition.
(3, 3T+0S)

214 ASSOCIATE POLARITY PRACTITIONER CERTIFICATION PROGRAM I In this first
of a two-part certification program, you will gain the necessary knowledge, skills, and
confidence to become an Associate Polarity Practitioner, for which this course meets the
American Polarity Therapy Association competencies for standards of practice. (Fall) (3,
2T+1L)

218 MOVEMENT & ALIGNMENT: MUSCULO-SKELETAL HEALTH You will study in
depth the fundamental musculoskeletal mechanics applied to healing. Prerequisites: IHS
118 and BIOL 238/L. (3, 3T+0S)

222 INTRODUCTION TO THE FIVE ELEMENTS AND THE TWELVE CHANNELS You
will explore the ancient Taoist Five Element theory translated through the twelve organ
channels (meridians), creating an opportunity to explore the emotional and physical
symptoms which accompany energy imbalances. (2, 2T+0L)

224 ASSOCIATE POLARITY PRACTITIONER CERTIFICATION PROGRAM II In this
second course of a two-part certification program, you will gain the necessary knowledge,
skills, and confidence to become an Associate Polarity Practitioner. When you have
successfully completed this course, you will be eligible to apply for Associate Polarity
Practitioner status with the American Polarity Therapy Association. Prerequisite: IHS 214.
(Spring) (3, 2T+1L)

226 THERAPEUTIC TECHNIQUE: CUPPING, MOXAA, AND GUA SHA In a practical,
hands-on class, you will learn adjunctive therapies to add to your practice, whether
acupressure or massage therapy. Prerequisites: IHS 115. (1, 1T+0L)

255 INTRODUCTION TO HERBAL MEDICINE Introduces health personnel to basics
of herbal medicine in order to gain a greater understanding of this form of alternative
medicine. Specific indications, physiological action, dosage, possible side effects, con-
traindications, and practical usage or herbs are discussed addressing nine body systems.
Co-requisite: IHS 257. (2, 2T+0L)

257 HERBAL PHARMACY In this course you will build on the information learned in
IHS 255, including hands-on practice in making salves, tinctures, liniments, teas, etc.
Co-requisite: IHS 255. (2, 2T+0L)

258 FALL HERBAL FIELDWORK In this field-oriented class, you will explore medicinal
plants of mountains, desert, forest, riparian and canyon habitats of the four corners
region, as available in the fall. You will focus on identifying, harvesting, and making
medicines in the field. Prerequisites: IHS 255 and 257. (1, 0T+1L)

259 SUMMER HERBAL FIELDWORK In this field-oriented class, you will explore
summer-time medicinal plants of mountains, forests, riparian and canyon habitats from
the Four Corners region, focusing on identifying, harvesting, and compounding herbal
medicines. Prerequisites: IHS 255 AND 257. (1, 0T+1L)

264 THERAPEUTIC TOUCH TECHNIQUES This is a beginning course which covers
theory, research, and clinical application with on-going integration of theory and practice,
including imagery and meditation, the chakras, and energy balance using therapeutic touch. Focus will be on one’s own pain relief, relaxation, and on health restoration and promotion. (3, 3T+0L)

270 **ENERGY BODYWORK FOR INTEGRATIVE HEALING** You will develop a conscious, disciplined understanding and comfort with the body as the foundation for all modalities of integrative healing. (2, 2T+0L)

280 **HEALTH CARE TRADITIONS OF THE SOUTHWEST** In this course, your study will focus on the two main traditional forms of health care in the Southwest -- Indigenous and Hispanic. You will study the oral and written traditions of each culture and the roles of plant medicine and ceremony. *Prerequisite:* IHS 118, 255, and 257. (2, 2T+0L)

305 **HISTORICAL DEVELOPMENT OF HEALTH CARE PARADIGMS** You will review major paradigms in healthcare and the possibility of integration among them. You will cover a brief history of medicine and recent developments in alternative medicine. *Prerequisite:* ENG 112 and IHS 118. (2, 2T+0L)

323 **MYOFASCIAL ARMORING, OPENING DIAPHRAGM, FIRE ELEMENT** You will focus your study at the level of the chest and heart to explore acupressure’s potential to affect the “primordial child,” the childlike innocence of the person before he was touched by psychological wounding. *Prerequisites:* IHS 320. (1, 1T+0L)

324 **MYOFASCIAL ARMORING, OPENING DIAPHRAGM, WOOD ELEMENT** Focusing on the diaphragm and solar plexus, you will explore the emotions of anger, frustration, hopelessness, resignation, and depression, and present tools to open the free flow of Qi to allow one to more clearly envision direction in life and realize one’s potential. *Prerequisite:* IHS 320. (1, 1T+0L)

325 **ENERGETIC BLOCKS TO HEALING** You will conduct an in depth study of energetic blocks which may prevent healing or a person’s lack of response to treatment, regardless of the therapeutic intervention. *Prerequisites:* IHS 115 and 123. (2, 1T+1L)

327 **WINDOWS OF THE SKY** Using acupoints to create “windows” of opportunity, people can change their pattern of thought and behavior to express their authentic selves. You will learn to open the neck to see the broad overview, connect with the spirit, and gain a spiritual perspective. Helps re-establish circulation of Qi between the upper and lower body. *Prerequisite:* IHS 123. (1, 1T+0L)

328 **ACUPRESSURE: THE EXTRAORDINARY VESELS** You will conduct an in depth study of the Extraordinary Vessels which correspond to and enhance physiological and energetic homeostasis—the innate wisdom of our bodies to come into balance. *Prerequisite:* IHS 123. (2, 2T, 0L)

331 **SPIRITUALITY AND ESSENTIAL OILS** You will explore the use of essential oils for spiritual health. *Prerequisites:* IHS 116 and 330. (2, 2T+0L)

332 **ENHANCING CREATIVITY WITH ESSENTIAL OILS** You will explore essential oils to enhance art endeavors, to understand the role of the brain’s limbic system to magnify the infusion of energy into art and techniques enhancing the creative process. *Prerequisites:* IHS 116 and 330. (2, 1T+1L)

334 **ESSENTIAL OILS FOR OPTIMAL FITNESS** You will study the use of essential oils for optimal fitness. *Prerequisites:* ENG 111 and IHS 116. (3, 3T+0L)

345 **HOMEOPATHY II** You will expand on your knowledge of the basic concepts to include chronic and acute remedies for more developed medical problems. *Prerequisites:* IHS 102 and 118. (3, 3T+0S)
IV. INTEGRATIVE HEALTH STUDIES

354 HOLISTIC NUTRITION II  You will further your study of the principles and application of nutrition for healing, with a focus on the proper use of nutrients and supplements in addressing a variety of health concerns. Prerequisites: ENG 111 and IHS 208 or HSCI 204. (3, 3T+0L)

357 HERBAL MEDICINE II  In this continuation of Herbal Medicine I, you will explore more advanced methods and specific uses of herbal preparations. Prerequisites: IHS 255 and 257. (2, 2T+0L)

358 HERBAL PHARMACY II  Building on previous herbal courses, you will refine your knowledge and mastery of herbal formula-making. Upon completion of the course, you will be able to formulate specific remedies useful for a wide range of conditions. Co-requisite: IHS 357. (Fall) (2, 2T+0L)

381 TRADITIONAL REMEDIOS OF NORTHERN NEW MEXICO I  In this course, you will learn to synthesize the traditional herbal knowledge of two cultures, the Pueblo Indians and the first Spanish settlers. You will see the native herbs of the Southwest come alive as you explore their uses, historical methods of harvesting, and the preparation and environments in which they grow. Prerequisites: IHS 255 and 257. (2, 2T+0L)

382 TRADITIONAL REMEDIOS OF NORTHERN NEW MEXICO II  In this continuation of IHS 382, you will explore Traditional Remedios, weaving history and folklore through time and place—past, present and future. You will discuss the effects of modernization, cultural diversity, and technology on traditional herbal practices in northern New Mexico. Prerequisite: IHS 381. [Fall] (2, 2T+0L)

390 CAM: LEGAL ISSUES AND SCOPE OF PRACTICE  You will explore the unique considerations to the appropriateness of complementary and alternative medicine applications and the ethical consideration of their scopes of practice. Prerequisites: ENG 112 and SPCH 130. (2, 2T+0L)

408 HERBAL MEDICINE III  You will explore in-depth botanical materia medica via a body systems approach. You will learn botanical names of the herbs and their active chemical constituents. Prerequisite: IHS 357. (2, 2T+0S)

410 HOMEOPATHY III  You will study more advanced concepts of homeopathy, including chronic and acute remedies for more developed medical problems. You will be exposed to guest speakers. Prerequisite: IHS 345. (3, 3T+0S)

411 HOMEOPATHY IV  You will study even more advanced concepts of homeopathy dealing with more developed medical problems. You will be exposed to guest speakers. Prerequisite: IHS 410. (3, 3T+0S)

412L HERBAL MEDICINE III LAB  In this course you will apply the concepts learned in IHS 408. Prerequisites: IHS 357 and 358 (1, 0T+1L)

418 SOFT TISSUE REBALANCING  You will have a unique opportunity to explore hands-on rebalancing of the physical and emotional bodies using touch and very gentle movements to correct imbalances. Prerequisites: IHS 118 and 218, and BIOL 238/L, or permission of instructor. (3, 3T+0L)

422 ADVANCED FIVE ELEMENTS: CONSTITUTIONAL TYPES I  You will focus on identifying the Constitutional Type that is the expression of a primary energetic imbalance through the personality of an individual. Prerequisite: IHS 115 and 320. (2, 1T+1L)

423 ADVANCED FIVE ELEMENTS: CONSTITUTIONAL TYPES II  You will continue with the associated correspondences of the Five Elements, studying emotional and spiritual qualities alongside physical features. You will explore the relationships of the
inner organ systems in relation to nature’s seasonal and life cycles. Prerequisite: IHS 422. (2, 1T+1L)

424 ASSESSMENT: THE PULSE IN ORIENTAL MEDICINE You will learn to assess health through the ancient oriental practice of palpating the radial artery to diagnose energetic imbalances in the body as a whole. Prerequisites: IHS 115 and 222. (1, 1T+0L)

427 SELECT DISORDERS I You will study specific illnesses which manifest as particular signs and symptoms and their treatment by continuing to expand your knowledge and repertoire of acupoints to stimulate and regulate the flow of Qi to alleviate many common imbalances.

428 ACUPRESSURE PRACTICUM You will practice in a supervised, supportive environment the techniques which you have learned to allow people to experience the healing benefits of acupressure. Prerequisites: IHS 115 and 320, and permission of instructor. (2, 0T+2L)

431 INTEGUMENTARY APPLICATION OF ESSENTIAL OILS You will study experientially the application of therapeutic-grade essential oils to the integumentary system of the body, including physical assessment of structural anatomy and physiology, reasons for the use of each oil, and contraindications for use. Prerequisite: IHS 330. (1, 0T+1L)

434 ESSENTIAL OILS FOR RELIEVING ADDICTIONS You will study the use of essential oils in relieving substance abuse and other addictions. Prerequisite: ENG 111 and IHS 116. (2, 2T+0L)

438 PRACTICAL APPLICATION OF ESSENTIAL OILS You will focus in this final division course on specific case studies and choose specific essential oils and lifestyle changes to help return the body to a state of balance. Prerequisite: IHS 330. (2, 2T+0L)

445 ACUPRESSURE CONSTITUTIONAL ASSESSMENT You will learn to approach treatment through a more constitutionally based analysis of the whole person, which means a more in-depth consultation regarding a person’s life and health history, including details of significant life-changing events which may have been the catalyst for energetic imbalances affecting their health today. Prerequisites: IHS 422 and 423. (2, 2T+0L)

460 PHILOSOPHY OF INTEGRATIVE HEALING You will explore the concepts and principles of healing to deepen your understanding of the process of healing. You will learn when and how to integrate the different modalities learned within the Integrative Health Studies program. Prerequisite: ENG 112 and permission of the instructor. (2, 2T+0L)

480 EVOLUTION OF CROSS-CULTURAL HEALING In this overview of cultural and anthropological influences on health beliefs with an emphasis on New Mexico. You will examine “lay” or “folk” understanding of the causes and management of disease. You will discuss traditional approaches to health and healing (e.g., shamanism, curanderismo). Prerequisite: ENG 112 and IHS 118. (3, 3T+0L)

481 HEALTH: THE ROLE OF ENVIRONMENT AND ECOLOGY You will study the changing relationship of health and disease to environment. You will explore the complex interweaving of health and ecology, employing historical analysis to demonstrate how human-induced environmental change alters disease patterns and health. Prerequisites: ENG 112, BIOL 238/L, CHEM 210/L, MATH 145, and IHS 118. (3, 3T+0L)

490 SMALL GROUP INDEPENDENT STUDY This course will provide you one-on-one tutelage in an area of specialized interest in the field of Integrative Health Studies. Prerequisites: ENG 112, SPCH 130. May repeat to a maximum of 2 credits. (1-2, 1-2T+0L)
### LAW ENFORCEMENT / LIBRARY TECHNOLOGY

#### 495 RESEARCH IN COMPLEMENTARY/ALTERNATIVE MEDICINE
You will study the use and organization of databases and research materials to examine evidence-based criteria evaluating the risks and benefits of alternative and complementary medicine in treating selected conditions. **Prerequisites:** ENG 112, SPCH 130, IHS 118, MATH 145 and 150. (3, 3T+0L)

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<td><strong>LAW ENFORCEMENT (LE)</strong></td>
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<td>The following courses are not taught at Northern. They exist only in terms of enabling posting of incoming credit from other colleges which offer these courses.</td>
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<td><strong>130 PATROL, COMMUNICATIONS, AND INVESTIGATIONS</strong></td>
<td>You will learn the functions of a patrol officer as that job relates to law enforcement. You will study effective communication skills, professional writing skills, and effective investigative skills associated with being the first responder at a crime scene. (6, 6T+0S)</td>
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<td><strong>235 TRAFFIC, ENFORCEMENT AND ACCIDENT INVESTIGATION</strong></td>
<td>In this course, which encompasses that part of your training standards mandated by the New Mexico Law Enforcement Academy, you will gain the knowledge and skills necessary to recognize and properly enforce traffic laws in the State of New Mexico. (3, 3T+0S)</td>
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<td><strong>236 POLICE PROFICIENCY I</strong></td>
<td>In this course, which encompasses that part of your training standards mandated by the New Mexico Law Enforcement Academy, you will learn the basic investigative skills with regard to solving criminal activities, such as auto theft, burglary, robbery, sex crimes, narcotics recognition, child abuse, and stalking. (3, 3T+0S)</td>
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<td><strong>237 POLICE PROFICIENCY II</strong></td>
<td>In this course, which encompasses that part of your training standards mandated by the New Mexico Law Enforcement Academy, you will continue your study of investigative techniques and evidence gathering begun in LE 237. (3, 3T+0S)</td>
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<td><strong>238 POLICE PROFICIENCY III</strong></td>
<td>In this course, which encompasses that part of your training standards mandated by the New Mexico Law Enforcement Academy, you will study defensive tactics, the use of force and firearms training <strong>Prerequisite:</strong> LE 238. (3, 3T+0S)</td>
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<td><strong>239 FIRST RESPONDER FOR LAW ENFORCEMENT</strong></td>
<td>You will complete American Red Cross courses in standard first aid, CPR, emergency childbirth, and the care and handling of injured persons. (1, 1+0S)</td>
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#### LIBRARY TECHNOLOGY (LT)

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<td><strong>101 LIBRARY RESEARCH SKILLS</strong></td>
<td>This course focuses on the basic concepts necessary for locating, accessing, evaluating and using appropriate information sources for academic research. <strong>Prerequisite:</strong> ENG 109N. (1, 1T)</td>
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<td><strong>201 CATALOGING</strong></td>
<td>Current practices in cataloging, classification, and processing of print and non-print material. You will become familiar with AACR2, Library of Congress and Dewey Decimal classification systems, and Sears and LC subject headings. You will be introduced to MARC tagging and automated cataloging techniques, including copy cataloging and ALA filing rules. (3, 3T+0S)</td>
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<td><strong>202 TECHNICAL SERVICES—ACQUISITIONS</strong></td>
<td>Techniques of selecting, ordering, and receiving library materials; collection development policies, intellectual freedom, copy-</td>
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right and automated acquisitions programs. (3, 3T+0S)

205  PUBLIC SERVICES  Public services in all types of libraries, the role of the library technician, and the place of libraries in society; circulation, reference services, ILL, programming, and public relations; includes an introduction to automated library programs related to public services. (3, 3T+0S)

207  BASIC REFERENCE  Evaluation and use of about 100 basic reference sources used in libraries as well as electronic resources. (3, 3T+0S)

209  MEDIA SERVICES  Survey of processes necessary for the acquisition, use, and maintenance of the equipment common to media centers; includes some production work. (3, 3T+0S)

213  SPECIAL LIBRARIES  Philosophy and organization of a special library, covering all aspects of operation; includes an introduction to automated library systems relative to special libraries. Prerequisites: LT 201, 202, 205, and 207. (3, 3T+0S)

215  PUBLIC LIBRARIES  Philosophy and organization of a public library, including all aspects of operation; includes an introduction to automated library systems relative to public libraries. Prerequisites: LT 201, 202, 205, and 207. (3, 3T+0S)

217  SCHOOL LIBRARIES  Philosophy and organization of a school library, covering all aspects of operation; includes an introduction to automated library systems relative to school libraries. Prerequisites: LT 201, 202, 205, 209, and ENG 270. (3, 3T+0S)

219  ACADEMIC LIBRARIES  Philosophy and organization of a college/university library, covering all aspects of operation; includes an introduction to automated library systems relative to academic libraries. Prerequisites: LT 201, 202, 205, and 207. (3, 3T+0S)

220  ADVANCED REFERENCE MATERIALS  Evaluation and use of specialized reference materials (print and electronic) for libraries in business, science, fine arts, and social sciences. (3, 3T+0S)

221  MEDIA PRODUCTION  Student production of media projects in video, computer programs, film, slides, or audio tapes. (3, 3T+0S)

223  LIBRARY INFORMATION FOR EDUCATORS  As a future teacher, you will be introduced to the basic concepts for locating, accessing, and evaluating library information. You will learn how resources in print and electronic format can be used in a classroom setting. Prerequisite: ENG 111. (1, 1T+0S)

MASSAGE THERAPY (MAS)

Only those formally admitted to the Massage Therapy Program may enroll in MAS courses. This does not include one credit elective classes.

101L  MASSAGE THERAPY I  Provides a basic understanding and application of Swedish massage strokes, plus joint movements. You will discuss the benefits, common pathology, and contraindications inherent in massage therapy. You will work on each other in a safe supportive professional environment, learning to give a therapeutic, stress-reducing professional massage treatment. You will address issues of personal growth and awareness, and you will explore many of the healing mechanisms of the body which are accessible to the massage therapist. Prerequisites: ENG 109N and MATH 100N; Corequisites: HSCI 110 or BIOL 237 and 237L, and BIOL 238 and 238L. (Fall only) (4, 3T+1L)

103L  MASSAGE THERAPY II  You will refine your massage skills, bringing fluidity and deeper awareness into your work; acquiring mastery of various bodywork techniques; cultivating a deeper understanding of the client/therapist relationship; discussing and
applying energy flow theory; introduce and apply deep tissue work and specific injury techniques. You will work on each other under close supervision of a Registered Massage Therapy Instructor in a safe, supportive, and professional environment. Prerequisite: MAS 101L; Co-requisite: HSCI 112. (Spring only) (4, 3T+1L)

104L MASSAGE THERAPY INTERNSHIP You will give one-hour massage treatments to volunteers, under the supervision of a Registered Massage Therapy Instructor in a professional, safe environment. Emphasis will be on Swedish massage, but you will be encouraged to incorporate learning from all other classes into your internship program. You will conduct interviews, take medical histories, use SOAP notes, and 10 hours of Hydrotherapy. Prerequisite: MAS 101L; Co-requisite: MAS 103L. (Spring only) (3, 0T+3L)

108L MASSAGE THERAPY PRACTICE LAB You will have time to practice the basic massage therapy techniques that you are learning in MAS 101L, under the supervision of a Registered Massage Therapy Instructor (RMTI). Co-requisite: MAS 101L and HSCI 110/111 or BIOL 237L. (Fall only) (2, 0T+2S).

110 IMPROVING YOUR BODY MECHANICS Students will learn how to perform massage safely and effectively using appropriate body mechanics. Class topics will cover giving massage in seated and standing positions, joint alignment, applying pressure, and self-care techniques to endure the safety and longevity of the practitioner. This course fulfills 16 hours of body mechanics instruction in the state of New Mexico’s Massage curriculum requirements (16.7.4.12 NMAC). Co-requisite: MAS 101L (Fall) (1, 1T+0L)

111 APPLIED KINESIOLOGY You will learn introductory methods of evaluation and bodywork that use a specialized type of muscle testing and various forms of massage and bodywork for corrective procedures. (1, 1T+0S)

113 INTRODUCTION TO FOOT REFLEXOLOGY You will learn to incorporate Foot Reflexology into your massage therapy treatment. You will cover the material needed to create a 60-minute treatment routine. Time will be devoted to theory, review, and to questions followed by demonstration and treatment practice. (Spring and Fall) (2, 2T+0S)

115 CRANIAL SACRAL TECHNIQUES I You will be introduced to the basic anatomy, principles, palpation, and application techniques of cranial sacral. You will learn the first of three levels in Cranial Sacral techniques. (Fall, Spring, Summer) (1, 1T+0S)

116 CRANIAL SACRAL TECHNIQUES II In a continuation of MAS 115, you will review and refine the basic skills you mastered previously. You will expand techniques to access all of the cranial and facial bones, as well as being able to work with the whole body. The goal will be to bring more balance to the entire nervous system. You will gain a solid foundation to incorporate Cranial Sacral modalities into your treatments. Prerequisite: MAS 115. (2, 2T+0S)

117 INTRO TO THAI MASSAGE You will study traditional Thai massage as an experience of rhythmical movement in which you will lead the receiver through a flow of passive yoga stretches, deep muscle pressure, and joint mobilization. (Fall, Spring, Summer) (1, 1T+0S)

120 THAI MASSAGE II This class is a continuation of Intro to Thai Massage. Prerequisite: MAS 117. (1, 1T+0S)

121 USUI REIKI, LEVEL I You will learn the basic history, theory, and application of Reiki necessary for a Level-One Reiki practice. This class lays the foundation for the further study and practice of Reiki. (1, 1T, 0L)

122 HOT STONE MASSAGE AND BASIC HYDROTHERAPY Students will learn basic application techniques of hot stones to the body, contraindications, appropriate selec-
tion and care of stones, techniques to work with cold stones, and principles of Hydro-therapy. Stone sets for in class use will be provided by the College. Co-requisite: MAS 101L. (Fall) (1, 1T+0S)

123 CHAIR MASSAGE Students will be introduced to the basics of Chair Massage. Techniques, treatment protocols, and on-site chair massage strategies will be covered. Massage chairs will be provided by the college. (Fall, Spring, Summer) (1, 1T, +0S)

124 BUSINESS FOR MASSAGE PROFESSIONALS Addresses the business needs of massage professionals with an emphasis on start-up, marketing, and financial management of a massage therapy practice. You will become familiar with general business terminology, including the forms and process needed to apply for a massage license and taking the National exam. Prerequisite: ENG 109N and MATH 100N. (Spring) (2, 2T+0S)

190 MASSAGE THERAPY EXAM REVIEW You will review pertinent subjects and curriculum (anatomy & physiology, pathology, kinesiology, therapeutic massage assessment and application, professional standards, ethics, business and legal practice) needed to be able to take and pass the NCBTMB National Certification Examination (NCETM or NCETMB) or the MBLEx exam by the Federation of State Massage Therapy Boards (FSMTB) for Therapeutic Massage and Bodywork by taking several tests similar in style and content to the NCETM. Permission of Department. (Summer only) (1, 1T+0S)

200 TRIGGER POINT THERAPY While learning the basics of Trigger Point Therapy, you will begin to understand myofascial pain syndrome and learn to use touch, breath, sound, and movement to empower the person in pain. Prerequisite: Be a current Massage Therapy student or be a Licensed Massage Therapist. (1, 1T+0S)

215 CRANIAL SACRAL TECHNIQUES III In a hands-on clinic open to the public, you will practice the Cranial Sacral techniques learned in MAS 115 and 116. Prerequisite: MAS 116. (Fall, Spring, Summer) (0.5, 0T + 0.5S)

MATERIALS SCIENCE (MATE)

101 MATERIALS SCIENCE AND PROPERTIES Descriptive introduction to the properties and structures of materials. Prerequisites: MATH 102N or MATH 103N and ENG 109N. (2,2T+0S)

290 INTRODUCTION TO MATERIALS SCIENCE An interdisciplinary survey covering tools and techniques used in the study of the structure and mechanical properties of engineering materials (e.g., semiconductors, polymers, metals). Includes discussion and demonstrations of materials strengthening, materials failure, and non-destructive evaluation methodology. Prerequisite: CHEM 121 and 121L. (Spring only) (3, 3T+0L)

300L CORROSION SCIENCE AND ENGINEERING LAB You will be engaged in lab experiences which supplement MATE 300. Co-requisite: MATE 300. (1, 0T+1L)

MATHEMATICS (MATH)

100N FUNDAMENTALS OF MATHEMATICS Introduction to the mathematical method and its use in practical applications. Students will learn to: use fundamental operations with fractions, decimals and signed values; convert between fractions, decimals and percentages; apply order of operations correctly; create algebraic expressions and/or equations; simplify algebraic expressions and/or equations; manipulate formulas; translate verbal statements into algebraic expressions and/or equations; solve linear equations and formulas; create tables and graphs; interpret graphs; and describe the results of problem solving in writing and orally. Grades are awarded on a CR/NC basis.
MATHEMATICS

Prerequisite: Adequate score on Course Placement Evaluation. (4, 4T+0S).

102N BASIC ALGEBRA First complete course in algebra for those not prepared for college-level algebra. Students will learn ratio and proportion, solutions of linear equations and systems of linear equations, exponents, radicals, graphs, factoring, quadratic equations, rational expressions, polynomials, inequalities, sets, and applications. Grades are awarded on a CR/NC basis. Prerequisite: MATH 100N or adequate score on Course Placement Evaluation. (4, 4T+0S).

103N ACCELERATED FUNDAMENTAL AND BASIC ALGEBRA This course combines the courses of MATH 100N and MATH 102N in an accelerated course. Students will learn: operations with fractions, signed numbers, decimals, and, order of operations; converting between fractions, decimals and percentages; graphing and solving simple algebraic equations and inequalities; solving two equations and two unknowns; simplifying, adding, subtracting, multiplying, dividing and factoring polynomials; simplifying, adding, subtracting, multiplying and dividing rational expressions; operations with exponents and radicals; solving quadratic equations and the quadratic formula; and scientific notation. Students will apply the above concepts to applications. Grades are awarded on a CR/NC basis. Prerequisite: Adequate score on Course Placement Exam. (Fall, Spring, Summer) (4, 4T+0L).

104N APPLIED TRADES MATH I Covers material designed for career technical students who need to study particular mathematical topics which may include calculator usage, algebra, geometry, trigonometry, graphs, and finance. This course prepares students for advanced applied trades math. Prerequisite: MATH 100N, or adequate score on Course Placement Evaluation. (3, 3T+0S).

129 PROBLEM SOLVING METHODS This course presents strategies for solving mathematical problems for non-math majors. Topics include the review of the number system, algebraic graphs and functions, linear and exponential equations, systems of linear equations in two variables, the metric system and conversions and geometry. Prerequisite: MATH 102N. (4,4T+0L)

130 INTERMEDIATE ALGEBRA This course will cover graphing, representations of linear functions, solving linear equations and inequalities, solving two equations and two unknowns, absolute value equations and inequalities, multiplying and factoring polynomials, long division of polynomials, operations with rational expressions, simplifying, dividing and multiplying radical expressions, the quadratic formula, and applications and word problems using the above concepts. Prerequisite: MATH 102N or MATH 103N (4, 4T+0S)

130L INTERMEDIATE ALGEBRA AND LAB This course combines the courses of MATH 102N and MATH 130 in a 4 credit hour course. The course will cover graphing, representations of linear functions, solving linear equations and inequalities, solving two equations and two unknowns, absolute value equations and inequalities, multiplying and factoring polynomials, operations with rational expressions, simplifying, dividing and multiplying radical expressions, the quadratic formula, and applications and word problems using the above concepts. Students will spend 3 hours in a computer lab per week to practice these concepts. Prerequisite: Math 100N or 18-22 on COMPASS (COAL). (Fall, Spring) (4, 3T+1L)

132 APPLIED TRADES MATH II Covers material designed for career technical students or general studies students who need to study particular mathematical topics. Prerequisite: MATH 102N, MATH 103N, or MATH 104N. (3, 3T+0S)

145 INTRODUCTION TO PROBABILITY & STATISTICS Basic probability and statistics,
including analysis of numerical data, basic probability models, sampling, inference, applications of the computer in statistics, and related topics. **Prerequisite:** MATH 130. (3, 3T+0S)

150 **COLLEGE ALGEBRA** College algebra as preparation for trigonometry: functions, graphs, equations, inequalities, exponentials, logarithms, quadratics, matrices, and determinants and complex numbers. **Prerequisite:** MATH 130. (3, 3T+0S)

151 **CONCEPTUAL MATHEMATICS** This is a survey of mathematical topics that includes problem solving, number theory, basic geometry, and probability. **Prerequisite:** MATH 129 or MATH 130. (4, 4T+0L)

155 **TRIGONOMETRY AND PRE-CALCULUS** This course serves as preparation for calculus. The course covers the definition of trigonometric functions, radian and degree measure, inverse trigonometric functions, graphs of trigonometric and inverse trigonometric functions, trigonometric identities, circular functions, triangles, vectors, complex numbers, polar coordinates and graphs. This course also contains more advanced pre-calculus concepts: conic sections, parametric equations, exponential and logarithmic functions and applications in geometry. **Prerequisite:** MATH 150. (Fall, Spring) (4, 4T+0L)

161 **ADVANCED COLLEGE ALGEBRA AND TRIGONOMETRY** This course reviews exponential functions, logarithmic functions, vectors and topics in advanced college algebra. It emphasizes the difference quotient, linear systems with matrices and analytic geometry. It provides an introduction to the six trigonometric functions, their properties, their relationships to each other and their graphs. The course will also include radian and degree measures of angles, trigonometric identities, Law of Sines and Cosines, inverse trigonometric functions, polar coordinates, an introduction to complex numbers and DeMoivre’s Theorem. **Prerequisite:** MATH 150 (Fall, Spring, Summer) (4,4T+0L)

162 **CALCULUS I** Cartesian plane and functions, limits and continuity, differentiation, the derivative as the slope of curve, rules and applications of differentiation, increasing and decreasing functions, the indefinite and definite integral. **Prerequisite:** MATH 150 and MATH 155 or MATH 160. (4, 4T+0S)

163 **CALCULUS II** The indefinite integral, the fundamental theorem of calculus; applications of the definite integral; volumes of solids; revolution, logarithmic, and exponential functions, techniques of integration, conic sections, polar coordinates, limits of indeterminate forms, infinite series. **Prerequisite:** MATH 150 and MATH 162. (4, 4T+0S)

180 **CALCULUS FOR BUSINESS AND LIFE SCIENCES** In this course, Calculus concepts will be introduced without trigonometry. Concepts studied include the definition and application of limits, derivatives and integrals. The course will also discuss the chain rule and optimization. Connections will be made to solving problems in business, life and social sciences. **Prerequisite:** MATH 150. (4, 4T+0L)

210 **MATH FOR ELEMENTARY TEACHERS** This course will prepare you as a prospective elementary school teacher with problem solving techniques related to topics taught at the K-8 level. You will strengthen your understanding of mathematical topics through the study of problem solving, number theory, set theory, geometry, practical measurement, and the use of technology. **Prerequisite:** MATH 102N or MATH 103N. (3, 3T+0S)

264 **CALCULUS III** Parametric equations and vectors in the plane and in three-dimensional space, functions of several variables, extrema of functions in two variables, directional derivatives and gradients, tangent planes, multiple integrals and iterated integrals as applied to volumes, surface areas, centers of mass and moments of inertia, triple integrals, infinite series and test for convergence and divergence, and differential
equations. Prerequisite: MATH 161. (4, 4T+0S)

275 Introduction to Numerical Computing You will study solutions of linear and non-linear equations, approximation of functions, interpolation, techniques for approximation of integration and differentiation of functions, solutions of differential equations, and gain familiarization with existing mathematical software. Prerequisite: Math 163 and a computer language (3, 3T+0L)

290 Undergraduate Research Experience in Mathematics This is a computer-based experience in mathematical research, supported by laboratory work. You will learn computational modeling, experimental design, library and Internet information searches and research methodology, while interacting with peers and faculty. You will prepare a technical report or poster on your activities. Research questions focus on nonlinear dynamics, differential equations, and mathematical physics. Prerequisite: MATH 162. (May be repeated for credit) (3, 3T+0L)

294 Introduction to Linear Algebra and Applications You will study systems of linear equations, matrices, linear transformation, eigenvalues and eigenvectors, determinants, and computational methods. Prerequisite: MATH 163. (3, 3T+0L)

295 Practicum in Mathematics This course prepares the student to develop an ability to be able to use mathematics and apply mathematical skills to model and solve a real life problem. The student will be involved in research in a topic of his or her choice under the recommendation of a faculty member. The topic could be selected from any applied area: Biology, Engineering, Environmental Science, Physics or Business for example. Prerequisite: MATH 296 or permission of instructor. (3, 3T+0L)

296 Introduction to Applied Ordinary Differential Equations You will study the theory of ordinary differential equations: elementary equations, numerical methods, phase plane analysis and Laplace transforms. Prerequisite: MATH 163 and MATH 264 recommended. (3, 3T+0L)

306 College Geometry You will study an axiomatic approach to the fundamentals of geometry in Euclidean and non-Euclidean spaces, with an emphasis on the historical development of geometry. Prerequisite: MATH 162. (Fall) (3, 3T+0L)

308 Theory and Practice of Problem Solving You will experience mathematical invention and discovery at the level of high school geometry and algebra, including the study of sequences, series, and recursions. Prerequisite: MATH 162. (Fall) (3, 3T+0L)

311 Vector Analysis You will study vector algebra, lines, planes, curves, tangent lines, vector-valued functions, arc length, line integrals, directional derivatives, gradient, divergence, curl, Gauss’s and Stokes’s theorems and geometric interpretations. Prerequisite: MATH 264. (Fall) (3, 3T+0L)

312 Partial Differential Equations You will study the methods of solution of partial differential equations, engineering and science applications, Laplace’s equation, heat and wave equations, separation of variables, Fourier series and Fourier Transforms. Prerequisites: MATH 264 and 316. (3, 3T+0L)

313 Complex Variables for Engineering You will study the theory of a complex variable with applications to engineering and physical problems. Prerequisite: MATH 264 and MATH 316. (3, 3T+0L)

314 Linear Algebra with Applications You will study systems of linear equations, matrices, linear transformations, eigenvalues and eigenvectors, determinants, and computational methods. Prerequisite: MATH 163. (3, 3T+0L)
316 APPLIED ORDINARY DIFFERENTIAL EQUATIONS You will study the theory of ordinary differential equations: elementary equations, numerical methods, phase plane analysis and Laplace transforms. Prerequisite: MATH 163, with MATH 264 recommended. (3, 3T+0L)

327 DISCRETE STRUCTURES You will develop skill in using principles and concepts of discrete math, such as Boolean logic, algorithms, recursive methods, inductive and deductive reasoning in solving problems in science, technology, and engineering. Prerequisite: MATH 163. (Fall) (3, 3T+0L)

338 MATHEMATICS FOR SECONDARY TEACHERS You will study advanced topics from secondary mathematics to meet the needs of pre- and in-service teachers. Prerequisite: MATH 163. (Fall) (3, 3T+0L)

345 ELEMENTS OF MATHEMATICAL STATISTICS AND PROBABILITY THEORY You will study probability theory, including combinatorics, probability densities, expectation, variance, correlation, estimation, confidence intervals, and hypothesis testing. Prerequisite: MATH 163. (Spring) (3, 3T+0L)

375 NUMERICAL COMPUTING (WIC) You will study solutions of linear and non-linear equations, approximation of functions, interpolation, techniques for approximation of integration and differentiation of functions, solutions of differential equations, and gain a familiarization with existing mathematical software. Prerequisite: MATH 163 and a computer language. (Spring) (3, 3T+0L)

395 PRACTICUM IN MATHEMATICS This course prepares the student to develop the skills to use mathematics and apply mathematical skills to model and solve a real life problem. The student will be involved in researching a topic of his/her choice under the guidance of a faculty member. The topic could be selected from any applied area: Biology, Engineering, Environmental Science, Physics, or Business, for example. Prerequisite: MATH 296 or Math 316 or permission from the instructor. (6, 6T+0L)

401 ADVANCED CALCULUS I You will undergo a rigorous study of the calculus of one variable, the definition of real numbers, sequences, limits, functions, continuity, differentiation, and integration. You will be responsible for understanding and constructing proofs. Prerequisites: MATH 264 and 311. (Fall) (4, 4T+0L)

402 ADVANCED CALCULUS II You will continue your study of advanced calculus to several variables, metric spaces, sequences, limits, compactness and continuity of metric spaces, interchange limits of operations, series, power series, partial derivatives, implicit and inverse theorems, and multiple integrals. Prerequisite: MATH 401. (Spring) (3, 3T+0L)

441 PROBABILITY You study mathematical models for random experiments, random variables, expectation, discrete and continuous distributions, joint distributions, conditional probabilities, independence, laws of large numbers, the central limit theorem, and moment generation functions. Prerequisite: MATH 264. (Spring) (3, 3T+0L)

464 APPLIED MATRIX THEORY You will study determinants, the theory of linear equations, matrix analysis of differential equations, eigenvalues and eigenvectors, variational principles, and generalized inverses. Prerequisite: MATH 314. (Spring) (3, 3T+0L)

466 MATHEMATICAL METHODS IN SCIENCE AND ENGINEERING You will study special functions and mathematical methods for solving differential equations, difference equations, and integral equations. Prerequisites: MATH 311, 312, and 313. (Spring) (3, 3T+0L)
MECHANICAL ENGINEERING

160L  GENERAL ENGINEERING DESIGN I Introduces engineering graphics, the design process, computer-aided design, engineering ethics, design economics, and project management. [Cross-listed with ENGR 160L] Prerequisite: ENGR 120L (3, 2T+1L)

202  ENGINEERING STATICS You will study force analysis of particles and rigid bodies in two and three dimensions using vector algebra as an analytical tool; centroids, distributed loads, trusses, frames, friction. [Cross-listed with CE 202] Prerequisites: PHYS 215/L. (Fall) (3, 3T+0L)

260L  ENGINEERING DESIGN II You will study the design process, project management, shop practice, CNC and rapid prototyping, design economics, and engineering ethics. Prerequisites: ME 160L (Fall, spring) (3, 2T+1L)

301  THERMODYNAMICS You will study thermodynamic equilibrium, thermodynamic properties and equations of state; first and second laws of thermodynamics and their applications to engineering systems; reversibility and irreversibility, and their application to second law analysis. Prerequisites: CHEM 121/L, PHYS 216/L (Spring) (3, 3T+0L)

302  MECHANICS OF MATERIALS You will study stresses and strains in members subjected to tension, compression, torsion, shear and flexure; combined and principal stresses; Mohr’s circle construction; buckling, introduction to statistically indeterminate members. Prerequisites: ME 202. (Fall) (3, 3T+0L)

303  INTRODUCTION TO SOLAR ENERGY TECHNOLOGY As a junior- and senior-level science and engineering student, you will study the principles behind solar energy, preparing yourself for more advanced study. You will study solar energy resources on the earth, principles of heat transfer and optics, solar thermal systems, and solar photovoltaic conversion systems. Prerequisite: PHYS 216/L. (Fall) (3, 3T+0L)

306  DYNAMICS Principles of particle dynamics. Kinematics and kinetics of particles, systems of particles and rigid bodies. Prerequisite: ME 202 (Spring) (3, 3T+0S)

317  FLUID MECHANICS Fluid statics; control volume forms of continuity, momentum, and energy; pipe flow and turbomachinery You will be introduced to boundary layers and turbulent flow. Laboratory experiments and demonstrations of basic concepts. Prerequisite: ME 306 (Fall) (3, 3T+0L)

318L  MECHANICAL ENGINEERING LAB You will be introduced to experiments related to statics and dynamics. Prerequisite: ME 306. (Fall) (3, 0T+3L)

320L  HEAT TRANSFER Students will be introduced to the principles and engineering applications of heat transfer by conduction, convection and radiation. Students will learn to perform heat exchangers performance calculations and will be exposed to laboratory experiments and demonstrations of fundamental heat transfer concepts. Prerequisite: ME 301, ME 317. (4, 3T+1L)

357  MECHANICAL VIBRATIONS You will study free and forced vibrations of one and two degrees of freedom systems for both steady state and transient forcing, and vibrations of selected continuous systems and balancing. [Cross-listed with CE 357] Prerequisites: ME 306 and MATH 316. (Spring) (3, 3T+0L)

380  ANALYSIS AND DESIGN OF MECHANICAL CONTROL SYSTEMS You will study automatic control systems, using classical control methods in the frequency domain; classical stability and performance analysis methods including the root locus as well as the Bode and Nyquist diagrams. You will also study control design based on complex plane and frequency performance specifications. Prerequisite: MATH 316. (Fall) (3, 3T+0L)
390  **POWER SYSTEMS** You will study mechanical and electrical properties of machinery for power generation or deployment; network or grid design of distribution of power; sources of electric power and their characteristics of energy conversion efficiency, cost, and environmental impact; introduction to electric energy storage. [Cross-listed with EECE 390] **Prerequisites:** ME 306 and 317, and EECE 203L (Fall) (3, 3T+0L)

401  **ADVANCED MECHANICS OF MATERIALS** You will study state of stress and strain at a point, stress-strain relationship; topics in beam theory, such as asymmetrical bending, curved beams, and elastic foundations; torsion of non-circular cross sections; energy principles. **Prerequisite:** ME 306. (Spring) (3, 3T+0L)

403  **SOLAR THERMAL APPLICATIONS** You will study thermal processes of solar energy conversion in solar engineering through topics such as solar radiation, solar harnessing equipment and system, solar materials and properties, solar heat transfer theory, solar economics, solar applications, and solar system design. **Prerequisite:** ME 320L. (Fall) (3, 3T+0L)

459  **ADVANCED MECHANICAL ENGINEERING DESIGN** Students will study common engineering materials and their properties and stress-strain analysis. Students will apply the concepts of statistical considerations and factor of safety to design machine elements such as shaft, permanent and non-permanent joints etc. from the point of view of static and fatigue strength. **Prerequisite:** ME 302. (3, 3T+0L)

490  **CAPSTONE IN MECHANICAL ENGINEERING I (WIC)** In this project course, you will exercise your knowledge of mechanical engineering, design, and associated coursework. (Fall) (4, 2T+2L)

491  **CAPSTONE IN MECHANICAL ENGINEERING II** In this project course, you will exercise your knowledge of mechanical engineering, design, and associated coursework. **Prerequisite:** ME 490. (Spring) (4, 2T+2L)

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**MUSIC (MUS)**

**MUSIC COURSES FOR NON-MAJORS**

All studio courses may be repeated without penalty; however, no course may be counted more than once toward graduation requirements.

105  **MUSIC APPRECIATION** Develops a foundation in the enjoyment and understanding of Western civilization’s music through the use of recorded music and song literature; analysis of music styles and periods of development and of their relation to other subjects and activities. **Prerequisite:** ENG 109N. (3, 3T+0S)

108  **CLASS CLASSICAL GUITAR I** You will the basic techniques of classical guitar, rudiments of music, and the history of classical guitar. (2, 1T+1S)

109  **CLASS FOLKLORIC GUITAR I** Basic instruction in folk guitar. (2, 1T+1S)

111  **CLASS GUITAR I** Basic instruction in classical guitar from beginning to intermediate level. (2, 1T+1S)

112  **CLASS VOICE I** Basic instruction in voice from beginning to intermediate levels. (2, 1T+1S)

113  **CLASS VIOLIN** Basic principles of playing violin: finger patterns, bowing and vibrato techniques. (2, 1T+1S)

114  **CLASS FLAMENCO GUITAR I** Basic rhythm patterns and strums for the “Cante Chico” and an introduction to “Soleares and Bulerias of the Cante Hondo.” (2, 1T+1S)
**MUSIC FOR NON-MAJORS**

115 **CLASS SAXOPHONE** Basic instruction in saxophone from beginning to intermediate level. (2, 1T+1S)

116 **MARIACHI ENSEMBLE** Beginning to intermediate instruction in Mariachi music ensemble. *Prerequisite*: MUS 102 and one year experience playing an instrument. (1, 0T+1S)

117 **CLASS BASS** Basic instruction in bass from beginning to intermediate level. (2, 1T+1S)

123 **DIGITAL AUDIO PRODUCTION** You will explore the tools and techniques of digitized sound production by focusing on a series of individual and collaborative projects. Cross-listed as FdMa 120. (4, 3T+1S)

134 **DIGITAL MUSIC PRODUCTION TECHNIQUES** You will expand on the skills learned in Digital Audio Production and progress from the technical to the procedural and aesthetic aspects of recording. Cross-listed as FdMa 125. *Prerequisite*: FdMa 120 or MUS 123. (4, 3T+1S).

208 **CLASS CLASSICAL GUITAR II** You will continue your study of classical guitar (MUS 108) with more complex music, techniques, and rhythms, and emphasis on ornamentation and presentation of classical music. *Prerequisite*: MUS 108. (2, 1T+1S)

211 **CLASS GUITAR II** Continuation of MUS 111. Instruction in guitar from intermediate to advanced level. *Prerequisite*: MUS 111. (2, 1T+1S)

212 **CLASS VOICE II** In this continuation of MUS 112, you will be presented with more advanced development of singing techniques. *Prerequisite*: MUS 112. (2, 1T+1S)

213 **WOMEN’S ENSEMBLE** This is a class for female group vocal participation through study of choral signing techniques and choral literature. You will be required to sing parts. *Prerequisite*: MUS 112 or permission of instructor. (1, 0T+1S)

214 **MIXED CHORUS** You will be provided an opportunity for group vocal participation through study of singing techniques and song literature. *Prerequisite*: MUS 112. (1, 0T+1S)

215 **MEN’S ENSEMBLE** This is a class for group vocal participation for males through study of choral singing techniques and choral literature. You will be required to sing parts. *Prerequisite*: MUS 112 or permission of instructor. (1, 0T+1S)

217 **GOSPEL CHOIR I** A class for group vocal participation through study of song literature and performance of gospel music. Part singing will be included. (1, 0T+1S)

219 **CLASS FOLKLORICA GUITAR II** Intermediate-level instruction in folk music for guitar. You will study different styles of folk music, advanced chordal progressions, and musical notation requirements. *Prerequisite*: MUS 109. (2, 1T+1S)

220 **MUSICA FOLKLORICA INSTRUMENTAL & VOCAL ENSEMBLE** Studies song literature and performance of traditional and modern Hispanic folk songs. You will be selected by audition by the instructor. Includes performance for special occasions on and off campus. (1, 0T+1S)

223 **CLASS FLAMENCO GUITAR II** You will study the higher Flamenco forms such as the “Soleares, Bulerias, and Alegias.” *Prerequisite*: MUS 114. (2, 1T+1S)

225 **MUSICA FOLKLORICA LA NUEVA CANCIÓN** You will become familiar with the history, vocabulary, origin, and developments of traditional instruments, songs, and traditional Spanish folkloric music. The music will be in Spanish. *Prerequisite*: MUS 105 and ENG 109N. (3, 3T+0S)

226 **MUSIC COMPOSITION** You will study the basic principles of composing including techniques in melodic contour, organization, form, rhythm and meter, and modal melodic. *Prerequisite*: MUS 216. (3, 3T+0S)
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227 TRADITIONS IN FLA menCO You will study the traditions of Flamenco music and dance from Spain, beginning with early styles to present day techniques. Prerequisite: MUS 119. (3, 3T+0S)

240 HISTORY OF ROCK, RAP AND POPULAR MUSIC Examines popular music, concentrating on the U.S. after 1950. Considers precursor styles (e.g. blues, folk) and contributions to new styles of popular music. Discusses the evolution of rap and rock from 1960 to the present. Also examines sub-genres, such as House music, Heavy Metal, etc. Prerequisite: ENG 109N. (Fall, Spring) (3, 3T+0S)

250 MUSIC FOR THE CLASSROOM TEACHER This is a multifaceted music skills course to assist Elementary Education majors in preparing and teaching music in their classrooms. No previous musical training is necessary. Prerequisite: ENG 109N. (3, 2T+1S)

257 GOSPEL CHOIR II A continuation of Gospel Choir I (MUS 217) with group vocal participation through study of song literature and performance of gospel music. Part singing will be included. (1, 0T+1S)

MUSIC COURSES FOR NON-MAJORS AND MAJORS

110 CLASS PIANO I Introduces the keyboard, music reading in the treble and bass clefs, basic theory and keyboard harmony, technical patterns, and improvisation. Studies easy classical and pop repertoire. Designed for music majors and non-majors with no keyboard experience. (Fall, Spring, Summer) (2, 1T, +1S)

221 CLASS PIANO II Continuation of MUS 110. Prerequisite: MUS 110 (Fall, Spring, Summer) (2, 1T, +1S)

230 CLASS PIANO III Continuation of MUS 221. Prerequisite: MUS 221 (Fall, Spring, Summer) (1, 0T+1S)

321 CLASS PIANO IV Continuation of MUS 230. Prerequisite: MUS 230 or test. (Fall, Spring, Summer) (1, 0T, +1S)

MUSIC COURSES FOR MAJORS ONLY

100 AURAL SKILLS I Study of sight singing and dictation of diatonic melodies in major and minor keys (treble, alto, and bass clefs). Identification of scale types, intervals, triads, and dominant seventh chords. Prerequisite: MUS 101 or test out. Co-requisite: MUS 150. (Fall only) (1, 1T+0S)

101 BASIC MUSIC THEORY Introduces tools used in notating, performing, creating and listening to music. Required course for all Music Majors who fail the entrance music theory examination. (Fall only). (3, 1T+2S)

104 MAJOR ENSEMBLE I You will play in a group (large or small, based on enrollment) that will be defined after the first week of class, after placements occur as a result of auditions. Repertoire is defined on the same basis, chosen from a select list. Prerequisite: MUS 101 or test out. (1, 0T+1S)

106 AURAL SKILLS II Students will study sight singing in major and minor keys (treble, alto, tenor and bass clefs). Included dictation of one and two-voice examples. Detection of pitch and rhythmic errors in performed examples. Harmonic dictation using vocabulary from Music Theory II, MUS 122. Prerequisite: MUS 100. Co-requisite: MUS 122. (Spring). (1, 1T+0S)

120 MAJOR ENSEMBLE II You will play in a group (large or small, based on enrollment) that will be defined after the first week of class, after placements occur as a result
of auditions. Repertoire is defined on the same basis, chosen from a select list. Prerequisite: MUS 104 (1, 0T+1S)

125 HISTORY OF JAZZ I You will examine the history of jazz from its origins through 1950. You will learn to identify major styles and performers and to describe the elements of each style. (3, 3T+0S)

126 HISTORY OF JAZZ II You will continue your study of the history of jazz, covering bebop (c. 1950) through the present. You will learn to recognize and describe the major styles in jazz, the most important proponents of each style, and the musical elements that determine each style. (3, 3T+0S)

131 INTRODUCTION TO MUSIC Introduces the study of music including bibliographic, listening, score reading, critical reading, and writing skills; music terminology; a survey of selected music genres (symphonic and chamber music); and building of general music repertory. Music Majors only. (Fall) (3, 3T+0S)

140 APPLIED LESSONS I Applied private lessons on your instrument. (Fall, Spring, Summer) (2-4 credits of Performance Music = Maximum course enrollment of 1)

141 APPLIED LESSONS II Continuation of MUS 140. Prerequisite: MUS 140. (Fall, Spring, Summer) (2-4 credits. Maximum course enrollment of 1)

150 MUSIC THEORY I Introduces the fundamentals of tonal harmony and voice leading, focusing on four-voice writing and analysis of excerpts from music literature. Prerequisite: MUS 101 or test out. Co-requisite: MUS 100. (Fall). (3, 3T+0S)

151 MUSIC THEORY II Continuation of Music Theory I, MUS 150. Covers principles of harmony and voice leading, using all common diatonic triads and seventh chords. Introduces modulation, contrapuntal chord functions, and elementary structural analysis of excerpts from music literature. Prerequisite: MUS 150. Co-requisite: MUS 106. (Spring). (3, 3T+0S)

200 AURAL SKILLS III Continuation of MUS 106. Studies sight-singing of chromatic melodies in major and minor keys (in four clefs). Includes dictation of one-through three-voice examples. Studies harmonic dictation using vocabulary from MUS 151. Prerequisite: MUS 106. Co-requisite: MUS 224 (Fall). (1, 1T+0S)

204 JAZZ KEYBOARD SKILLS I You will learn to realize jazz harmonies at sight from lead sheets or other progressions. Prerequisite: MUS 101 or test out. (3 3T+0S)

206 AURAL SKILLS IV Continuation of MUS 200. Studies sight singing of chromatic and atonal melodies. Includes dictation of one through four voice examples. Identifies sonorities studied in Music Theory IV. Detection of pitch and rhythmic performance errors. Prerequisite: MUS 200. Co-requisite: MUS 225 (Spring). (1, 1T+0S)

224 MUSIC THEORY III Continuation of MUS 151 Music Theory II. Reviews melodic and rhythmic figuration. Covers dissonance and chromaticism, including modal mixture, seventh chords with added dissonance, neapolitan sixth chord, and augmented sixth chords. Provides structural analysis of musical excerpts. Co-requisite: MUS 200. (Fall) (3, 3T+0S)

228 JAZZ KEYBOARD SKILLS II In this continuation of MUS 204, you will learn to realize jazz harmonies at sight from lead sheets or other progressions. Prerequisite: MUS 204. (3, 3T+0S)

234 MUSIC THEORY IV Continuation of MUS 224. Focuses on advanced chromaticism including modal mixture, altered dominants, voice leading, and harmonic analysis of music. Also examines impressionism, neoclassicism, jazz and contemporary
MUSIc FOR MAJORS

241 APPLIED LESSONS III Applied private lessons on your instrument. Prerequisite: MUS 224; Co-requisite: MUS 206. (Spring) (3, 3T +0S)

242 APPLIED LESSONS IV Continuation of MUS 241, Prerequisite MUS 241 (Fall, Spring, Summer) (2-4 credits of Performance Music. Maximum course enrollment of 1)

243 ENSEMBLE III This course consists of graded pieces, arranged for the particular available instruments in the band. The typical band consists of 5 saxophones, 4 or 5 trumpets, 4 trombones, 1 tuba, plus a rhythm section, including Latin percussion. NNMC’s music program will accept other types of instruments in the band. All musicians are welcome. Acceptance in the band will follow a previous audition. (1, 0T+1S)

244 ENSEMBLE IV This course consists of graded pieces, arranged for the particular available instruments in the band. The typical band consists of 5 saxophones, 4 or 5 trumpets, 4 trombones, 1 tuba, plus a rhythm section, including Latin percussion. NNMC’s music program will accept other types of instruments in the band. All musicians are welcome. Acceptance in the band will follow a previous audition. Prerequisite: MUS 243 (1, 0T+1S)

249 CHAMBER MUSIC I Small group performance. (Fall, Spring, Summer) (1, 0T, +1L) (Minimum enrollment to make: 2)

291 RECITAL Student will perform 30 minutes of music before a panel of faculty and the general public. Exit requirement of the AA degree. Co-requisite: MUS 242 (Fall, Spring, Summer) (1, 0T, +1S)

305 CONTEMPORARY THEORY I Presents the grammar and syntax of jazz and contemporary music. Acquaints students with the language of jazz improvisation and various jazz/contemporary styles. Aural skills are developed through an in-depth analytical study of jazz/contemporary forms and performers through dictation, analysis and identification. Course fulfills upper division Music Theory elective requirement. Prerequisite: MUS 234 (Fall) (3, 3T +0S)

306 CONDUCTING I Introduces conducting and rehearsal techniques. Prerequisite: MUS 206. Co-requisite: Participation in appropriate ensemble. (Fall) (3, 3T +0S)

307 CONDUCTING II Introduces more advanced conducting and rehearsal techniques. Prerequisite: MUS 306 Co-requisite: Participation in appropriate ensemble. (Spring) (3, 3T +0S)

310 WESTERN MUSIC HISTORY I (WIC) Surveys Western art music with stylistic analysis of representative works from all major periods through the Baroque. Prerequisite: MUS 234 (Fall) (3, 3T +0S)

313 ENSEMBLE V This course consists of rehearsals of graded pieces arranged for the particular available instruments in the band. The ideal band consists of 5 saxophones, 4 o5 trumpets, 4 trombones, and 1 tuba, plus rhythm section, including Latin percussion. Prerequisite: MUS 244. (1, 0T+1S)

314 ENSEMBLE VI This course consists of rehearsals of graded pieces arranged for the particular available instruments in the band. The ideal band consists of 5 saxophones, 4 o5 trumpets, 4 trombones, and 1 tuba, plus rhythm section, including Latin percussion. Prerequisite: MUS 313. (1, 0T+1S)

322 MUSIC THEORY V Surveys tonal analytical techniques, covering works from the 18th and 19th centuries. Fulfills upper-division Music Theory elective requirement. Pre-
requisite: MUS 234 (Fall) (3, 3T, +0L)

323 MUSIC THEORY VI Introduces post-tonal 20th century analysis as well as 16th and 18th century counterpoint in analysis and written examples. Fulfills upper-division Music Theory elective requirement. Prerequisite: MUS 322 (Spring) (3, 3T, +0L).

324 WESTERN MUSIC HISTORY II Surveys Western art music with stylistic analysis of representative works from all major periods after the Baroque. Prerequisite: MUS 310 (Spring) (3, 3T +0S)

325 CONTEMPORARY THEORY II Continuation of MUS 305, study of jazz styles post cool and bop to current styles of composition and theories that underlie them. Students write short representative exercises in recent musical idioms as well as transcribing and analyzing works. Prerequisite: MUS 305 Course fulfills Music Theory II Elective Requirement. Offered Spring only. (3, 3T +0S)

340 APPLIED LESSONS V Applied private lessons on your instrument. Prerequisite: MUS 242 (Fall, Spring, Summer) (2-4 credits of Performance Music. Maximum course enrollment of 1)

341 APPLIED LESSONS VI Continuation of MUS 340. Applied private lessons on your instrument. Prerequisite: MUS 340. (Fall, Spring, Summer) (2-4 credits of Performance Music. Maximum course enrollment of 1)

349 CHAMBER MUSIC II Small group performance. Prerequisite: MUS 249 (Fall, Spring, Summer) (1, 0T, +1L) (Minimum enrollment to make: 2)

351 CONTEMPORARY IMPROVISATION I Develops skills in jazz and contemporary improvisation through practical application of chord/scale relationship, transcription, repertoire and analysis. Open to all instruments. Prerequisite: MUS 305 (Fall, Spring) (3, 3T +0S)

352 CONTEMPORARY IMPROVISATION II Expands upon the material presented in Contemporary Improvisation I. Deals with repertoire of the jazz common practice period and beyond. Open to all instruments. Course fulfills Chamber Music Requirement. Prerequisite: MUS 351 (Fall, Spring) (2, 2T +0S)

365 PEDAGOGY Analyzes the pedagogical techniques and skills for teaching your instrument/voice/instrument family in both the private studio and class setting. Prerequisite: MUS 242. Co-requisite: MUS 341 (Spring) (3, 3T +0S)

381 MUSIC TECHNOLOGY Topics include use of MIDI, music notation software, and recording techniques. Prerequisite: MUS 234 (Fall, Spring, Summer) (3, 3T, +0L)

391 JUNIOR RECITAL A public half recital played by the student before an audience and two or more music faculty. Repertoire will be selected with applied music instructor. Prerequisite: MUS 242 (Fall, Spring, Summer) (1, 1T, +0L)

403 PERFORMANCE PRACTICE This course will include, depending on your instrument, piano and guitar accompanying techniques, early music performance practice, flamenco and guitar rhythms, South American performance practice, contemporary techniques for performing modern music. Prerequisite: MUS 310 (Fall, Spring, Summer) (3, 3T, +0S)

404 JAZZ COMBO I This course consists of rehearsals of graded pieces, arranged for the particular available instruments in the band. The NNMCMusic program will accept other types of instruments in the band. All musicians are welcome. Acceptance in the band will follow a previous audition. Prerequisite: MUS 152. (3, 0T+3S)

407 MUSIC LITERATURE In-depth investigation of major works for your instrument
or instrument family for both solo and ensemble, as well as surveying chamber music and concerti. Pre-requisite: MUS 324 (Spring) (3, 3T, +0L)

410 ENSEMBLE VII This course consists of rehearsals of graded pieces arranged for the particular available instruments in the band. The ideal band consists of 5 saxophones, 4 or 5 trumpets, 4 trombones, and 1 tuba, plus rhythm section, including Latin percussion. **Prerequisite:** MUS 314. (1, 0T+1S)

411 ENSEMBLE VIII This course consists of rehearsals of graded pieces arranged for the particular available instruments in the band. The ideal band consists of 5 saxophones, 4 or 5 trumpets, 4 trombones, and 1 tuba, plus rhythm section, including Latin percussion. **Prerequisite:** MUS 410. (1, 0T+1S)

413 JAZZ COMBO II This course consists of rehearsals of graded pieces, arranged for the particular available instruments in the band. The NNMC music program will accept other types of instruments in the band. All musicians are welcome. Acceptance in the band will follow a previous audition. **Prerequisite:** MUS 404. (3, 0T+3S)

424 MUSIC HISTORY TOPICS Course topic will change each semester, but may include: World Music, Women Composers, Ethnomusicology, History of Opera, Latin American Music, Native American Music, and American Music History. **Prerequisite:** MUS 310 (Fall, Spring, Summer) (3, 3T +0S)

425 CONTEMPORARY MUSIC HISTORY I Studies the American art form of jazz music from its origins to the present, including the various traditions, practices, historical events and people most important to its evolution. **Prerequisite:** MUS 234 and MUS 324. Fulfills Music History elective requirement. (Fall) (3, 3T +0S)

426 CONTEMPORARY MUSIC HISTORY II Explores major trends and developments in jazz, rock and other contemporary genres, also focusing on specific compositions and performances. **Prerequisite:** MUS 425. (Spring) (3, 3T +0S)

427 NEW MEXICAN MUSIC HISTORY Presents the history, vocabulary, origin and development of New Mexican musical genres up to the present day, including but not limited to: folkloric music, Flamenco, Mariachi and Native American Music. Pre-requisite: MUS 324. (Fall, Spring) (3, 3T +0S)

428 NEW MEXICAN MUSIC LITERATURE Explores the music literature and methods of teaching and performing the music of New Mexico, including folkloric, Flamenco, Mariachi and Pueblo styles. **Prerequisite:** MUS 427. (Fall, Spring) (3, 3T +0S)

433 CONTEMPORARY ARRANGING AND SCORING Practical Problems, creative arranging and scoring for various instrumental groups. **Prerequisite:** MUS 234 (Fall) (3, 3T, +0L)

435 INSTRUMENTATION AND ORCHESTRATION Introduces and studies the instruments of the orchestra and problems of scoring for diverse choirs, full orchestra and band. Studies advanced orchestration and arranging techniques through score analysis and student projects. **Prerequisites:** MUS 206 and MUS 234 (Fall, Spring) (3, 3T +0S)

436 TRANSCRIPTION AND COMPOSITION Introduction to the craft of musical composition and transcription with analysis, writing and transcription in various styles. **Prerequisites:** MUS 206 and MUS 234 (Spring) (3, 3T, +0L)

440 APPLIED LESSONS VII Applied private lessons on your instrument. **Prerequisite:** MUS 341 (Fall, Spring, Summer) (2-4 credits of Performance Music. Maximum course enrollment of 1)

441 APPLIED LESSONS VIII Applied private lessons on your instrument. **Prerequisite:**
MUS 440 (Fall, Spring, Summer) (2-4 credits of Performance Music. Maximum course enrollment of 1)

449 CHAMBER MUSIC III Small group performance. Prerequisite: MUS 349 (Fall, Spring, Summer) (1, 0T, +1L) (Minimum enrollment to make: 2)

450 DICTION FOR SINGERS Designed for the understanding of lyric diction, the international phonetic alphabet, and its application to classical and contemporary singing in Italian, Latin, Spanish, German, French and English. Prerequisite: MUS 140 (Fall, Spring) (3, 3T, +0L).

491 SENIOR RECITAL A public recital played by the student before an audience and two or more music faculty. Repertoire will be selected with applied music instructor. Prerequisite: MUS 391 Junior Recital. (Fall, Spring, Summer) (2, 2T, +0L)

### NATURAL RESOURCES (NR)

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<tr>
<th>Course</th>
<th>Description</th>
<th>Prerequisites</th>
<th>Co-requisite</th>
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<tbody>
<tr>
<td>101</td>
<td>SOILS Study of soil composition and classification; relationship of soil to plant growth and animal health; use of fertilizers, soil erosion and its control; world population growth and soil resources. Co-requisite: NR 101L. (3, 3T+0L)</td>
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<td>101L</td>
<td>SOILS LABORATORY Soil morphology and development. Field analysis and characterization of soil profiles. Impact of weather, drainage, agricultural, industrial, and man-made factors on edaphic characterization. Co-requisite: NR 101. (1, 0T+1L)</td>
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<td>102</td>
<td>WATER MANAGEMENT New Mexico and federal water laws, various methods of irrigation; livestock watering methods, water diversion, and soil erosion control. (3, 3T+0L)</td>
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<td>103</td>
<td>BOTANY OF FOREST AND RANGE Study of botany relationships involved when any tract of land is managed for both forage and timber crops. (3, 3T+0L)</td>
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### NURSING (NURS)

When participation is required at a clinical setting, students are responsible for their own transportation.

Clinical courses are graded on a Credit/No Credit basis except for NURS 114L where a letter grade is assigned.

100 NURSE AIDE This course focuses on the acquisition of knowledge and skills necessary to serve in the capacity of nurse aide. Successful completion of the nurse aide course prepares the student for The New Mexico Certification Exam for Nurse Aide. Prerequisites: ENG 108N and PD 108N; Co-requisite: NURS 100L. (Fall, Spring, Summer) (4, 4T, + OL).

100L NURSE AIDE LAB This course focuses on the application of nurse aide skills in simulated lab and clinical settings. Grades are awarded on a CR/NC basis. Co-requisite: NURS 100. (Fall, Spring, Summer) (1, 0T, +1L).

Successful completion of NURS 100 and NURS 100L is a prerequisite for admission into the NNMC Associate Degree in nursing program. State approved nurse aide certification will be accepted in lieu of completion of NURS 100 and NURS 100L.

104 DOSAGE CALCULATIONS This course focuses on dosage calculations and preparation of medications essential to safe nursing practice. Prerequisite: Admission to the Nursing Program. (Fall) (2, 2T, + 0L).

106 PHARMACOLOGY I This course introduces concepts necessary for legal, ethical,
safe, and effective drug administration. Cultural and life span considerations pertinent to drug administration are addressed. Quality improvement strategies to prevent medication errors are considered. Prerequisite: Admission to the Nursing Program. (Fall) (2, 2T, +0L).

107 PHARMACOLOGY II This course expands content presented in Pharmacology I. Emphasis is placed on major drug classifications, prototypes, therapeutic use, adverse effects, side effects, toxicity, nursing implications, and client education. Prerequisites: NURS 104, NURS 106, NURS 113/L, NURS 114L. (Spring) (2, 2T, +0L).

113 NURSING FUNDAMENTALS This course introduces knowledge and skills basic to client-centered nursing practice. Emphasis is placed on the nursing process, concepts of caring, communication, and the professional role. Prerequisite: Admission to the Nursing Program. Co-requisite: NURS 113L. (Fall) (4, 4T, +0L).

113L NURSING FUNDAMENTALS CLINICAL Concepts from NURS 113 are applied in simulation and clinical practicum. Prerequisite: Admission to the Nursing Program. Co-requisites: NURS 113. (Fall) (2, 0T, +2L).

114L INTRODUCTION TO HEALTH ASSESSMENT This course focuses on the development of core health assessment examination skills needed for entry into nursing practice. These skills include conducting a health history, performing a physical exam, and the documentation of these findings. Prerequisite: Admission to the Nursing Program. (Fall) (1, 0T+1S).

116 INTRODUCTION TO MATERNAL/CHILD NURSING The first eight weeks of this course introduces the nursing care and management of the non-complex childbearing client and newborn within the framework of family-centered care. The second eight weeks introduces the nursing care and management of the non-complex pediatric client within the framework of family-centered care. Emphasis is placed on childhood development and common pediatric disorders. Prerequisites: NURS 104, NURS 106, NURS 113/L, NURS 114L. (Spring) (2, 2T, +0L).

116L MATERNAL CHILD CLINICAL Concepts from NURS 116 are applied in simulation lab and clinical practicum. Prerequisite: NURS 116 (Summer) (1, 0T+1L)

119 ROLE TRANSITION/PRACTICAL NURSE This course provides information specific to the role of the Licensed Practical Nurse. Emphasis is placed on preparing the student to successfully pass the NCLEX-PN. Prerequisites: NURS 104, NURS 106, NURS 107, NURS 113/L, NURS 114L, NURS 116, NURS 125/L. (Summer) (2, 2T, +0L).

125 MEDICAL/SURGICAL NURSING I This course introduces nursing care and management of the adult client with common medical-surgical conditions. Prerequisite: NURS 104, NURS 106, NURS 113/L, NURS 114L. Co-requisite: NURS 125L. (Spring) (4, 4T, +0L).

125L MEDICAL/SURGICAL I CLINICAL Concepts from NURS 125 are applied to simulation lab and clinical practicum. Prerequisite: NURS 104, NURS 106, NURS 113/L, NURS 114L. Co-requisite: NURS 125 (Spring) (2, 0T, +2L).

200 LPN TO RN ROLE TRANSITION This course is designed specifically for returning Licensed Practical Nurses entering into Level II of the associate degree nursing program. It provides a foundation for success through support and enhancement of the student’s prior learning, experience, and knowledge as they transition to the student nurse role. Prerequisite: Admission into Level II of the Nursing Program. (2, 2T, +0L) (Summer).

214 PSYCHIATRIC/MENTAL HEALTH NURSING This course introduces nursing care and management of the psychiatric/mental health client. Prerequisite: NURS 217/L,
NURS 218/L, NURS 225/L. Co-requisite: NURS 214L. (Spring) (3, 3T, +0L).

214L PSYCHIATRIC/MENTAL HEALTH NURSING CLINICAL Concepts from NURS 214 are applied in a clinical practicum. Prerequisites: NURS 117/L, NURS 118/L, NURS 225/L. Co-requisite: NURS 214. (Spring) (1, 0T, +1L).

217 MATERNAL/NEWBORN NURSING This course expands the focus of nursing care and management of the child bearing client and newborn to include those with complex health care needs. This course integrates nursing care and management of women’s health issues. Prerequisites: NRS 2. Co-requisites: NURS 217L. (Fall) (1, 1T, +0L).

217L MATERNAL/NEWBORN CLINICAL Concepts of NURS 217 are applied in simulation lab and clinical practicum. Prerequisites: NRS 2. Co-requisite: NURS 217. (Fall) (1, 0T, +1L).

218 PEDIATRIC NURSING This course expands the focus of nursing care and management of the pediatric client to include those with complex health care needs. Prerequisites: NRS 2. Co-requisite: NURS 218L. (Fall) (1, 1T, +0L).

218L PEDIATRIC NURSING CLINICAL Concepts of NURS 218 are applied in simulation lab and clinical practicum. Prerequisites: NRS 2. Co-requisite: NURS 218. (Fall) (1, 0T, +1L).

225 MEDICAL/SURGICAL NURSING II This course expands the focus of nursing care and management of the adult client with medical/surgical disorders. Prerequisites: NURS 125/L, NURS 107, and NURS 116. Co-requisite: NURS 225L. (Fall) (4, 4T +0L).

225L MEDICAL/SURGICAL NURSING II CLINICAL Concepts of Nursing 225 are applied in simulation lab and clinical practicum. Prerequisites: NRS 2. Co-requisite: NURS 225. (Fall) (2, 0T, +2L).

235 MEDICAL/SURGICAL NURSING III This course addresses the nursing care and management of the medical surgical adult client with complex care needs. Prerequisites: NURS 225/L, NURS 217/L, NURS 218/L. Co-requisite: NURS 235L. (Spring) (4, 4T +0L).

235L MEDICAL/SURGICAL NURSING III CLINICAL Concepts of NURS 235 are applied in simulation and clinical practicum. Experiences that facilitate entry into practice are included in this practicum. Prerequisites: NURS 217/L, NURS 218/L, NURS 225/L. Co-requisite: NURS 235L. (Spring) (2, 0T +2L).

240 ROLE TRANSITION/REGISTERED NURSE This course provides information specific to the role of the Registered Nurse. Aspects of nursing leadership, management, role assimilation, and NCLEX-RN preparation are emphasized. Prerequisites: NURS 217/L, NURS 218/L, NURS 225/L. (Spring) (1, 1T +0L).

343 PATHOPHYSIOLOGY I This first of a two-part course addresses pathophysiological responses and adaptation of the physical body to an insult. Analysis of pathological alterations in health at the cellular and systems level and implications for nursing care are emphasized. Prerequisites: BIOL 238/L. (3, 3T+0L)

344 PATHOPHYSIOLOGY II This second of a two-part course continues to address pathophysiological responses and adaptation of the physical body to an insult. Students focus on multi-system interaction of the body to an illness or injury. The pathophysiological basis of addictions and behavioral disorders is explored. While the traditional biologic basis for disease is emphasized, students are also introduced to the biology of belief. Prerequisites: BIOL 238/L. (3, 3T+0L)

400 NURSING IN TRANSITION This course examines the role of the baccalaureate prepared nurse in today’s health care systems. Historic, contemporary and future roles
of the nurse are addressed. Skills in scholarly exposition and the use of technology are developed. Prerequisite: Admission to the program. (2, 2T+0L)

401 INTEGRAL NURSING THEORY The Theory of Integral Nursing and Holistic Nursing Theories are explored. The concept of praxis is introduced. Florence Nightingale’s legacy and philosophical foundation are included. Students develop skills related to concepts such as self-awareness, self-care, relationship-centered care, nurse as environment and reflective practice. The use of conscious intention is emphasized. Pre- or Co-requisite: NURS 400. (3, 3T+0L)

410 AN INTEGRATED APPROACH TO EVIDENCE-BASED PRACTICE This course examines research methodologies utilized in nursing research. Emphasis is on utilization of research findings to establish evidence-based nursing interventions. Students analyze research findings aimed at selected health concerns. Students explore definitions of evidenced-based practice and examine how worldviews and theories influence research. Prerequisites: MATH 145 and NURS 401. (3, 3T+0L)

420 INTEGRAL HEALTH ASSESSMENT This course emphasizes development of skills in health assessment of (allopathic) human systems. Alternative systems (i.e., Ayurvedic, Native American, Oriental Medicine, and Intuitive) are introduced. Skills in interviewing, history taking, physical examination, and documentation and use of assessment data in planning care are developed. Laboratory and selected clinical settings are used to practice skill development. The Theory of Integral Nursing is explored as a model to frame data collection, organization, and synthesis into a cohesive whole. Prerequisites: NURS 401. (3, 2T+1L)

430 COMPLEMENTARY AND ALTERNATIVE THERAPIES IN NURSING This course provides an introduction to evidence-based complementary and alternative approaches to health care. Students acquire knowledge related to alternative and complementary healing modalities that can be incorporated into professional nursing practice and self care practices. Students experience and develop beginning skills in the provision of CAM modalities as they interact with practitioners in selected clinical settings. Prerequisite: NURS 401. (3, 2T+1L)

440 HEALTH ISSUES, POLICY AND POLITICS IN HEALTH CARE (WIC) This course emphasizes empowering students with knowledge, skills, and attitudes to effect change in health policy to improve health care delivery. Students analyze contemporary health care issues of concern to nursing and learn strategies for effective involvement in policy-making decisions and policy implementation. Students examine work environments and the impact of organizational systems on the quality of care. Students apply the Theory of Integral Nursing to a current health policy issue in a position paper expressed orally to a group. Prerequisite: NURS 401. (3, 3T+0L)

450 COMMUNITY AND GLOBAL HEALTH I This first of a 2-part course provides an overview of contemporary community health nursing practice. The influence of culture on healthcare beliefs and practices is emphasized. Self-care is linked to population health. Health problems of selected populations within New Mexico are examined. Public Health Nursing Competencies are linked with the Theory of Integral Nursing to form the basis for student’s learning experiences. Prerequisites: NURS 401, and strongly suggest NURS 410. (3, 3T+0L)

451 COMMUNITY AND GLOBAL HEALTH II This second of a 2-part course examines global health issues in relationship to local, regional, and international nursing practice. Self-care is linked to global health. In this course students select and focus upon a global health issue relevant to local community nursing practice. A service learning project
based upon the selected issue provides the focus of clinical experience. Prerequisite: NURS 450. (4, 3T+1L)

460 INTEGRAL COMMUNICATION AND TEACHING This course examines communication techniques, coaching, and teaching strategies, to enhance and facilitate cognitive and behavioral change. Students demonstrate principles of Integral Health Coaching, Motivational Interviewing, and Non-Violent Communication. Students implement an evidence-based service learning teaching project. Prerequisite: NURS 401. (2, 2T+0L)

470 TRANSFORMATIONAL LEADERSHIP IN NURSING This course focuses on the principles of transformational leadership as applied to the nurse leader at the bedside, within an organization, in the community, and in the profession. The student is introduced to Complexity Science, Appreciative Inquiry, and Emotional Intelligence. Self-care is promoted as a leadership quality. Career advancement through lifelong learning is emphasized. Prerequisite: NURS 401. (4, 4T+0L)

480 INTEGRAL NURSING CAPSTONE COURSE This capstone course emphasizes reflection, integration, and synthesis of concepts from previous courses. It is primarily a self-directed course, and is based upon the creation of a senior portfolio which demonstrates learning in cognitive, affective, and psychomotor domains. The portfolio is designed to demonstrate evidence of mastery of program objectives and serves as an assessment of student learning. The portfolio includes evidence of ability to conduct integral health assessments and evidence of ability to develop and implement service learning projects. Students include evidence of skill development in the use of complementary/alternative therapies in nursing practice. A reflective essay and a plan for continued professional and personal development is included in the portfolio. Prerequisites: All Nursing courses. (2, 2T+0L)

OFFICE ADMINISTRATION (OA)

103 INTRODUCTION TO KEYBOARDING Introduction to basic keyboarding skills on the letters of the alphabet, numbers, and symbols. Emphasizes speed and accuracy. This course is for students with NO previous instruction in keyboarding. (1, 1T+S)

115 RECORD/INFORMATION MANAGEMENT The purpose of this course is to introduce individuals to the essentials of records and recordkeeping systems in organizations. The impact of electronic records will be particular focus. In this course, records management (RM) includes both traditional records management plus challenges by modern information communication technologies (ICT). Students will also review software tools and technologies for managing records in the modern organization. (Fall) (3, 3T+0S).

117 BUSINESS MATH This course teaches basic math skills for financial situations. A student will learn how to calculate payroll, asset valuation, interest and retail evaluations. (3, 3T+0S)

118 PROFESSIONAL DEVELOPMENT Promotes self-understanding, self-management, personal and professional communication and appearance, leadership, personal and interpersonal relationships, positive attitudes, and goal setting. (3, 3T+0S)

135 INTRODUCTION TO ACCOUNTING Studies basic accounting principles and conceptual framework. Places heavy emphasis on the accounting model. (3, 3T+0S)

151 INTRODUCTION TO MS PUBLISHER Introduction to electronic desktop publishing, focusing on how to design and edit publications for use in a variety of personal and business applications. (1, 1T+0S)
236  ADMINISTRATIVE PROCEDURES  You will study office procedures, technology, records management, human relations, ethics, and telecommunications. Prerequisites: OA 115, ENG 111, and BA 200. (Spring) (3, 3T+0S)

240  INTRODUCTION TO PROJECT MANAGEMENT  This course teaches the basics of using Microsoft Project to help you manage projects, keep track of deadlines, resources, task distribution, constraints and contingencies. This is an inter-disciplinary course designed to assist in meeting project deadlines in all fields of study. (Fall) (3, 3T+0S)

261  DESKTOP PUBLISHING MS PUBLISHER  Introduction and application of desktop publishing concepts using Microsoft Publisher in the Windows environment to create flyers, newsletters, reports, brochures, resumes, and other publications using page-layout software. (3, 3T+0S)

266  MICROSOFT OFFICE SPECIALIST TRAINING  This course will focus on advanced training in the use of the Microsoft Suite of software applications (Word, Excel, PowerPoint, and Access) in preparation to take the Microsoft Office User Specialist Exam (MOS). Prerequisites: BCIS 249, BCIS 265, BCIS 225 AND BCIS 226. (Spring) (3, 3T+0S).

PERSONAL DEVELOPMENT (PD)

108N  BASIC COMPUTATIONAL SKILLS  Develops proficiency in basic mathematical concepts, including addition, subtraction, multiplication, and division of whole numbers, fractions, and decimals. You will also study the use of percentages, ratios, solving for one unknown (pre-algebra), and determining simple geometric areas. Math concepts are presented in a simple, logical, and applied way to prepare you for MATH 100N or above. CR/NC (Fall and Spring) (4, 3T+1L)

121N  READING AND WRITING FOR COLLEGE SUCCESS  This course focuses on the skills necessary to succeed in college courses, including skills in critical reading and writing, critical thinking, study strategies, computer literacy, time management, and goal setting. Students will also be exposed to the services offered by essential campus resources and learn strategies to best utilize those resources for academic success. (4, 4T+0S)

120  BECOMING A MASTER STUDENT  Through concentrating on study skills, learning styles, goal setting, and developing critical thinking and writing skills you will be given an opportunity to develop strategies which you can adopt and modify for lifelong learning and academic, personal, and professional success. (1-3, 1-3T+0S)

PHILOSOPHY (PHIL)

Note: All 100 and 200 level courses have a prerequisite of ENG 109N or an adequate score on the Course Placement Evaluation.

110  INTRODUCTION TO PHILOSOPHICAL PROBLEMS  Analysis of problems in values, knowledge, and reality in relationship to social, political, and religious philosophies. (3, 3T+0S)

111  HISTORY OF PHILOSOPHY  Surveys the history of philosophical thought from the ancient Greeks to the present. (3, 3T+0S)

220  ETHICS  Survey of the development of morality, principles of individual and social behavior, and past and present ethical issues. (3, 3T+0S)

250  CRITICAL THINKING  You will develop skills for understanding and analyzing arguments in context by practicing the tools of traditional logic, including categorical logic and the identification of logical fallacies, through devoting attention to examin-
ing selections from academic texts from various disciplines. Your in-class work will be exercise intensive so as to learn critical thinking as a skill foundation for academic excellence. **Prerequisite:** ENG 111. (3, 3T+0S)

**300 COMPARATIVE METAPHYSICS** You will study texts from various cultures which show the metaphysical principles or assumptions regarding such matters as: whether time is linear or cyclical, and whether human beings are fundamentally individual or social. **Prerequisite:** PGIL 250. (Fall) (3, 3T+0S)

**364 GREAT WORKS OF WESTERN PHILOSOPHY** You will explore major works from the Western philosophical tradition, using varied texts based on student and instructor interest. You may take this course twice for credit (with permission of program director). **Prerequisite:** PHIL 250. (Fall) (3, 3T+0S)

**366 GREAT WORKS OF ASIAN THOUGHT** You will explore a selection of canonical readings from the classical Eastern traditions, including literary, philosophical, and religious writings of China, India, and Japan. You will use textual analysis which emphasizes recurrent, essential themes and concepts to highlight common themes between texts in an effort to identify the shared wisdom in these diverse traditions. **Prerequisite:** PHIL 250. (Spring) (3, 3T+0S)

**452 PHILOSOPHY OF TECHNOLOGY** You will examine technology in its distinctly Western form by tracing the essence of technology back to fundamental characteristics of Western thinking, beginning with the ancient Greek philosophers through contemporary philosophical analyses of technology. You will explore technology through popular works (such as film), which provide insight into the current human relationship to technology. **Prerequisite:** PHIL 250. (Spring) (3, 3T+0S)

**PHYSICS (PHYS)**

**110 INTRODUCTION TO PHYSICS** Introduction to the fundamental laws of classical and modern physics. **Co-requisite:** PHYS 110L. (3, 3T+0L)

**110L INTRODUCTION TO PHYSICS LAB** **Co-requisite:** PHYS 110. (1, 0T+1L)

**121 APPLIED PHYSICS I** Study of the physics of mechanics, heat, and sound with applications in modern technology: for students in technological fields. **Prerequisite:** MATH 130; **Co-requisite:** PHYS 121L. (3, 3T+0L)

**121L APPLIED PHYSICS I LAB** **Co-requisite:** PHYS 121. (1, 0T+1L)

**122 APPLIED PHYSICS II** Continuation of PHYS 121. **Prerequisite:** PHYS 121/L; **Co-requisite:** PHYS 122L. (3, 3T+0L)

**122L APPLIED PHYSICS II LAB** **Co-requisite:** PHYS 122. (1, 0T+1L)

**215 ENGINEERING PHYSICS I** Motion in one/two dimensions, laws of motion, circular motion and applications of Newton’s laws, energy of a system and conservation of energy, linear momentum and collisions, angular momentum, oscillatory motion, wave motion and sound and superposition. **Prerequisite:** MATH 162 or ENGR 120; **Co-requisite:** PHYS 215L. [Fall, Spring, Summer] (3, 3T+0L)

**215L ENGINEERING PHYSICS I LAB** **Co-requisite:** PHYS 215. (1, 0T+1S)

**216 ENGINEERING PHYSICS II** Temperature and Thermal Expansion, Ideal Gas Law, Electric fields, Electric potential, Magnetism and Optics. **Prerequisite:** PHYS 215/L; **Co-requisite:** PHYS 216L. (3, 3T+0L)

**216L ENGINEERING PHYSICS II LAB** **Co-requisite:** PHYS 216. (1, 0T+1L)
262 GENERAL PHYSICS You will study optics and modern physics. Prerequisites: PHYS 122/L or PHYS 216/L; Co-requisite: PHYS 262L. (3, 3T+0L)

262L GENERAL PHYSICS LAB You will engage in laboratory experiences supportive of PHYS 262, for which this course is a co-requisite. (1, 0T+1L)

290 UNDERGRADUATE RESEARCH EXPERIENCE IN PHYSICS A math-based experience in physics research, combining computational and experimental techniques through which you will learn computational modeling, experimental design, library and Internet information searches and research methodology while interacting with peers and faculty. You will prepare a technical report or poster on your activities. Research questions focus on nonlinear dynamics, chemical physics, and particle physics. (may be repeated for credit). Prerequisite: Grade average of at least 3.50 in MATH 130 and MATH 150, or permission of instructor. (3, 3T+0L)

302 OPTICS You will study geometrical optics, wave theory of light, Fresnel and Fraunhofer diffraction, polarization, absorption, dispersion, and scattering. Prerequisite: PHYS 262/L.

330 INTRODUCTION TO MODERN PHYSICS You will study special relativity, quantum effects, quantum mechanics, atomic and subatomic physics, and the instruments of modern physics. Prerequisite: PHYS 262/L; Co-requisite: PHYS 330L. (3, 3T+0L)

330L INTRODUCTION TO MODERN PHYSICS LAB You will engage in laboratory experiences supportive of PHYS 330, for which this course is a co-requisite. (1, 0T+1L)

331 THERMODYNAMICS AND STATISTICAL MECHANICS You will study the concepts of heat and thermodynamics, large numbers and probability distributions, oscillator, spin and gas systems, simple interacting systems, and Fermi statistics. Prerequisite: MATH 311 and 314. (3, 3T+0L)

405 ELECTRICITY AND MAGNETISM You will study electrostatics, the theory of dialectic materials, magnetostatics, the theory of magnetic materials, direct and alternating circuit theory, Maxwell equations, propagation, refraction and reflection of plane waves and wave guides. Prerequisite: MATH 311 and 312.

PLUMBING (PLBT)

101 PLUMBING APPRENTICE I First year, First Semester: Instruction is focused on heritage, job safety/OSHA/HAZ-Com, use and care of tools, soldering and brazing, and oxy/acetylene cutting. Prerequisites: MATH 102 or Pipefitter (UA Local 412 Union Membership. (Fall, Spring) (2T+3S).

102 PLUMBING APPRENTICE II First year, second semester: Instruction is focused on applied math, applied science, and rigging and signaling cranes. Prerequisites: PLBT 101 or department permission. (Fall, Spring) (2T+3S).

103 PLUMBING APPRENTICE III Second year, first semester: Instruction is focused on plan reading/drawing, introduction to computers, and pipe valves and fittings. Prerequisites: PLBT 102 or department permission. (Fall, Spring) (2T+3S).

104 PLUMBING APPRENTICE IV Second year, second semester: Instruction is focused on drainage, fixtures, appliances, water supply, and gas installations. Prerequisites: PLBT 103 or department permission. (Fall, Spring) (2T+3S).

106 PLUMBING APPRENTICE V Third year, first semester: Instruction is focused on basic electricity, electrical controls, pneumatics, and air conditioning/refrigeration I. Prerequisites: PLBT 104 or department permission. (Fall, Spring) (2T+3S).
POLITICAL SCIENCE / PSYCHOLOGY

206 PLUMBING APPRENTICE VI Third year, second semester: Instruction is focused on hydronics/stream/pump alignment, radiant heating/boilers, and air conditioning/refrigeration V. Prerequisites: PLBT 106 or department permission. (Fall, Spring) (2T+3S)

207 PLUMBING APPRENTICE VII Fourth year, first semester: Instruction is focused on plumbing code, mechanical code, and pipefitting code. Prerequisites: PLBT 206 or department permission. (Fall, Spring) (2T+3S).

208 PLUMBING APPRENTICE VIII Fourth year, second semester: Instruction is focused on welding, brazing, and soldering. Prerequisites: PLBT 207 or department permission. (Fall, Spring) (2T+3S).

209 PLUMBING APPRENTICE IX Fifth year, first semester: The focus of instructions is on T-Drill/Pex, Victaulic/Pro-press, Tube Bending, and Fusion/PVDF/PVC/CPVC. Prerequisites: PLBT 208 or department permission. (Fall, Spring) (2T+3S).

242 PLUMBING APPRENTICE X Fifth year, second semester: The focus of instruction is on additional welding skills necessary to become certified as a Plumbing/Pipefitter welder. Prerequisites: PLBT 209 or department permission. (Fall, Spring) (2T+3S).

POLITICAL SCIENCE (PSCI)

Note: All courses have a prerequisite of ENG 109N or an adequate score on the Course Placement Evaluation.

110 THE POLITICAL WORLD Introduces you to political science with emphasis on the evolution of political thought and the realities of politics today. (3, 3T+0S)

120 CONTEMPORARY POLITICAL ISSUES You will study political issues confronting the individual in modern society at local, national, and international levels. (3, 3T+0S)

200 AMERICAN POLITICS Survey of American politics, theory of democracy, political institutions, the electorate, American governmental branches and their bureaucracies. (3, 3T+0S)

210 STATE AND LOCAL GOVERNMENT You will explore the nature of state and local governments and the relationships which those governments have with the federal government; functions of state and local governments with emphasis on New Mexico municipal, county, and state governments; study of New Mexico politics and its role in political parties. (3, 3T+0S)

212 THE AMERICAN PRESIDENCY You will study the Presidency as an institution of power and of leadership, and its relation to other political institutions. (3, 3T+0S)

PSYCHOLOGY (PSY)

Note: All 100 and 200 level courses have a prerequisite of ENG 109N or an adequate score on the Course Placement Evaluation.

105 GENERAL PSYCHOLOGY Introduces you to the traditional areas of psychology including psychobiology, learning, motivation, personality, psychopathology, psychotherapy and social problems. You will examine factors which determine and affect behavior, with emphasis on psychological principles applied to the human experience. (3, 3T+0S)

120 TOPICS IN PSYCHOLOGY You will study selected topics in psychology and interdisciplinary application including, but not limited to, motivation, communication, leadership, learning skills and styles, interpersonal relationships, conflict resolution, and creativity. May be repeated for credit when topics vary. (2, 2T+0S)
150 PERSONAL GROWTH You will explore the personal development of one’s mental, emotional, and physical state. You will study and discuss such interventions as nutrition, stress management, problem solving, and life-style changes. (3, 3T+0S)

210 THEORIES OF PERSONALITY AND COUNSELING APPLICATIONS Survey of theory and application of both classical and contemporary approaches to the study of personality, with emphasis on an application of theory to counseling; consideration of legal and ethical issues within the profession of counseling. (3, 3T+0S)

211 APPLIED PSYCHOLOGY Application of psychological theory to topics with applications to everyday life, law, behavior modification, biofeedback, counseling, consumer psychology, and environmental problems. (3, 3T+0S)

212 CHILD PSYCHOLOGY AND DEVELOPMENT You will study of the development and behavior of the child from conception to adolescence, with emphasis on physical, emotional, social, and intellectual development through an understanding of the major theorists including Erikson and Piaget. Practical applications of theory into practice for preschool-elementary classroom will be incorporated. (3, 3T+0S)

215 BASIC COUNSELING TECHNIQUES You will become acquainted with basic counseling skills, including active listening techniques such as paraphrasing, summarization, attending behaviors, and focusing; emphasis is on rehearsal of skills. (3, 3T+0S)

216 ADVANCED COUNSELING TECHNIQUES Emphasizes therapeutic interventions, conceptualization of problems, setting goals, selecting strategies, and treatment planning. Prerequisite: PSY 215. (spring) (3, 3T+0S)

217 INTERVIEWING AND ASSESSMENT Covers basic counseling skills which include active listening techniques such as reflection of content and feelings. Also includes therapeutic interventions, assessment of clients, setting goals, selecting strategies with clients, and treatment planning. Emphasis is on rehearsal of skills. (3, 3T+0S)

225 CREATIVE DRAMA TECHNIQUES FOR THE CLASSROOM K-12 Designed for Education and Human Services majors, this course will assist you to focus on techniques of creative dramatics for use in the classroom and/or counseling situations. You will be exposed to the study of psychodrama and the therapeutic uses of role-play, as well as being exposed to theatre games, exercises, and improvisation as adapted to various curricula for K-12 (science, social studies, math, language arts, etc.). You will participate in creative drama activities and have the opportunity to lead a group using the learned techniques in that group’s curriculum field. [Cross-listed as THE 225] (3, 3T+0S)

229 ADOLESCENT PSYCHOLOGY You will study adolescent psychology from different theoretical perspectives, examining the process of development during adolescence including such topics as physiological, sexual, and emotional development, as well as the role of peer and family influences in the process of self-emergence and personal adjustment. (3, 3T+0S)

230 PSYCHOLOGY OF ADJUSTMENT Psychological health, mental illness, adjustment problems (divorce, death, illness, etc.) and the adjustment process. (3, 3T+0S)

232 ABNORMAL PSYCHOLOGY Review of the historical, scientific, and ethical issues in the field of psychopathology; theories of abnormal behavior development, systems of therapy, and relevant research. (3, 3T+0S)

Completion of PSY 240 and PSY 241s meets the criteria for education in the twelve core function which is part of the licensure process for Alcohol and Drug Abuse Counseling.

240 ALCOHOL & SUBSTANCE ABUSE EVALUATION AND ASSESSMENT You will
study five of the twelve core functions and global criteria of the alcohol and other substance abuse, including screening, intake, orientation, assessment, and crisis intervention. In this course you will devote eight clock hours to ethics of the substance abuse counselor. (3, 3T+0S)

241 ALCOHOL & SUBSTANCE ABUSE TREATMENT AND REFERRAL You will study seven of the twelve core functions and global criteria of the alcohol and other substance abuse, including treatment planning, counseling, case management, client education, referral, report and record keeping, and consultation with other professionals in regard to client treatment/services. (3, 3T+0S)

260 FAMILY SYSTEMS THEORY You will study the major theories in family systems with emphasis on the counseling applications and practice in counseling interventions with dysfunctional family structures. (3, 3T+0S)

261 THERAPEUTIC INTERVENTIONS WITH CHILDREN & ADOLESCENTS You will study both the classic and contemporary theories of family systems, identifying key concepts and basic assumptions of a number of theories along with treatment approaches and therapeutic techniques. (3, 3T+0S)

262 INTERVENING IN ADOLESCENT BEHAVIOR You will focus on problem behaviors of adolescence and solution applications including, but not limited to, conflict management and resolution, crisis intervention, and problem-solving techniques. Prerequisite: PSY 229. (3, 3T+0S)

271 HUMAN SEXUALITY You will go through a thorough analysis of physiological, behavioral, experiential, social, and cultural aspects of human sexuality; learning, role behavior, development, mental health, aesthetics, imagery, and social deviance as related to sexuality. (3, 3T+0S)

275 GROUP PROCESS Introduces you to basic issues and stages of development in the group counseling process: overview of types of counseling groups, group theory, leadership, ethical guidelines, group formation and termination. (3, 3T+0S)

280 PRACTICUM FOR HUMAN SERVICES Field or practical experience for individuals in the Human Services degree program: supervision by faculty member and a professional worker in a situation involving practical application of skills learned in the classroom. With the instructor’s guidance and permission, you will arrange for the experience which requires at least 50 clock hours of supervised experience for each credit hour granted. Prerequisite: PSY 275 and permission of the program director. (3, 3T+0S)

281 PRACTICUM FOR SUBSTANCE ABUSE COUNSELORS Field or practical experience for individuals in the Substance Abuse Counselor degree program: supervision by faculty member and a professional worker in a situation involving practical application of skills learned in the classroom. With the instructor’s guidance and permission, you will arrange for the experience which requires at least 50 clock hours of supervised experience for each credit hour granted. Prerequisite: PSY 241 and permission of the program director. (3, 3T+0S)

283 MENTORING PRACTICUM You will initially take part in a four-hour training which will cover leadership, community relations, self esteem, and communication skills. Thereafter, you will participate individually or in small groups of mentors, in a community or college project, activity, or club. You may also participate with the program in an area related to your degree major. You will put in a total of 48 hours, including lecture time, required for this course. May be repeated once for credit. (1, 0T+1L)

285 CRISIS INTERVENTION Advanced techniques for intervention in crisis situations,
including skills of assessment, active listening, focused exploration, action planning, termination and treatment of planning; reviews major situations that create crisis. **Prerequisite:** PSY 215. (Fall) (3, 3T+0S)

286 **GRIEF COUNSELING SKILLS** Introduces you to the specific skills of grief counseling dealing with loss, death, and crisis. **Prerequisite:** PSY 215. (3, 3T+0S)

290 **DEVELOPMENTAL PSYCHOLOGY** You will study the more salient aspects of behavior and development through the lifespan from conception through old age, with emphasis on current research and theory. (3, 3T+0S)

301 **BIOPSYCHOLOGY** You will explore the biological bases of behavior, learning how the biological perspectives are applied to understanding behavior including, but not limited to, anatomy and physiology of the brain, sensory systems, genetics, sexuality, hormones, neurotransmitters, and the biological basis of learning, memory, emotions, and stress. **Prerequisites:** ENG 111 and PSY 105. (3, 3T+0S)

302 **ISSUES OF DEATH AND DYING** This course studies the issues of death and dying including individual and social perspectives, developmental understanding of death, impact of death on families, the stages of dying and grief and the legal and ethical issues regarding death and dying. **Prerequisites:** ENG 111, PSY 105 (3, 3T+0S)

305 **POSITIVE PSYCHOLOGY** This course is the study of how human beings prosper in the face of adversity. Its goal is to identify and enhance the human strengths and virtues that make life worth living. **Prerequisites:** ENG 112 and PSY 105 (Fall, Spring, Summer) (3, 3T+0S)

321 **RESEARCH DESIGN IN PSYCHOLOGY** You will study psychological research with an emphasis in theory and learning the basic skills of research methodology, experimental design, non-experimental design, and research reporting. **Prerequisites:** ENG 111, PSY 105, and MATH 145. (3, 3T+0S)

370 **SOCIAL PSYCHOLOGY** Students will explore factors that affect individual behavior in group situations; individual behavior with the family, at work, and in extreme situations such as combat; aggression, and conformity. **Prerequisites:** ENG 111, PSY 105 (3, 3T+0S).

400 **SPECIAL TOPICS IN PSYCHOLOGY** You may enroll in this course twice for credit as its content and focus will be on varied specialized fields in psychology. **Prerequisites:** ENG 111 and PSY 105. (3, 3T+0S)

410 **COMPARATIVE PERSPECTIVES IN PSYCHOLOGY** In this course, you will examine various theories related to the fundamental nature of the mind, mental states, and mental processes. Your study will emphasize traditional perspectives of the East and the West, giving careful consideration to questions concerning the relation between the mind and the physical world. **Prerequisites:** ENG 111 and PSY 105. (3, 3T+0S)

411 **HUMAN ECOLOGY** Because each of us contributes to the human ecological web, in this course you will explore how the human psychological perspective and environment are independent and interrelated. **Prerequisite:** ENG 111 and PSY 105. (3, 3T+0S)

421 **RESEARCH IN PSYCHOLOGY** You will implement, interpret, and report on individually designed psychological research projects. **Prerequisite:** PSY 321. (3, 3T+0S)

456 **GRIEF THEORY AND PROCESS** The student will study theories of grief and the grief process and models of bereavement examining the ethical issues involved in the grief process. **Prerequisites:** ENG 111, PSY 105 (3, 3T+0S)

477 **PSYCHOLOGY OF GENDER AND SEXUALITY** The student will explore issues in
the behavior of men and women, including theoretical perspectives, stereotyping, gender differences, development, sexuality, and social and cultural problems. Prerequisites: ENG 111, PSY 105. (3, 3T+0)

**PUEBLO INDIAN STUDIES (PIS)**

Note: All 200 level courses have a prerequisite of ENG 109N or adequate score on Course Placement Evaluation.

200 **INTRODUCTION TO PUEBLO INDIAN STUDIES** You will survey academic approaches, such as history, linguistics, and anthropology, to the study of Pueblo Indians and their neighbors. Prerequisite: ENG 109N. (Fall, Spring) (3, 3T+0S)

220 **PUEBLO ARTS, CRAFTS, AND CULTURE** You will be introduced to this course through stories which accompany hands-on learning in various arts and crafts as told in the Pueblos for daily life and the transmission of cultural practices and knowledge. The course is taught by social scientists, along with artists in beadwork, fabric work, wood carving, storytelling, and more. (3, 3T+0S)

240 **RESEARCH TOPICS IN PUEBLO INDIAN STUDIES** You will engage in directed one-on-one research topics related to Pueblo Indian Studies. May be repeated to a maximum of 6 crs. Prerequisite: permission of instructor. (1-6, 1-6T+0S)

242 **PUEBLO INDIAN WOMEN'S LIVES** You will survey anthropological, sociological, historical, life history, arts and crafts, and other writing by and about Pueblo Indian women. Topics may vary from term to term. (Fall) (3, 3T+0S)

245 **SPECIAL TOPICS IN TRIBAL LANGUAGES** This course will fulfill the college's general education language requirement. Students will engage in direct language acquisition related to the course of the study of indigenous languages. Students will directly work with the tribal language program in which they have membership. Prerequisite: permission of instructor (Fall, Spring) (3, 3T+0S)

250 **INTERNSHIP IN TRIBAL LEADERSHIP, COMMUNICATION, AND TECHNOLOGY I** You will do a Field Service Learning and Internship with the Pueblo in which you have membership. Permission of instructor. Graded CR/NC. (3, 0T+3L)

251 **INTERNSHIP IN TRIBAL LEADERSHIP, COMMUNICATION, AND TECHNOLOGY II** This is a continuation of Pis 250. You will do a field service learning and internship. Permission of instructor. Graded CR/NC. (3, 0T+3L)

252 **PUEBLO INDIAN HISTORY** You will study academic approaches to historical studies of Pueblo Indians in New Mexico and Arizona from pre-Columbia to the present using archival sources, ethno-historical resources, and federal records. (3, 3T+0S)

256 **PUEBLO TRIBAL GOVERNMENTS** You will study the forms of government practices used by Pueblo Peoples at the time of contact with Europeans to the present. (3, 3T+0S)

258 **INDIAN GAMING, ENTREPRENEURSHIP, SOVEREIGNTY, AND CASINOS** You will survey games played by Pueblo Indians from earliest times to the present and how the establishment of casinos fits within these traditions. You will study the recent history of gaming from Bingo operations and the tribal court battles to the passage of the federal Indian Gaming Regulatory Act (1988). You will also explore and debate the importance of political and economic issues to Pueblo gaming. Prerequisite: ENG 111. Cross-listed as BA 258. (3, 3T+0S)

265 **NATIVE AMERICAN LITERATURE I** Involves a survey of Native American writing
from the time of the European invasion to the present with an emphasis on contemporary authors. Cross-listed as ENG 265. **Prerequisite:** ENG 111. (3, 3T+0S)

**266 NATIVE AMERICAN LITERATURE II** Involves critical reading and discussions of writings by Native American writers of fiction (short stories and novels) and poetry. Cross-listed as ENG 266. **Prerequisite:** ENG 111. (3, 3T+0S)

**346 TOURISM AND THE ARTS IN NEW MEXICO PUEBLOS** As tourism and art production have become principal means for the Pueblo peoples of New Mexico to support their families and communities, you will study this course through a multi-lens perspective of this economic, cultural, and aesthetic reality using historical readings, short films, and visits to local museums and Pueblo artists’ galleries. **Prerequisites:** PIS 200 and ENG 111. (Fall, Spring). (3, 3T+0S).

**370 PUEBLO INDIANS AND EDUCATION** You will examine traditional ways of learning in Pueblo Indian cultures and compare those teaching methods with BIA and contemporary compact schools and public schools. **Prerequisites:** PIS 200 and ENG 111. (Fall, Spring) (3,3T+0S).

**372 PUEBLO HEALTH CONCEPTS AND PRACTICES** You will examine Pueblo health care beliefs, values, and practices in modern life. **Prerequisites:** PIS 200 and ENG 111. (Fall, Spring) (3, 3T+0S)

**381 SPIRIT OF PLACE, NATIVE SENSES OF PLACE** You will examine the meaning of place in your life and its particular importance to understanding Native identity and culture. You will focus on how to relate place with examples of how Native writers, poets, artists, storytellers, and other performers convey a “sense” or “spirit” of place in their work. Cross-listed as HUM 381. **Prerequisites:** PIS 200 and ENG 111. (Fall, Spring) (3, 3T+0S)

**386 SPECIAL TOPICS IN PIS** **Prerequisites:** PIS 200 and ENG 111. (Fall, Spring) (1-6, 1-6T+0L).

**458 ADVANCED RESEARCH** You will further develop research techniques applied throughout PIS courses through a focused, individual research project. **Prerequisites:** Permission of instructor. (Spring) (3, 3T+0S).

**483 TEWA ETHNOBIOLOGY: PLANTS AND ANIMALS OF THE TEWA WORLD** You will study, through lecture and field trips, how Tewa cultures reproduce knowledge of nature, including how indigenous plants and animals are named in Tewa dialect, as well as Spanish and English, and how those introduced by Spanish and American settlers became incorporated into Tewa culture. **Prerequisites:** PIS 200 and ENG 111. (Fall, Spring) (3, 3T+0S).

**484 AGRICULTURE PRACTICES OF THE PUEBLO WORLD** You will study diverse agricultural practices used by Eastern and Western Pueblos from pre-Columbian times to the present. **Prerequisites:** PIS 200 and ENG 111(Fall, Spring) (3, 3T+0S)

**488 PUEBLO INDIAN STUDIES SENIOR SEMINAR** This is your capstone course which is designed to bring Integrated Studies students together in your final semester for an intensive review of materials covered in your full course of study. **Prerequisite:** PIS 458. (Spring) (3, 3T+0S)

**RADIATION PROTECTION (RDPR)**

**233 RADIATION BIOLOGY** Survey of radiobiology: effects of differing types of radiation on matter, different radiations and their properties; detailed modes of action of radiation on biochemical and biophysical systems with emphasis on the large macromol-
ecules of living tissue; nature of radiation damage to long-chain nucleic acid molecules; potential problems from indiscriminate use of radiation therapy and diagnostic x-rays, and nuclear facility accidents; effects of low-level radiation exposure. Cross-listed as ES 333. Prerequisite: permission of instructor. (Spring only) (3, 3T+0L)

234L INTRODUCTION TO RADIOSCIENCE AND TECHNOLOGY Production, properties, interactions, dosimetry, detection and instrumentation of radiations from radioisotopes, radiation producing equipment, and nuclear reactors; phenomenon of radioactive materials from the viewpoint of nuclear stability, decay processes, and interaction with matter; devices and instrumentation for detection of radiation sources; applications of radiation and radioisotope techniques; radiation safety. Prerequisite: permission of instructor. (spring only) (3, 3T+0L)

238L INTRODUCTION TO RADIATION PROTECTION Theory and practice of radiation protection: health physics programs for area, site, and personnel monitoring for various types of facilities including nuclear materials production and processing, nuclear reactors, accelerators, radioisotope handling, and x-ray production facilities; interaction of radiation with material; devices and instrumentation for the detection of radiation with emphasis on health physics applications; safe handling procedures and survey methods; translation of guides and regulations to working procedures. Prerequisite: RAD 234L, or permission of instructor. (Fall only) (4, 3T+1S)

242 PROBLEMS IN RADIATION PROTECTION Considers current topics of concern in radiation protection, such as natural radiations, radiations peculiar to industrial and manufacturing processes, low-level radiation exposure, and ALARA principles. Prerequisite: RAD 234L, or permission of instructor. (Fall only) (4, 4T+0L)

243 PRACTICAL RADIOLOGICAL PROGRAMS AND SAMPLING METHODS Practical methods of handling Health Physics problems in the field. Includes techniques for environmental monitoring, sampling, and contamination control. Environments covered: uranium, plutonium, and tritium facilities, and accelerators, reactors, and general hospitals. (Summer only) (4, 4T+0L)

The following course is not taught at Northern. It exists only in terms of enabling posting of incoming credit from agencies providing this training.

244 RADIOLOGICAL CONTROL TECHNICIAN QUALIFICATION The RCT qualification process focuses on types of jobs that RCTs actually perform (conduct of radiological work). Includes training procedures in planning radiological work and radiological work controls, radiological monitoring and surveys, managing radioactive waste and contamination, radioactive material identification, storage, and control, releasing items and transporting radioactive material, instrumentation and calibration, controlling radioactive liquids and airborne radioactivity, construction and restoration projects, and activities involving energetic materials; radiological standards dealing with 1) administrative controls levels and dose limits, and 2) posting requirements; handling radiation-contaminated personnel; respiratory protection program; and managing radiological records. Those Radiation Protection majors who present current RCT certification to the Registrar will receive credit for this course, which may be substituted for PHYS 121 and 121L within the Radiation Protection degree major only. (4, 3T+1L)

RADIOLOGIC TECHNOLOGY (RAD)

Note: Only those accepted to the Radiologic program may take these RAD courses, and the RAD courses are sequential. In the event you are transferring into the program, you will be placed in the program at the appropriate level. You are responsible for providing

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your own transportation to and from the clinical sites and must understand that each of you will rotate through the individual sites.

108 BASIC PATIENT CARE Provides skills in safety, body mechanics, infection control, medication administration, pharmacology, life-threatening emergencies and age-specific patient assessment. Prerequisite: passing RAD or admission to the program. (Fall only) (3, 3T+0L)

135L PRINCIPLES OF RADIOLOGIC TECHNIQUE I Lecture and Laboratory course: Provides knowledge based on the principles of x-ray production, x-ray interaction with matter, concepts of radiologic science and quality imaging techniques. Prerequisite: passing RAD or admission to the program. (Fall only) (3, 2T+1S)

136L PRINCIPLES OF RADIOLOGIC TECHNIQUE II Students will learn the basics behind conventional radiography. They will become familiar with film sensitometry, radiographic film, film holders, intensifying screens, processing, silver recovery, artifacts and the darkroom environment. Students will also begin the basics surrounding digital radiography and the transition from film to digital. Prerequisite: RAD 135L. (Spring only) (3, 2T+1S)

140 RADIOLOGIC PROCEDURES I Students will examine the skeletal and systems anatomy of the chest, abdomen, upper and lower extremities. Along with the nomenclature students will practice the positioning related to each specific area. Prerequisite: admission to the program Co-requisite: RAD 140L. (Fall only) (4, 4T+0L)

140L RADIOLOGIC PROCEDURES I LAB Laboratory where students will perform peer positioning and lab competencies of the chest, abdomen, upper and lower extremities. Prerequisite: admission to program; Co-requisite: RAD 140. (1, 0T+1L)

141 RADIOLOGIC PROCEDURES II Radiographic anatomy and positioning continue with the student studying the pelvis, proximal femur, vertebral column, skull, sinuses and facial bones. Prerequisite: RAD 140L Co-requisite: RAD 141L. (Spring only) (4, 4T+0L)

141L RADIOLOGIC PROCEDURES II LAB Laboratory where students practice peer positioning and perform lab competencies of the pelvis, proximal femur, vertebral column, skull sinuses and facial bones. Prerequisite: RAD 140L; Co-requisite: RAD 141. (1, 0T+1L)

142 RADIOLOGIC PROCEDURES III Classification of reaction signs and symptoms to contrast media, types of contrast media and studies related. Students will also learn the anatomy and positioning of the more common contrast procedures as witnessed in the clinical environment. Prerequisite: RAD 141; Co-requisite: 142L. (Summer only) (3,3T+0L)

142L RADIOLOGIC PROCEDURES III LAB Laboratory for students to perform peer positioning and lab competencies. Prerequisite: RAD 141L; Co-requisite: RAD 142. (1, 0T+1L)

145L CLINICAL EXPERIENCE I The first half of the semester students will be restricted to the laboratory environment. Students will orientate to the clinic environment by learning radiation safety and protection along with basic equipment operational skills (energized and darkroom) and basic film quality. The second half of the semester students will move from the lab to the clinical setting to apply their new knowledge and skills under the direct supervision of a clinical instructor. Prerequisite: passing RAD or admission to the program. (Fall only) (5, 0T+5L)

146L CLINICAL EXPERIENCE II The clinical experience continues and the student begins to perform master competencies under the direct supervision of the clinical
coordinator. Once master competencies are performed students may continue those procedures under indirect supervision learning and accepting increased responsibility. **Prerequisite:** RAD 145L. (Spring only) (5, 0T+5L)

149L **CLINICAL EXPERIENCE III** Students will continue to work on master competencies and begin contrast studies. **Prerequisite:** RAD 146L. (Summer only) (5, 0T+5L)

235 **RADIOLOGIC PHYSICS** Students will learn electricity and electromagnetic properties and circuitry as pertaining to radiographic equipment. Students will also study dynamic imaging (Fluoroscopy), image intensification and safety related to these procedures. Students will continue learning about digital radiography as it pertains to the hospital environment in the more detailed aspect of quality control and systems management. **Prerequisite:** RAD 136L or permission of instructor. (Fall only) (3, 3T+0L)

236 **PRINCIPLES OF RADIOLOGIC TECHNIQUES III** Students learn more advanced effects of radiation by studying radiation biology including specifications of the x-ray beam and radiation interaction with cellular matter such as DNA and RNA synthesis. Students will also learn digital technology as it applies to the clinical experience. **Prerequisite:** RAD 235 or Permission of the instructor. (Spring only) (2, 2T+0L)

240 **RADIOLOGIC PROCEDURES IV** Students will begin examining advance modalities and imaging systems. They will continue with contrast procedures related to the operating room, and other specialty areas. Modalities to include Mammography, Bone Densitometry, CT, MRI, Nuclear Medicine, Ultrasound, Angiography, Radiation Therapy and opportunities that may present as technology is offered. **Prerequisite:** RAD 141L or permission of the instructor. (Fall only) (3, 3T+0L)

245L **CLINICAL EXPERIENCE IV** Students continue performing master competencies working towards more indirect supervision while also performing intermediate rotations in trauma, O.R. and other specialty areas. **Prerequisite:** RAD 149L or permission of the instructor. (Fall only) (8, 0T+8L)

246L **CLINICAL EXPERIENCE V** In this final clinical rotation, students will complete the master competencies required for graduation, while continuing advanced rotations and studying administration and quality control. **Prerequisite:** 245L or permission of the instructor. (Spring only) (8, 0T+8L)

250 **RADIOLOGIC PATHOLOGY** This course is intended to be a supplemental writing skills course to enhance student communication abilities. Students will research radiologic pathology from studies seen and performed in the clinical setting and/or pertaining to the weekly area of study. **Prerequisite:** RAD 240 or Permission of the instructor. (Spring only) (1, 1T+0L)

251 **REGISTRY REVIEW** Complete medical radiography review to prepare students for the American Registry of Radiologic Technologist exam. Terminal competencies will also be completed at this time. **Prerequisite:** passing RAD and RAD 240 or Permission of the instructor. (Spring only) (1, 1T+L)

**READING IMPROVEMENT (RDG)**

108N **READING IMPROVEMENT** Introduces students to reading required for vocational programs and the workplace. Comprehension and critical thinking are stressed. **Prerequisite:** ENG 106N or adequate score on Course Placement evaluation. (3,3T+0S)

109N **READING AND CRITICAL THINKING** Introduces students to reading required for college success. You will work on comprehension, problem solving, note taking, summarizing, and computer assisted research. **Prerequisite:** RDG 108N, or adequate
score on Course Placement Evaluation. (3, 3T+OS)

### RENEWABLE ENERGY (RE)

103 **RENEWABLE ENERGY INTRODUCTION AND OVERVIEW** In this course you will view the past, present, and future fields of renewable energy used to: heat, light, and cool buildings; produce domestic hot water; power, heat, and cool industrial processes; provide communications. You will cover many systems: passive, active, and photovoltaic solar; wind; micro-hydro; wave; geothermal; biomass; fuel cells; human and animal power; and hydrogen. You will also cover vehicle fuels, such as ethanol, biodiesel, CNG, along with electric and hybrid systems, regenerative braking, and flywheels. Classes will be conducted both on- and off-campus. **Prerequisite:** ENG 108N and MATH 100N. (3, 3T+OS)

104 **ARCHITECTURE 2030 AND THE 2010 IMPERATIVE** Because half of the planet's greenhouse gases are produced by the construction and then the heating, cooling, and lighting of buildings, and because the state and several cities in New Mexico have committed to the Architecture 2030 movement—a worldwide effort of monumental scope to change the design of buildings to end this contribution to global warming by the year 2030. In this course you will examine the changes needed in building design and construction, including design exercises. **Prerequisites:** ENG 108N and MATH 100N. (3, 3T+OS)

105 **SUSTAINABILITY IN CONSTRUCTION INSTALLATION** Fundamentals of green and sustainable construction, safety in the construction and installation of photovoltaic (PV) solar panel mounting systems and tracker sub categories. Includes safety basics, identification of safety hazards, practices and protective equipment needed during PV system installation, and maintenance. Also includes the identification of tools needed and the recommended green sustainable energy efficient choice of materials. (Fall, Spring, Summer) (1, 1T+0S)

108 **ACTIVE SOLAR HEATING** Solar energy can supply heat for buildings, domestic hot water, and industrial processes. Active systems acquire heat with collectors; distribute the heat with fluids driven by pumps or blowers; store the heat in liquids, solids, or change-of-state materials; and control the process with electrical or electronic sensors and controls. In this course you will analyze requirements and match needs with appropriate systems. **Recommended Co-requisite:** RE 108L. (3, 3T+0S)

108L **SOLAR ENERGY LAB** Working with components of both active and passive solar heating systems: flat plate and concentrating collectors; heat transfer gasses, liquids, and solids; monitoring, control, and distribution systems; glazing, selective surfaces; and low emissivity materials. You will cover heat storage in liquids, solid, and change-of-state materials, with an emphasis on mounting components, pipe and duct connections, and safety. Classes will take place on- and off-campus. **Recommended Co-requisite:** RE 108 or ADOB 107. (2, 0T+2S)

110 **INTRO TO SOLAR HEATING PLUMBING** You will study the basics of plumbing technology found in solar heating systems, including domestic hot water (DHW), space heating, and process heat systems. You will cover basic plumbing theory and the requirements of the International Plumbing Code (IPC) and the Uniform Plumbing Code (UPC). (1, 1T+0S)

110L **INTRO TO SOLAR PLUMBING LAB** You will engage in laboratory experiences which apply to the theoretical material covered in PLB 110. You will work with the most common components, methods, tools, and pipe materials needed to connect solar heat-
ing systems from collectors to heat exchangers to storage and to point-of-use. Safety in the plumbing environment is stressed. (2, 0T+2S)

111 BEGINNING PHOTOVOLTAIC INSTALLATION Introduction to photovoltaic energy and photovoltaic (PV) system installation. Includes markets and applications, safety basics, electricity basics, energy efficient appliances, solar energy fundamentals, photovoltaic materials, module fundamentals, concentrators, system components, system sizing, electrical design, mechanical design, and performance analysis and troubleshooting. This course specifically provides preparation for the North American Board of Certified Energy Practitioners (NABCEP) Photovoltaic Installer Certification exam. (Fall, Summer, Spring) (3, 1T+2S)

112 ROOF MOUNTING FOR SOLAR INSTALLATION Techniques and skills for Photovoltaic (PV) installers to size, design, and install solar panels. An introduction to different types of mounting systems, site location of panels, orientation to house, shading at the site, weather, roof materials, soil and load bearing capacity. (Fall, Spring, Summer) (4, 2T+2S)

121 BUILDING ENERGY AUDIT AND ASSESSMENT This course covers the tools, techniques, and methods needed to conduct building energy audits and assessments. (3, 1.5T+1.5S)

127 GEOTHERMAL SYSTEMS FOR HEAT AND POWER You will discuss the full range of geothermal systems, from their origins and uses to how geothermal energy can provide industrial process heat and electrical energy. Classes will take place on- and off-campus. Prerequisite: RE 103. (4, 2T+2S)

128 BIOMASS SYSTEMS FOR HEAT, POWER, AND COGENERATION You will study biomass, a wide range of heat and energy productions systems that use plant materials. You will also study the range of equipment: from the fire pit to the highly efficient nearly zero-emitting industrial furnaces. You will be introduced to coal-fired power plants, carbon material, and carbon-neutral and carbon-sequestering concepts. You will work with small scale systems and equipment both on- and off-campus. Prerequisite: RE 103. (4, 2T+2S)

129 TRENDS AND EMERGING ENERGY SOURCES You will use this class as a forum to research, discuss, and forecast emerging trends in the field of renewable and emerging energy sources, which have been around for a long time and have now grained international attention and a high status not previously enjoyed to the extent that homeowners, garage scientists, multinational companies and national governments are focused on incremental developments and giant leaps into new technologies. Prerequisite: RE 103. (2, 2T+0s)

130 HYDROELECTRIC POWER SYSTEMS You will be introduced to micro-hydro systems for single residences, macro-hydro systems for small towns, and mega-hydro systems such as the Tennessee Valley Authority and Niagara Falls. Lab experience will cover small micro turbines and their installation and use. Classes will take place on and off campus. (2, 1T+1S)

140 ELECTRIC VEHICLE CONVERSION: VOLTS AND BOLTS Through hands-on experience, you will learn how to convert an internal combustion engine vehicle to an electric vehicle (EV) powered by an electric motor and batteries. During the course, you will address vehicle selection, modification, removal of internal combustion-related parts, current EV technologies, performance considerations, driving techniques, charging infrastructure, and safety issues. (2, 1T+1S)
144 BIO-DIESEL FUEL PRODUCTION AND ENGINE REQUIREMENTS In this course, you will cover the history and present methods of producing bio-diesel fuel from soybeans and from recycled cooking oils and other industrial byproducts. You will discuss the engine requirements for using bio-diesel fuels and demonstrate options. You will assemble and use a small-scale bio-diesel production unit. You will investigate fuels available at pumps and project future possibilities. You will spend time under the hood of a functioning bio-diesel vehicle. *Prerequisites:* ENG 108N, MATH 100N, and RE 103. Recommended *Co-requisite:* ELEC 190. Cross-listed as ATEC 144. (4, 2T+2S)

146 BIO-HYBRID FUEL PRODUCTION AND ENGINE REQUIREMENTS In this course, you will cover the methods of producing bio-diesel fuel for gas engines from corn and from recycled or redirected industrial products and byproducts. You will discuss the engine requirements for using bio-hybrid fuels and demonstrate options. You will investigate home production and fuels available at pumps and project future possibilities. You will spend time under the hood of a functioning bio-hybrid vehicle. *Prerequisites:* ENG 108N, MATH 100N, and RE 103. Recommended *Co-requisite:* ELEC 190. Cross-listed as ATEC 146. (4, 2T+2S)

160 RENEWABLE ELECTRICAL POWER SYSTEMS You will study the basics of alternative power production from solar and wind energy, comparing and contrasting the different systems and methods so that you will be prepared to address selection and adaptation of systems to specific sites and requirements. You will study the calculations needed to provide sufficient power and conductor size to match the requirement of the user to cover the production, storage, and transmission to the point-of-use. In addition to theoretical considerations, through these hands-on lab activities, you will gain experience with some of the actual system components, such as solar photovoltaic panels, trackers, wind generators, charge controllers, battery storage, inverters, and grid tie systems. *Prerequisite:* MATH 130 or permission. (3, 2T+1S)

207 WIND ENERGY SYSTEMS DESIGN AND INSTALLATION In this course you will study and discuss electrical energy production from the wind, including mechanical windmill water pumps; generator types from propeller driven units on towers to vertical axis turbines and emerging designs; the installation and maintenance of systems and safety concerns. Classes will take place on- and off-campus. *Prerequisites:* ENG 108N, MATH 100N, RE 103, and ECET 160. Recommended *Co-requisite:* ELEC 190. (4, 2T+2S)

208 PHOTOVOLTAIC SYSTEMS DESIGN AND INSTALLATION In this course, you will cover the rapidly developing technology dealing with electrical energy production from the sun. You will study the contrasts between AC versus DC, and grid-tied versus stand-alone systems. You will discuss collectors, batteries, control systems, disconnects, over-current protection and distribution to structures, with an emphasis on the installation and maintenance of systems and safety concerns. Classes will take place on- and off-campus. *Prerequisites:* ENG 108N, MATH 100N, RE 103. Recommended *Co-requisite:* ELEC 190. (4, 2T+2S)

212 ADVANCED PHOTOVOLTAIC INSTALLATION Continuation of RE111. Includes advanced photovoltaic (PV) energy and system installation training, safety basics, stand-alone PV system sizing, grid-tied system sizing, National Electric Code (NEC), compliant wire sizing, grounding of PV systems, site analysis and array mounting, and PV system commissioning, troubleshooting, maintenance and performance evaluation. This course specifically provides preparation for the North American Board of Certified Energy Practitioners (NABCEP) Photovoltaic Installer Advanced Certification exam. (Fall, Spring, Summer) (3, 1T+2S)
SCIENCE, MATH, AND ENGINEERING TECHNOLOGY / SOCIOLOGY

101 INTRODUCTION TO SCIENCE, MATH, ENGINEERING, AND TECHNICAL CAREERS This course is designed to ease the transition between two-year programs to four-year universities. Through active collaborative participation, you will learn about careers in science, mathematics, engineering, and technology; review and reinforce basic study and academic success skills; and learn additional methods for increasing learning and retention of material. You will also gain a strong working knowledge of collaborative learning environments and learn to effectively use study groups to increase academic success. Flexible learning strategies and creative problem-solving techniques will be emphasized through hands-on activities and exercises. (Spring only) (1-3, 1-3T+0S)

SOCIOLOGY (SOC)

Note: All courses have a prerequisite of ENG 109N, or adequate score on the Course Placement Evaluation.

101 INTRODUCTION TO SOCIOLOGY theorists and theories of human group behavior. (3, 3T+0S)

105 INTRODUCTION TO HUMAN SERVICES Introduces you to the structure, nature, purpose, and procedures of the private and public human services systems; i.e., health, welfare, education, employment, religion, and criminal justice. During this course, you will be required to perform two hours per week of field or practical experience in the community. (3, 3T+0S)

140 SOCIOLOGY OF ALCOHOL AND SUBSTANCE ABUSE You will survey the history, law, economics, and social problems regarding alcohol and drug use and abuse, including prevention and treatment efforts. (3, 3T+0S)

141 EFFECTS OF ALCOHOL AND DRUG ABUSE Covers the physiological and behavioral effects of alcohol and other drugs. Major categories of drugs (stimulants, depressants, hallucinogens, etc.) are studied separately. (3, 3T+0S)

211 SMALL GROUP COMMUNICATIONS STUDIES You will learn the theory and skills involved in small group processes through participation, including attention to group types, characteristics, dynamics, conflicts, norms, leadership, problem solving, and decision making. (3, 3T+0S)

213 DEVIANT BEHAVIOR Analysis of deviation from societal norms including history, theory, and research on individual and group norm violations and societal responses to the violations. (3, 3T+0S)

216 ETHNIC/INTERCULTURAL RELATIONS You will study the patterns of race, ethnicity, minority, class, and gender interactions from individual, group, and institutional perspectives with a focus on the dynamics of ethnocentrism, prejudice, and discrimination. (3, 3T+0S)

220 SOCIAL PROBLEMS You will examine various social problems, proposed solutions, and probably repercussions of those solutions; racism and prejudice, crime, sex roles, social stratification, ecology, drug abuse, and alcoholism. (3, 3T+0S)

225 MARRIAGE AND THE FAMILY You will study the history, current state and future of courtship, marriage, family, parenthood, divorce, remarriage, and sex roles. (3, 3T+0S)

250 PSYCHOSOCIAL GERONTOLOGY You will examine the aging process and the aging person from social and psychological perspectives, including inter-generational interaction, age grading, family responsibilities, social attitudes and perspectives of the
aged person; examines social institutions designed to support the aging person from the standpoint of their service to the aging persons and their families. (3, 3T+0S)

SPANISH (SPAN)

100 CONVERSATIONAL SPANISH Limited grammar, vocabulary and pronunciation skills will be developed. May be repeated for credit. (1-3, 1-3T+0S)

101 SPANISH I Introductory course for those who are not native Spanish speakers and who have had little or no previous exposure to Spanish. (3, 3T+0S)

102 SPANISH II Continuation of SPAN 101. Prerequisite: SPAN 101. (4, 4T+0S)

105 SPANISH IMMERSION I Designed to prepare teachers to pass the Four-Skills Spanish Exam. The main goal is to bring you to the level of proficiency necessary to speak, write, read, and comprehend in Spanish. Prerequisites: SPAN 101 and 102. (3, 3T+0S)

111 SPANISH AS A HERITAGE LANGUAGE I As a student whose heritage language is Spanish, your objectives in this course will be to build upon your present language base, with emphasis on the development of all four language skills: listening, speaking, reading, and writing. (3, 3T+0S)

112 SPANISH AS A HERITAGE LANGUAGE II Your objectives in this course will be to continue to build upon your present language base, with emphasis on the development of all four language skills: listening, speaking, reading, and writing. Prerequisite: SPAN 111. (3, 3T+0S)

201 INTERMEDIATE SPANISH I Vocabulary building, oral and written expression; thorough review of grammar and usage. Prerequisite: SPAN 101 and SPAN 102. (3, 3T+0S)

202 INTERMEDIATE SPANISH II A continuation of SPAN 201. Prerequisite: SPAN 201. (3, 3T+0S)

205 SPANISH IMMERSION II This course is designed to reinforce your listening, speaking, reading, and writing skills in Spanish. You will concentrate on practicing the rule for accents, grammar, orthography, reading for meaning and interpretation, conversation, and articulation in Spanish. Prerequisite: SPAN 105. (3, 3T+0S)

211 SPANISH AS A HERITAGE LANGUAGE III In this intermediate level course for heritage language students, you will review grammar and continue your development of the four language skills with an emphasis on literacy and speaking. Prerequisite: SPAN 112. (3, 3T+0S)

212 SPANISH AS A HERITAGE LANGUAGE IV In this intermediate level course for heritage language students, you will continue your development of the four language skills with emphases on reading authentic materials, practical writing needs, and communicating with native speakers. Prerequisite: SPAN 211. (3, 3T+0S)

221 CREATIVE WRITING IN SPANISH You will study Spanish and bilingual creative literary expression, including poetry, fiction, and drama. Prerequisite: SPAN 102, or permission of instructor. (3, 3T+0S)

230 SPANISH FOR HEALTH PROFESSIONS This is an introductory course for health professionals and persons interested in health care who must communicate with Spanish-speaking patients: basic concepts of grammar; develops vocabulary and communicative competencies appropriate to a health care setting. (3, 3T+0S)

290 READINGS IN HISPANIC LITERATURE You will study selected topics, genres, periods, and movements in Latin American or Peninsular literature; lectures, discus-
sions, and composition in Spanish; occasionally offered in translation. **Prerequisite**: reading and writing proficiency in Spanish. (3, 3T+0S)

300 SPECIAL TOPICS IN HISPANIC LANGUAGE AND CULTURE This course will provide you an opportunity for emphasis on oral and written expression based on a theme or language-related topics (literature, culture, civilization, translation, commercials, etc.). **Prerequisite**: Reading and writing proficiency in Spanish. (3, 3T+0S)

301 INTRODUCTION TO HISPANIC LITERATURE Through lectures, discussion, and composition in Spanish, you will study the novel, poetry, short fiction, and drama of Spain and Latin America, with emphasis on interpretation rather than literary history. **Prerequisite**: Reading and writing proficiency in Spanish. (3, 3T+0S)

307 CIVILIZATION AND CULTURE You will study the Spanish, Latin American, and southwestern U.S. Spanish experience of yesterday and today through the social, historical, political, and literary aspects that his experience encompasses. **Prerequisite**: Reading and writing proficiency in Spanish. (3, 3T+0S)

325 SPANISH FOR WRITTEN COMMUNICATION You will develop writing proficiency and critical thinking through reading and discussion of a variety of texts from Spain and Spanish-speaking America. You will be guided in your understanding of the reading selections at the textual and cultural level with an ample analysis of vocabulary words which may have multiple meanings in Spanish. You will focus on strategies in composing different pieces of writing. **Prerequisites**: SPAN 101 and 102 or SPAN 201 and 202. (3, 3T+0S)

350 INTRODUCTION TO SPANISH LINGUISTICS You will enter into the study of phonology, morphology, syntax, and dialectology of the Spanish language. **Prerequisites**: SPAN 202 or 212 or 300. (3, 3T+0S)

351 ADVANCED SPANISH GRAMMAR You will further your study of morphological and syntactic structures through analysis. **Prerequisite**: SPAN 350. (3, 3T+0S)

360 SPANISH LINGUISTICS AND PHONETICS You will apply linguistics and phonetics to the knowledge and use of Spanish and English in order to provide future teachers with the ability to help children develop in their primary language. **Prerequisites**: SPAN 101 and 102 or SPAN 201 and 202. (3,3T+0S)

370 SOUTHWEST SPANISH You will study various aspects of Southwest Spanish: linguistic structure, regional and social variation, bilingualism, maintenance and shift, English influence, etc. **Prerequisite**: SPAN 350. (3, 3T+0S)

371 NEW MEXICO SPANISH You will study all aspects of the Spanish language of New Mexico. You will conduct original research about the language. **Prerequisite**: SPAN 350. (3, 3T+0S)

375 NEW MEXICO FOLKLORE You will study all aspects of the Spanish-speaking people of New Mexico: language, customs, beliefs, music, and folk sayings. **Prerequisite**: SPAN 202 or 212 or 300. (3, 3T+0S)

400 HISTORY OF THE SPANISH LANGUAGE You will study the phonological, grammatical, and lexical development from Latin to Spanish. **Prerequisite**: SPAN 370 or 371. (3, 3T+0S)

430 SURVEY OF CHICANO LITERATURE You will study the major genres of Chicano Literature (novel, short story, essay, poetry, and drama) with emphasis on post-1960s literature. **Prerequisite**: SPAN 301. (3, 3T+0S)

440 SURVEY OF MEXICAN LITERATURE You will focus on a study of readings in
Mexican literature emphasizing Mexico's contribution to Hispanic American literature for pre-Colombian to contemporary times. You will examine diverse genres in Mexico's literature. **Prerequisite:** SPAN 301. (3, 3T+0S)

### 450 SURVEY OF SPANISH LITERATURE I
You will study Spanish Peninsular literature including the Medieval, Renaissance, and Baroque periods through the 18th Century. **Prerequisites:** SPAN 101 and 102 or SPAN 111 and 112. (3, 3T+0S)

### 451 SURVEY OF SPANISH LITERATURE II
You will study Spanish Peninsular literature of the 19th and 20th centuries. **Prerequisites:** SPAN 101 and 102 or SPAN 111 and 112. (3, 3T+0S)

### 460 SURVEY OF LATIN AMERICAN LITERATURE I
You will study Latin American literature from the pre-Columbian through the Colonial period. **Prerequisites:** SPAN 101 and 102 or SPAN 111 and 112. (3, 3T+0S)

### 461 SURVEY OF LATIN AMERICAN LITERATURE II
You will study Latin American literature of the 19th and 20th centuries. **Prerequisites:** SPAN 101 and 102 or SPAN 111 and 112. (3, 3T+0S)

### SPANISH-COLONIAL FURNITURE MAKING (SCFM)

#### 110L BASIC SPANISH COLONIAL FURNITURE LAB
Fundamentals such as hand/power tools usage and safety, carving techniques, selection of materials; introduces historical themes; repeatable; offered in evenings only. (4, 0T+4S)

#### 150 INTRODUCTION TO SPANISH COLONIAL FURNITURE
Basic concepts of woodworking; selection and preparation of stock; adhesives, abrasives, and layout of stock; tools and machines, portable and stationary; basic joinery techniques common to furniture making trade. **Co-requisite:** SCFM 150L. (1-3, 1-3T+0S)

#### 150L INTRODUCTION TO SPANISH COLONIAL FURNITURE LAB
Application of basic concepts of woodworking in shop. Selection and preparation of stock for joinery assembly and finishing. Employment of hand and power tools, adhesives, fasteners, and hardware; demonstration of basic joinery techniques. **Co-requisite:** SCFM 150. (9, 0T+9S)

#### 160L SPANISH COLONIAL FURNITURE MAKING LAB
Actual design construction and finishing of furniture particular to the average home. **Prerequisite:** SCFM 150L or SCFM 110L. (12, 0T+12S)

#### 170L ADVANCED SPANISH COLONIAL FURNITURE MAKING LAB I
Concepts of furniture construction by the actual designing, construction, and finishing of one or more pieces of furniture. **Prerequisite:** SCFM 160L. (12, 0T+12S)

#### 175L ADVANCED SPANISH COLONIAL FURNITURE MAKING LAB II
This course continues SCFM 170L and is designed for entrepreneurial students planning to develop a business in Spanish Colonial furniture making. Topics include customized contract work, pricing items for selling, developing a marketing plan and portfolio, working with galleries, and advanced tool maintenance. **Prerequisite:** SCFM 170L. (12, 3T+9S)

#### 180L SPECIAL PROJECTS
Students work on special projects with minimal assistance; repeatable; permission of instructor. (6, 0T+4S)

#### 190L ADVANCED PROJECTS
You will learn more advanced techniques of carving, hand tool, and power tool usage. You will produce one intricate project, applying the techniques learned in class. **Prerequisite:** SCFM 110L. (2, 0T+2S)
SPECIAL EDUCATION (SPED) / ALTERNATIVE LICENSURE PROGRAM

401 FOUNDATIONS OF EDUCATION This course addresses competencies for entry-level teachers from a theoretical and historical perspective of models and theories that provide the basis of special education practice. It also addresses current and historical state and national rules and regulations relating to special education. The course provides the basis for procedural safeguards relating to educational services and state and federal mandates for students with disabilities. Based on principles of brain-based learning, as well as diversity and multiculturalism, the course provides defensible choices in your apprenticeship and professional practice. Co-requisite: SPED 455. (3, 3T+0S)

455 THE SPECIAL EDUCATION PROGRAM: IEP’s AND ASSESSMENTS This course addresses the planning and implementation of effective program for exceptionalities, least restrictive environments, classroom management, human growth and development, and transition. Major components include assessment and evaluation, diagnostics, placement and the Individual Education Plan (IEP). Co-requisite: SPED 401. (4, 4T+0S)

465 READING FOR SPECIAL LEARNERS Provides you with learning experiences in the diagnosis and analysis of reading difficulties and how to adapt materials for various disabilities of the exceptional learner. You will focus on experiences in developing and implementing appropriate instructional strategies in teaching reading across the curriculum. Selection and adaptability of instructional materials are highlighted with the use of technological products for specific populations. Prerequisite: passing NMTA. (3, 3T+0S)

475 CURRICULUM METHODS AND MATERIALS FOR SPECIAL EDUCATION You will focus on teacher knowledge and application skills in teaching curricula aligned with state content standards and benchmarks. You will explore areas of individualized modifications and/or accommodations when the general education curriculum is not appropriate. You will address instructional strategies in meeting the needs of the special learner with transition as a major component, with emphasis on the application of technology to support teaching and learning. You will address and integrate the Individual Education Plan (IEP) throughout the learning process. Prerequisite: SPED 401 and passing NMTA. (Spring) (3, 3T+0S).

485/515 TEACHING READING IN SPECIAL EDUCATION Provides you with a conceptual framework for teachers in the development of competencies in the diagnosis and teaching of reading for the exceptional learner. This course will also provide experiences to understand and incorporate evidence-based research into the teaching of reading. You will acquire an understanding of reading assessments, including informal reading inventories, running records, miscue analysis and standardized reading assessments. You will also address skills in adaptive instructional strategies with an integrative approach across the curriculum. Prerequisite: passing NMTA. (3, 3T+0S)

497 SUPERVISED FIELD EXPERIENCE Provides you with experience in portfolio preparation and interaction with students in exploring and discussing professional ethics and issues in Special Education. You will prepare and complete a portfolio representing experiences in the 20-credit-hour program. Prerequisite: passing NMTA. (3, 3T+0S)

497L SUPERVISED FIELD EXPERIENCE LAB Provides you with 120 hours of supervised field experience in an educational setting under the supervision of a certified Special Education teacher and resource specialists. Your experiences will encompass the special education program addressing Special Education level competencies in parent/professional communication skills, planning and implementing effective programs, least restrictive environment, individual educational planning, assessment and evaluation,
curriculum development and implementation, technology, classroom management, and accommodating strategies to meet the diversity of the exceptional learner. Requires 96 or more hours of practicum in the field, which includes 6 hours of seminar. Interaction with students on a one-to-one basis and in small group settings is provided. Prerequisite: passing NMTA. (3, 0T+3S)

### SPEECH (SPCH)

**130 PUBLIC SPEAKING** Principles of rhetorical theory as applied in public speaking situations: audience analysis, content, organization, style, verbal and non-verbal expression, and critical listening. You will deliver various speeches following selected rhetorical modes. Prerequisite: ENG 109N. (3, 3T+0S)

### THEATRE (THE)

All studio courses may be repeated without penalty; however, no course may be counted more than once toward graduation requirements.

**120 INTRODUCTION TO THEATRE I** This course provides an overview of the Theatre Arts from its prehistoric origins through Western and non-Western cultures to the present, and an introduction to the practical applications of theatre. You will explore the physical realities of creating theatre as a living art form, including lighting, set design, costuming, and stage make-up. (3, 3T+0S)

**122 ACTING I** You will explore acting styles and techniques of major historical periods through individual scene study, using a variety of acting exercises to develop a personal acting theory, style, and method. (3, 1T+2S)

**124 ACTING FOR THE CAMERA** You will be exposed to specialized acting techniques for the camera in film, TV, and commercials. You will study terminology, lighting, auditioning, cold-reading, scene study, and working with a partner, as well as preparing a resume with an 8”x10” headshot. (3, 2T+1S)

**126 SPEECH AND MOVEMENT FOR THEATRE** This course will help you develop the articulation, clarity and projection of speech for theatre; focuses on movement on stage for dramatic and theatrical performances. (2, 1T+1S)

**130 HISTORY OF THEATRE** This course provides you with an in-depth study of a theatre topic and its place in theatre history through the reading of plays. May be repeated, as topics vary from term to term. Prerequisite: ENG 109N. (3, 3T+0S)

**132 STAGECRAFT** You will learn stage carpentry, foam carving, prop construction, safety in the theatre, paint techniques for the stage, rigging, and hardware. (3, 2T+1S)

**134 INTRODUCTION TO COSTUMING** Introduces you to basic design principles, color theory, sewing machine and hand-stitching, fabric/light concepts, and play analysis leading to costuming a stage production. (2, 1T+1S)

**150 STAGE PRODUCTION** A practicum in producing a theatrical performance. You may choose to be involved in any aspect of technical theatre, including lights, sounds, crew, costumes, or you may choose to perform in the production. Laboratory covers the rehearsal period of the show. (2, 0T=2S)

**196 INTRODUCTION TO LIGHT AND SOUND FOR THE THEATRE** You will be introduced to performance light and sound, including the theory of light and color for stage lighting and to sound support for live performances. You will have hands-on experience in mounting a show from conception to a fully-realized production. (3, 2T+1S)
218  **ACTING II**  You will be involved in an intensive study of the techniques involved in building and developing a characterization, with emphasis on sub-textual work and play analysis.  *Prerequisite*: THE 120.  (3, 1T+2S)

220  **INTRODUCTION TO THEATRE II**  Continuation of background and working knowledge of theatre, acting, dramatic techniques, and production costuming.  *Prerequisite*: THE 120.  (3, 3T+0S)

224  **PLAYWRITING**  You will study character development, scene structure and narrative theory in the process of developing a stage and/or screen script; includes reading of published scripts.  *Prerequisite*: ENG 109N.  (3, 2T+1S)

225  **CREATIVE AND THERAPEUTIC DRAMA TECHNIQUES FOR THE CLASSROOM K-12**  Designed for Education and Human Services majors, this course will present techniques of creative dramatics for use in the classroom and/or counseling situations.  You will be exposed to the study of psychodrama and the therapeutic uses of role-play, as well as being exposed to theatre games, exercises and improvisation, as adapted to various curricula for K-12 (science, social studies, math, language arts, etc.). You will participate in creative drama activities and have the opportunity to lead a group using the learned techniques in that group's curriculum field [Cross-listed as PSY 225].  *Prerequisite*: ENG 109N.  (3, 3T+0S)

226  **DIRECTING AND PLAY PRODUCTION**  You will learn the fundamental techniques and theories of stage direction.  *Prerequisite*: THE 120 and 122  (2, 1T+1S)

228  **PERFORMANCE POETRY**  You will study reading, writing, and performing poetry, with an emphasis on the personal and political aspects of poetry from the 1960s to the present, including the Poetry Slam movement.  (3, 2T+1S)

238  **TEATRO CHICANO**  You will read and discuss contemporary Chicana/o playwrights, with encouragement to explore self-identity through cultural identity. You will develop a definition of Chicanismo and Chicano aesthetic, and write personal pieces expressing cultural heritage and identity.  *Prerequisite*: ENG 109N.  (3, 3T+0S)

250  **STAGE MANAGEMENT**  You will focus on professional stage manager duties, including responsibilities for actors, calling cues during production, all technical production, and compiling the Production Book.  *Prerequisite*: THE 120.  (2, 1T+1S)

282  **ACTING III: SCENE STUDY**  You will continue your study of acting developed in THE 122 and 218 through an in-depth study of characters in two- or three-character scenes. The class will culminate in a performance.  *Prerequisites*: THE 218.  (3, 2T+1S)

290  **DESIGN FOR THE THEATRE**  You will explore drafting, model building, rendering, play analysis, styles, ornament, and CAD. Your goal will be to develop a real design onstage through the Stage Production lab and through portfolio development.  *Prerequisite*: THE 150.  (3, 2T+1S)

296  **ADVANCED LIGHT AND SOUND FOR THE THEATRE**  Although you will have some practical hands-on crew work in this class, you will primarily focus on design, theory, physics, and concepts of the art of performance lighting and sound.  *Prerequisite*: THE 196.  (3, 2T+1S)

**VITICULTURE AND ENOLOGY (VIN)**

**VIN 105  MOLECULAR PRINCIPLES OF GRAPE AND WINE**  This courses emphasis on chemical fundamentals, organic, biochemistry, and applications with a particular focus on the grape and wine industry. Recommended for students needing one semester of general
chemistry as a prerequisite for VIN 268 Wine and Must Analyses. Students not meeting the prerequisite must have permission by department to enroll. **Prerequisites:** None. (4T)

**VIN 111 INTRODUCTION TO VITICULTURE AND VINEYARD ESTABLISHMENT.** This course is designed to introduce students to viticulture in general and to current practices for establishing a commercial vineyard. Topics covered include varietal selection, site preparation, equipment, site selection, first season establishment, vine growth development and training, trellis systems, weed control, vine disease control, and pruning for training purposes. Students are required to partner with an approved vineyard to participate in the required field experience portion of the course. **Prerequisites:** None. (3T)

**VIN 112 BOTANICAL VITICULTURE** This course is a survey of the plant kingdom, including plant cells and tissues, the ecology, morphology, physiology and life cycles of representative plants of each division. In addition, this course will focus communication on grapevine biology, vine structures and their functions. **Prerequisite:** None. (3T, 1L)

**VIN 113 WINTER VITICULTURE TECHNOLOGY** This course is designed to provide students initiated in the field of viticulture practical experience in winter vineyard operations. Students are required to partner with an approved vineyard to participate in the required field experience portion of the course which will serve as work experience for those seeking employment in commercial viticulture. **Prerequisite:** Introduction to Viticulture and Vineyard Establishment-VIN 111 or permission. (2T)

**VIN 114 SPRING VITICULTURE TECHNOLOGY** This course is designed to provide students initiated in the field of viticulture practical experience in spring vineyard operations. Students are required to partner with an approved vineyard to participate in the required field experience portion of the course which will serve as work experience for those seeking employment in commercial viticulture. **Prerequisite:** Introduction to Viticulture and Vineyard Establishment-VIN 111 or permission (2T)

**VIN 115 SUMMER/FALL VITICULTURE TECHNOLOGY** This course is designed to provide students initiated in the field of viticulture practical experience in summer/fall vineyard operations. Students are required to partner with an approved vineyard to participate in the required field experience portion of the course which will serve as work experience for those seeking employment in commercial viticulture. **Prerequisite:** Introduction to Viticulture and Vineyard Establishment–VIN 111 or consent of the instructor or Winter/Spring Viticulture Technology-VIN 113 (recommended). (2T)

**VIN 146 INTRODUCTION TO ENOLOGY** This is an introductory course in the basic science and technology of winemaking. It is intended for the entrepreneur exploring business opportunities in the grape wine industry, and/or the prospective small winery employee interested in career development. The home winemaker that has never undergone any formal training on the subject may also benefit from this basic course. Students will make wine at home from a kit, track fermentation, make various chemical measurements and provide one bottle of finished wine to the instructor for evaluation at the conclusion of the course. Students must be 21. **Prerequisite:** None. (3T)

**VIN 147 FRUIT WINE PRODUCTION** This course will cover the history of fruit wine making, starting a fruit winery, production processes, quality control, faults and flaws, stability tests, marketing and sales, and legal regulations. Students will get an understanding of the special idiosyncrasies of the various fruits available to make commercial grade fruit wine. **Prerequisite:** VIN 146—Introduction to Enology. (2T).

**VIN 148 WINERY SANITATION** This is a course in the basic science and technology of winery sanitation. The course serves as an introduction to wine microbiology and covers all methods used for winery sanitation including premises, tanks, pumps, filters, oak
barrels and sampling equipment, including but not limited to chemical agents, reagents, and thermal treatments leading to sterile bottling. Environmental issues and compliance are also addressed. **Prerequisite:** VIN 146–Introduction to Enology. (3T)

**VIN 160 WINERY EQUIPMENT OPERATION** This course covers process technologies and process systems that are used in modern commercial wineries. The course will include lectures, demonstrations and two day workshop. Overview of winemaking systems including winemaking operations and equipment, barrel aging and barrel management, membrane separation processes, specialized contacting systems, cleaning and sanitation systems, process control systems. refrigeration systems, air conditioning and humidity systems, electrical systems, waste water systems, solid waste handling, and work place safety. **Prerequisite:** VIN 146–Introduction to Enology (recommended) or permission.

**VIN 190 VITICULTURE SAFETY** An introduction to safety and procedures specific to viticulture (grape growing). This course will include general history of agricultural safety and health issues, ergonomics, OSHA safety rules and safety issues and concerns. **Prerequisite:** None. (1T)

**VIN 200 INTRODUCTION TO WINERY LAW** This course will introduce students to the general concepts and issues relating to the creation and operation of a winery. The course will explain general legal concepts, outline business formation and operation concepts, discuss governmental agencies and regulation and describe legal issues and areas specifically related to the operation of a winery. **Prerequisite:** None. (3T)

**VIN 210 INTRODUCTION TO WINE MICROORGANISMS** This course is an introduction to the variety of microorganisms frequently encountered in the wine making process but beneficial and harmful. Topics include identification, physiology, morphology and biochemistry of various wine microorganisms. **Prerequisite:** None. (3T)

**VIN 211 INTEGRATED PEST MANAGEMENT** Effective grape production depends on the grower developing a system of grape management that is appropriate for each vineyard. Decisions need to be made for how to manage all of the normal cultural practices such as planting, fertility, harvesting, and pruning as well as managing the insect, disease, and weed problems that occur either regularly or sporadically. The information in this course will address management issues related to common, expected pest problems as well as the occasional appearance of minor pest problems. **Prerequisite:** None. (2T)

**VIN 213 REGIONAL VINEYARD MANAGEMENT** This course is a study of commercial grape growing in the Midwest of the United States. Topics include cultivars, vine nutrition, irrigation, canopy management, pests, maturity sampling and harvest, balanced pruning/cropping and cold injury. **Prerequisite:** Vineyard Establishment and Maintenance-VIN 111 and Winter/Spring Viticulture Technology–VIN 113 or permission. (2T)

**VIN 246 INTERMEDIATE ENOLOGY** This course in the science and technology of winemaking is intended for the experienced intermediate winemaker, the winery employee interested in career development, or the advanced home winemaker that is seeking new challenges. Basic organic chemistry, microbiology, and some mathematics familiarity are recommended. **Prerequisite:** Introduction to Enology–VIN 146 or permission. (3T)

**VIN 257 FALL WINE PRODUCTION INTERNSHIP** This course is designed for the individual anticipating a career in the wine industry. This course (internship) is designed to provide a student who has completed major course sequences with an intense level of practical and realistic winery operation experiences, sufficient to equip him/her with sufficient skills and work experience for an entry-level position in the wine industry. Students involved in this program will participate in a full time Crush Season internship at a supporting winery, and are expected to use the time and opportunities to further their

**VIN 259 CELLAR OPERATIONS TECHNOLOGY** This course is designed to provide students initiated in the field of enology with actual and practical exposure to the technology of wine making as is performed during the passive vineyard periods associated with winter. The student is expected to improve his understanding of the methods and science involved by on-site participation in each of the various activities associated with finished wine production. The course is designed to serve as actual practical exposure and may qualify as experience for those seeking employment in commercial enology. **Prerequisite:** Wine Production Internship–VIN 257 or permission. (2T)

**VIN 266 SENSORY EVALUATION** This is a course intended for those individuals who need to develop an understanding of the principles of sensory evaluation used in commercial wine making. It will also be of benefit to the wine enthusiast who is interested in reaching advanced levels of appreciation as well as to the producer, the wine merchant, and ultimately the enologist, who by the nature of their profession need to discern flavors and establish tasting benchmarks. Students will utilize sensory kits and workshops to further their sensory evaluation skills and techniques. Students must be 21. **Prerequisite:** Wine Production Enology–VIN 146 or permission. (3T)

**VIN 268 WINE AND MUST ANALYSIS** Principles of grape juice and wine analysis and the reasons for use of each analysis. Analyses of a practical and useful nature are chosen for the laboratory exercises demonstrating various chemical, physical and biochemical methods. Students will participate in workshops and hands-on experiences at participating wineries. **Prerequisite:** Wine Production Enology–VIN 146 and CHM 105 or permission. (3T)

**VIN 270 MARKETING FOR THE SMALL WINERY** This course explores the marketing strategies for small wineries. During the course, students will build a basic understanding of different aspects of marketing such as label design and packaging, tasting room promotion, and general marketing principles. It will also introduce various marketing channels including, social media, e-mail, word-of-mouth, and winery web sites. **Prerequisite:** None. (2T)

**VIN 272 WINERY TASTING ROOM MANAGEMENT** This course will explore all aspects of managing a winery tasting room. It will cover topics such as tasting room “look and feel,” merchandizing, customer service, customer relationships, sales opportunities, sensory evaluation, staff training and the importance of leadership. The focus will be on customer service and customer loyalty. **Prerequisite:** None. (2T)

**VIN 274 WINES OF THE WORLD** This is a course intended for those individuals who wish to further their understanding of wine styles and builds on the knowledge developed in VIN 266, Sensory Evaluation. It is appropriate for commercial winemakers who wish to understand how the wines that they produce compare and contrast with the most popular and important wine styles around the globe. It will also be of benefit to the wine enthusiast who is interested in reaching advanced levels of appreciation and an understanding of global benchmarks. Students will practice sensory analysis at home to further their sensory evaluation skills and techniques. **Prerequisite:** Sensory Evaluation–VIN 266 or permission. (3T)

**VIN 290 WINERY SAFETY** An introduction to safety and procedures specific to enology (wine making.) This course will include general history of food and beverage safety and health issues, ergonomics, OSHA safety rules and safety issues and concerns specific
VIN 293 SOILS FOR VITICULTURE The course will explore soil properties and behavior and their influence on wines. The course focuses not only on growth and production, but on the long-term effects of viticulture on soil quality and the wider environment. Prerequisite: None. (3T)

WELDING (WELD)

110 INTRODUCTION TO WELDING Shop and personal safety, different welding processes, different metals, and basis of metal identification and analysis. (3, 3T+0S)

111L FUNDAMENTALS OF OXYACETYLENE WELDING Lighting, adjusting, and turning off oxyacetylene cutting outfit, safety precautions, tools and equipment; ninety-degree cuts, level cuts, and cutting holes in mild steel. (3, 0T+3S)

112L FUNDAMENTALS OF ARC WELDING Three types of arc welders, straight and reverse polarity, selection of correct electrode, starting, stopping, and restarting of bead; construction of pad in flat position and of square groove butt weld. (3, 0T+3S)

120L OXYACETYLENE WELDING Cutting, fusion, and braze; selection of welding tips, and demonstration of ability to carry a puddle; distinction between braze and fusion, and application of flux. (3, 0T+3S)

121L ARC WELDING Different types of arc welders, polarity, beads, and E-6010 and E-7018 electrodes; construction of test plates in all positions. (3, 0T+3S)

122L INERT GAS WELDING GTAW process; identification of applications, advantages of the process, and identification of major parts of equipment; fuller metals and metallurgical properties of base metals; setting up equipment and production of welds on the popular metals in the flat through vertical positions on the common joints. (3, 0T+3S)

130 HANDS-ON WELDING The principles and practice of welding basics, usually offered periodically on a short-term basis. (2, 1T+1S)

150 APPLIED METALLURGY Application of metallurgical concepts, procedures, and testing. Includes materials, alloy classification systems, industrial and manufacturing concepts, properties and testing, and industrial and manufacturing processes and applications. (Fall, Spring, Summer) (4, 2T+2S)

210 WELDING BLUEPRINT READING Identification of information contained in a blueprint: the view, size, and dimensions, drawing or pictorial view and three-view sketches of a specified rectangular block. (3, 3T+0S)

211L PRACTICAL ARC LAB Practical use of ARC equipment; projects assigned according to the skill of the welder. (3, 0T+3S)

212L PRACTICAL OXYACETYLENE LAB Practical use of oxyacetylene equipment; projects assigned according to the skill of the welder. (3, 0T+3S)

213L PRACTICAL INERT GAS LAB Practical use of inert gas equipment; projects assigned according to the skill of the welder. (3, 0T+3S)

295 WELDER QUALIFICATION CAPSTONE Students will demonstrate their mastery of welding through a series of qualification technique sheets and acceptance by welding certification testing lab (Albuquerque, NM). All Technique sheets meet or exceed minimal requirements for positions as requested by LANL. Prerequisites: WELD 120L, 121L, 122L, 211L, 212L, 213L (Fall, Spring, Summer) (1-3, 0T+1-3S)

299 COOPERATIVE EDUCATION FIELD EXPERIENCE Employment in an approved
work-related experience following individualized learning objectives. Forty-eight (48) work hours are required to earn one semester hour of credit. Students may earn up to five credit hours. Students are evaluated jointly by program faculty and employer on a CR/NC basis. **Prerequisite:** permission of instructor. (2-5)

**WILDLAND FIRE SCIENCE (WFS)**

### WFS 130 BASIC WILDLAND FIREFIGHTER TRAINING (Includes S-190, L-180 and I-100)
Provides entry level firefighting skills such as safety orientation, firefighter preparedness, tools and equipment, firing devices, use of water suppression, securing the control line, use of maps, scouting, hazardous materials, and standards for survival. Primary environmental factors that start and affect the spread of wildfires, and the recognition of potentially hazardous situations are introduced. Forty-eight (48) work hours are required to earn one semester hour of credit. Students may earn up to five credit hours. Students are evaluated jointly by program faculty and employer on a CR/NC basis. **Prerequisite:** permission of instructor. (2-5)

### WFS 131 ADVANCED FIREFIGHTER TRAINING (S-131)
A classroom course that is interactive and contains several exercises designed to meet the training needs of the FFT1. With completion of S-131 the student will be able to demonstrate the ability to use fire line reference tools to facilitate the communication and decision making processes, describe how to incorporate and maintain open lines of communication with appropriate personnel, demonstrate the ability to apply the SOP's found in the incident Response Guide and demonstrate the ability to apply information found in the Fire Line Handbook. **Prerequisite:** is WFS 130 with a grade of C or better. It is a one day, .5 credit-hour course with 8 hours classroom contact. (.5, .5T+.5S)

### WFS 134 LOOKOUTS, COMMUNICATIONS, ESCAPE ROUTES, SAFETY ZONES
WFs 134 is an instructor-led course that introduces the student to an important Standard Operating Procedure (SOP) in the wildland fire environment. LECS is the key to safe procedures for firefighters. **Prerequisite:** is WFS 130 with a grade of C or better. The course is a 1 credit-hour course with 16 classroom contact hours scheduled over 2 days. (1, 1T+0S)

### WFS 200 INITIAL ATTACK INCIDENT COMMANDER
This course is designed to meet the training needs of the ICT4. It is presented in a discussion/exercise format. The six instructional units cover: Foundation Skills; Intelligence Gathering and Documentation; Size Up the Incident; Develop a Plan of Action; Post-fire Activities; Evaluating Incident Objectives and Manage the Incident. This course is designed for 16 classroom contact hours. **Prerequisite:** WFS 130. (1, 1T+0S)

### WFS 211 PORTABLE PUMPS & WATER USE
An instructor-led course designed to give students practical knowledge and application skills in water use/hydraulics. Upon successful completion of WFS 211 the student will select equipment required to maintain flow of water as required by the incident; install pump, hose lays and holding tanks to provide water for use during all phases of the incident; and perform required field maintenance on a portable pump. **Prerequisites** are WFS 130 & 131 with grades of C or better. WFS 211 is a 24 hour classroom course with 8 field hours scheduled over four days and is a 2 credit-hour course. (2, 2T+0S)

### WFS 212 WILDLAND FIRE CHAIN SAWS
An instructor led course designed to give students practical knowledge and application skills of chain saw use. Upon successful completion of WFS 281 the student will list, define and apply chain saw safety standards as required by OSHA and NWCG agency manuals, handbooks, and directives; describe maintenance and function of PPE; identify basic chain saw parts, trouble shooting and safety features. Students will have a demonstration of chain use in felling, limbing, and bucking. **Prerequisite:** for the course is WFS 130 & 131 with grades of C or better. Completion of course
will not qualify the student as a certified faller. WFS 281 combines 40 classroom hours and 8 field hours scheduled over 6 days as a 3 credit-hour course. (3, 3T+0S)

215 FIRE OPERATIONS IN THE WILDLAND/URBAN INTERFACE This course is required training for single resource bosses, who are seeking certification as incident commander TYPE 4, strike team leader or company officer confronting wildfire that is presenting a threat to life and property. The course is designed to be interactive; it contains exercises, which facilitate student learning and class discussion. There are 8 units, which make up the course: interface awareness; size-up; initial strategy and action plan; structure triage; structure protection tactics; action plan assessment and update; follow-up and public relations; and firefighter safety in the interface. Prerequisite is WFS 230 with a grade of C or better. The course is designed for 40 classroom hours and 8 field hours and is a 3 credit-hour course scheduled over 6 days. (3, 2.5T+.55)

230 CREW BOSS This course introduces students to crew boss responsibilities prior to and during mobilization on the incident and during demobilization. It is a skill course to produce proficiency in the performance of all duties associated with the single-resource boss. Hazards and risks on various incidents will be identified and mitigation described. Tactics and strategy will be described that are appropriate to various wildland fire situations and how they are implemented through the chain of command. Several exercises are introduced to stimulate student involvement. Prerequisite is successful completion WFS 270, 131, 290 and L-280 with a C or better grade in each course. The course is designed for 32 hours classroom contact plus 4 hours pre-work and is a 2 credit-hour course scheduled over 4 days. (2, 2T + 0S)

231 ENGINE BOSS This is a skill course designed to produce student proficiency in the performance of the duties associated with engine boss, single resource (ENG). Upon completion of this course students will be able to perform the tasks of an engine boss in meeting the tactical decisions required to safely manage his or her engine and personnel on an incident. Topics include: engine and crew capabilities and limitations, information sources, fire size up considerations, tactics and wildland/urban interface. Prerequisite is successful completion of S-230 (WFS 230) with a C or better grade. The course is designed for 16 classroom contact hours and is a 1 hour course scheduled over 2 days. (1,1T +0S)

232 DOZER BOSS (S232) This is a skill course designed to meet the training needs of a Dozer Boss on an incident as outlined in the Position Task Book and PMS 310-1. Primary considerations are tactical use and safety precautions required to establish and maintain an effective dozer operation. Upon completion of this course the student will ensure that the dozer has been properly inspected and signed up, ensure the operator is qualified and properly signed up, determine the capabilities and limitations of the dozer and operator to perform an assignment and identify the actions required of the dozer boss to safely and effectively complete an assignment. Prerequisite is Fire Fighter Type 1. The course has 16 classroom contact hours and 4 field hours for 1.25 credit hours scheduled over 2 1/2 days. (1.25, 1.25T+0S)

234 IGNITION OPERATIONS An entry level course that introduces and describes to students the role and responsibilities of single resource bosses, firing and prescribed fire ignition specialists their duties connected with firing operations. The course also identifies resources needed to successfully prepare an ignition operation for a wildland fire or prescribed fire. Students will develop an ignition plan demonstrating the knowledge of fire behavior, fire techniques, holding and hazards and given a scenario implement an ignition operation with emphasis on safety, coordination, communications and evaluation. Pre-course work is required that will take approximately 2-4 hours. Prerequisite
is WFS 290 with a C or better grade. The course is designed for 32 classroom contact hours scheduled over 4 days and is a 2 credit-hour course. (2, 2T + 0S)

260  INCIDENT BUSINESS MANAGEMENT  This course is targeted for entry-level single resource positions in operations, logistics and finance positions. The course meets the general training needs of all positions for which an understanding of inter-agency incident business management is required. Topics covered include; employee responsibilities and conduct, personnel timekeeping, pay and commissary, correct reporting procedures for traumatic injury/occupational disease, procurement and equipment time recording, property management, interagency agreements, and claims/accident investigation. This course neither sets policy, nor addresses every potential situation that may occur in all locations. **Prerequisite:** WFS 130 with a grade of C or better. The course is designed for 16 classroom contact hours and is a 1 credit-hour course scheduled over 2 days. (1, 1T + 0S)

261  APPLIED INTERAGENCY INCIDENT BUSINESS MANAGEMENT  This course is designed to provide students with prerequisite skill/knowledge to perform the tasks of entry-level finance positions. **Prerequisite** is WFS 260 with a grade of C or better. The course is designed for 24 hours classroom contact hours scheduled over three days and is a 1.5 credit-hour course. (1.5, 1.5T + 0S)

270  BASIC AIR OPERATION  This course introduces the student to uses of aircraft in fire suppression activities and provides trainees instruction on how to conduct themselves in and around aircraft. The course also provides instruction on management policy, regulations and procedures that govern agency aviation operations in fire suppression. Also covered is aircraft types, capabilities, safety, tactical and logistical uses of aircraft and requirements for helicopter take-off and landing areas. **Prerequisite** is WFS 130 with a grade of C or better. The course is designed for 6 hours’ classroom contact scheduled over 2 days and includes pre-course work. It is a 1 credit-hour course. (1, 1T + 0S)

271  HELICOPTER CREWMEMBER  This course will provide basic skills and knowledge required for individuals working with helicopters during fire suppression activities. The course is a combined classroom and field course to provide trainee proficiency in all areas of the tactical and logistical use of helicopters. There are 3 different instructional topics involved in the course; helicopter capabilities and limitations, personal protective equipment, and will, skill and luck. Upon completion of the course the student will be able to demonstrate proficiency in all areas of helicopter use to safely achieve efficiency and standardization. **Prerequisite** is WFS 270 with a grade of C or better. The course is designed for 40 hours classroom contact with an 8 hour field day covering application of features covered in the classroom. It is a 3 credit hour course scheduled over 6 days. (3, 3T +0S)

280  FOLLOWERSHIP TO LEADERSHIP  (L-280)  WFS 280 (L-280) is an introductory leadership course. It is designed as a self-assessment opportunity for individuals preparing to step into a leadership role. Subject areas include leadership values and principles, transition challenges for new leaders, situational leadership team building and ethical decision-making. **Prerequisite** is WFS 130 with a grade of C or better. L-280 involves 12 classroom hours, 4 hours of pre-course work and 8 field hours. It is a 1.5 credit hours course scheduled over two days. (1.5, 1.5T + 0S)

290  FUNDAMENTALS OF FIRE BEHAVIOR  This course will provide basic skills designed to instruct prospective fire line supervisors in wildland fire behavior for effective and safe fire management operations. It is the second course in a series that collectively serve to develop fire behavior prediction knowledge and skills. The course provides more detailed information on the treatment of fuels, weather, and topography
and a stronger basis for analyzing variables and their interactive effects on fire behavior. The course consists of twelve formal classroom units. In addition the course has a pre-course package with a pre-course test. Prerequisite is WFS130 with a C or better grade. The course is designed for 32 hours classroom contact and is a 2 credit hour course scheduled over 4 days. (2, 2T + 0S)

SPECIAL COURSES

TOPICS (TP)

147, 247 Lower-division courses in selected subject areas. When available they will be shown in the published Schedule of Classes with a specific descriptive title. No more than 6 credit hours of “TOPICS” courses may be applied toward completion of an associate degree or certificate. (1-6)

TOPICS (TP)

399, 499 Upper division courses in selected subject areas. When available they will be shown in the published Schedule of Classes with a specific descriptive title. No more than 6 credit hours of “TOPICS” courses may be applied toward completion of a baccalaureate degree. (1-6)

INDEPENDENT STUDY (IS)

248, 398, 498 Reserved for the outstanding student whose educational needs cannot be met within the traditional curriculum offerings. Individual work experience, research projects, or practicum may be used to earn credit through Independent Study. No more than 6 credit hours of Independent Study courses may be applied towards completion of an associate degree or certificate, or toward a baccalaureate degree (1-6)

Syllabi for all Special Courses must be on file at the Registrar’s Office prior to the first day of the semester in which the Topics or Independent Study course will be offered.
Administration, Faculty, and Staff

BOARD OF REGENTS
Michael P. Branch .................. President
Feliberto Martinez .................. Vice President
Cecille Martinez-Wechsler .......... Secretary
Alfred Herrera ..................... Treasurer
Rosario (Chayo) Garcia .......... Member

CHIEF EXECUTIVE OFFICER
Nancy “Rusty” Barceló, PhD .... President/Professor

CHIEF ACADEMIC OFFICER
Anthony Sena, PhD ................. Provost & Vice President for Academic Affairs/Professor

ADMINISTRATIVE OFFICERS
Domingo Sanchez, BA .............. Vice President for Finance and Administration
Ricky Serna, MA ................... Vice President for Institutional Advancement

DEANS & CHAIRPERSONS
Lori Baca, MBA ..................... Chair, Business Administration
Lori Frankin, MA ................... Chair, Humanities, Social Sciences, and Language and Letters
Ivan Hurtado-Lopez, PhD ....... Chair, Engineering
Frank Orona, BA ................... Dean of Student Services
Ulises M. Ricoy, PhD ............. Chair, Biology, Chemistry, and Environmental Science
Anthony Sena, PhD .............. Dean, College of Arts and Sciences
Gilbert Sena, BA ................... Chair, Career Technical Education
David Torres, PhD ................. Chair, Mathematics and Physical Sciences
Ellen Trabka, MSN ................. Dean, College of Nursing and Health Sciences
Myrna Villanueva, PhD .......... Interim Dean, College of Education
Donna Winchell, MEd .......... Chair, Fine Arts

ACADEMIC PROGRAM DIRECTORS
David Barton, PhD .................. Director, Humanities and Social Sciences
Camilla Bustamante, PhD ........ Director, Environmental Science
Michael Frain, MA ................. Director, Radiologic Technology
Matthew Leder, PhD .............. Director, Music Program
Ellen Trabka, MSN ................. Director, RN to BSN Nursing Program
Theresa Lopez, MSN ............. Director, Associate Degree in Nursing Program
Matthew Martinez, PhD .......... Director, Northern Pueblos Institute
ADMINISTRATIVE DIRECTORS / COORDINATORS / MANAGERS

Julianna Barbee, MA .......... Director, Small Business Development Center
Deborah Begel, MA ........... Developmental Writing Specialist
                           Director, Writing Center
James Biggs, PhD ............ Coordinator, El Rito Biological Research Station
Barbara Bustos, MBA ........ Director, Educational Opportunity Center (EOC)
Ida Carrillo, AA ............. Assistant Director, SBDC
Tony Gallegos, BA .......... Assistant Director, Recruitment/Career Services
Ryan Cordova, BA ............ Athletics Director, Head Coach
Kenneth Dvorak, PhD ....... Director, Distance Education
Martha A. Estrada, MA ...... Director, College Assistance Migrants Program
Jessica L. Jones, MSI ....... Library Director
Jot Kaur Khalsa, MSI ......... Coordinator, Massage Therapy Program
Jessica Klagmann, MFA ...... Director, Adult Basic Education
Sandy Krolick, BA ........... Creative Director, Communications & Marketing
David Lindblom, BA ......... Creative Director, Canal Seis
Tessie Lopez Trujillo, AAS .. Payroll Manager
Connie Manzanares, AAS .... Assistant Director, Financial Aid
Joe Martinez, BA ............ Administrative Software Manager
Kim Milee, BA ............... Director, Institutional Advisement
Carla Montoya, MBA ......... Grants Manager
Kimberly Othole, BBA ....... Coordinator, American Indian Affairs
Jacob Pacheco, BA .......... Director, Financial Aid
Bernie Padilla ............... Director, Human Resources
Andy Romero ................. Physical Plant Supervisor, Española
Harrison Rommel, PhD ....... Manager, Northern Rio Grande STEM Collaborative
Carmella Sanchez, MS ....... Director, Institutional Research
Richard Sedillo .............. Student Activity Coordinator
Kathleen F. Sena, BA ......... Registrar
Sari Jobe, BS .................. Director, High School Equivalency Program
Brian Salter, AAS .......... Director, IT
Peter Snyder, BS ............. Coordinator, Distance Education
Henrietta Trujillo, BBA ...... Director, Financial Operations
Tamara Trujillo, MA ........ Coordinator, Academic Programs, College of Education
Melissa Velasquez, MA ...... Director, El Rito Campus
Jerome Williams, MBA ...... Bookstore Manager
FULL-TIME FACULTY

Helen Alarid, Assistant Professor
University of New Mexico: MSN, 2010

Claudia Aprea, Assistant Professor
University of Washington-Seattle: PhD, 1996

Lori Baca, Associate Professor
University of Phoenix: MBA, 1992

David Barton, Associate Professor
Pacifica Graduate Institute: PhD, 2006

James Biggs, Assistant Professor
New Mexico State University: PhD, 2007

Tucker Brown, Assistant Professor
Loyola University, Maryland: PhD, 2012

Julian Barela, Assistant Professor
Argosy University; DBA, 2012

Camilla Bustamante, Associate Professor
University of New Mexico: PhD and MPH, 2005

Marcos Cavalcante, Associate Professor
Indiana University: PhD, 1999

Rose Cavalcante, Associate Professor
Indiana University: PhD, 1998

Jorge Crichigno, Associate Professor
University of New Mexico: PhD, 2009

K. Timothy Crone, Associate Professor
Texas Tech University: MA, 1971

Karen Duncan, Assistant Professor
The University of Vermont and State Agricultural College: MSN, 1995

Betty Espinoza, Technical Assistant Professor
Northern New Mexico Community College: AAS, 1995

Christina Esquibel, Associate Professor
New Mexico Highlands University: MA, 1994

Michael Frain, Associate Professor
University of Phoenix: MA, 2004

Lori Franklin, Associate Professor
California State University: MA, 1989

Lucas Gonzales, Assistant Professor
University of New Mexico: MSN, 2011
Ivette Guzman, Assistant Professor
New Mexico State University: PhD, 2009

Cappie Hausman, Associate Professor
University of New Mexico: MSN, 2010

Darlene Hess, Assistant Professor
University of New Mexico: PhD, 1996

Ajit Hira, Associate Professor
University of Texas–Arlington: PhD, 1990

Jot Kaur Khalsa, Technical Assistant Professor
Antioch University, New England: MA, 1991

Raj Inder Kaur Khalsa, Assistant Professor
University of Texas: MSN, 2002

Donal Kinney, Assistant Professor
University of New Mexico: MAACCT, 2003

Mario Izaguirre-Sierra, Assistant Professor
John Innes Center, East Anglia University: PhD, 2009

Pamela Lapcevic, Associate Professor
New Mexico Highlands University: MA, 2009

Matthew Leder, Assistant Professor
University of New Orleans: MM, 2005

Brenda Linnell, Assistant Professor
University of Texas–El Paso: PhD, 2011

Ivan Lopez, Assistant Professor
University of New Mexico: PhD, 2008

Theresa Lopez, Assistant Professor
University of New Mexico: MSN, 2007

Matthew J. Martinez, Assistant Professor
University of Minnesota: PhD, 2008

Ashis Nandy, Assistant Professor
Pennsylvania State University: PhD, 2012

Patricia Perea, Assistant Professor
University of New Mexico: PhD, 2010

Cheryl Peachey, Assistant Professor
University of New Mexico: BS, 2010

Raul Peralta, Lecturer
University of New Mexico: MS, 2007

Alfredo Perez, Assistant Professor
University of South Florida: PhD, 2011
Ulises M. Ricoy, Assistant Professor  
University of Texas San Antonio: PhD, 2007

Anthony Sena, Professor  
University of New Mexico School of Medicine: PhD, 2005

Gilbert Sena, Technical Associate Professor  
University of New Mexico: BA, 1997

Karen Simpson, Associate Professor  
University of Pittsburgh: MBA, 1989

David Torres, Assistant Professor  
University of New Mexico: PhD, 1996

Ellen Trabka, Associate Professor  
University of Massachusetts-Lowell: MSN, 1995

Patricia Trujillo, Assistant Professor  
University of Texas-San Antonio: PhD, 2008

Elaine Valdez, Instructor  
Northern New Mexico Community College: Cert, 1988

Judith Vejvoda, Assistant Professor  
University of New Mexico: MFA, 1998

Donna Winchell, Associate Professor  
University of Hawaii: MEd, 1973

Heather Winterer, Assistant Professor  
University of Nevada-Las Vegas: PhD, 2007

**FACULTY AND STAFF EMERITUS**

Cora Abeyta, Certificate  
Instructor Emeritus of Cosmetology, 1977-1983

Jose Griego, PhD  
President Emeritus, 2005-2009

Sigfredo Maestas, PhD  
President Emeritus, 1996-2005

Priscilla C. Trujillo, MA  
Exec. Vice-President Emeritus, 1996-2003

Levi Valdez, MA  
Dean Emeritus of Continuing Education and Community Services, 1996-2001
Academic Calendar 2012-2013

FALL 2012

Deadline to Petition to Graduate in Fall 2012 ........................................ Fri., June 29
Deadline for Degree & Certificate Students to Submit an Application
   for Fall 2012 ................................................................................................. Fri., Aug. 10
PAYMENT DEADLINE: pay in full, or 10% down plus a payment plan,
   or be disenrolled .......................................................................................... Fri., Aug. 10
Deadline for Non-Degree Students to Submit an Application
   for Fall 2012 ................................................................................................. Thur., Aug. 16
REGISTRATION .............................................................................................. Mon., Apr 9 - Sun. Aug. 19
Convocation .................................................................................................. Mon., Aug. 13
CLASSES BEGIN ............................................................................................ Mon., Aug. 19
Late Registration (one day only) ................................................................. Mon., Aug. 20
Last Day to Change Schedule (Drops/Add only) ........................................ Fri., Aug. 24
Last Day to Change from CR-AU/AU-CR ..................................................... Fri., Aug. 31
Last Day to Receive a Refund for Texts through the Bookstore .................. Thur., Aug. 30
Last Day to Drop from a Full-Term Course with a Refund ......................... Fri., Aug. 31
Holiday (Labor Day) ..................................................................................... Mon., Sept. 3
Last Day to Drop from a Full-Term Course without Record ....................... Fri., Sept. 7
Mid-Term Week ............................................................................................. Oct. 8-12
Fall Break (no classes) ................................................................................. Mon.-Tues., Oct. 15-16
Mid-Term Grades Due .................................................................................. Wed., Oct. 17
Faculty and Staff Development Day (no classes) ....................................... Wed., Oct. 17
REGISTRATION FOR SPRING 2013 BEGINS. ........................................ Mon., Oct. 22
Last Day for Instructors to Initiate a Withdrawal ........................................ Fri., Oct. 26
Last Day to Withdraw from a Full-Term Course ......................................... Fri., Nov. 9
Holiday (Veterans Day), No Classes. ............................................................ Mon., Nov. 12
Deadline to Petition to Graduate in Spring 2013 ........................................ Fri., Nov. 16
Thanksgiving Break ...................................................................................... Thur.-Sun., Nov. 22-25
Final Exams* ................................................................................................. Sat.-Thur., Dec. 8-13
Summer and Fall 2012 Graduates Convocation .......................................... Thurs., Dec. 13
*Exam make-up days in case of bad weather ............................................. Fri.-Sat., Dec. 14-15
Last Day of Term .......................................................................................... Fri., Dec. 14
Final Grades Due .......................................................................................... Mon., Dec. 17

SPRING 2013

Deadline for Degree & Certificate Students to Submit an Application
   for Spring 2013 ............................................................................................ Mon., Dec. 31
Deadline for Non-Degree Students to Submit an Application
   for Spring 2013 ........................................................................................... Thur., Jan. 10
Convocation .................................................................................................. Mon., Jan. 7
REGISTRATION FOR SPRING 2013. ......................................................... Mon., Oct 22 – Mon., Jan. 14
CLASSES BEGIN .......................................................................................... Mon., Jan. 14
Late Registration (one day only) ................................................................. Mon., Jan. 14
PAYMENT DEADLINE: pay in full, or 10% down plus a payment plan, or be disenrolled .................................................. Wed., Jan. 16
Last Day to Change Schedule (Drops/Adds only) .......................................................... Fri., Jan. 18
Holiday (Martin Luther King Jr’s Birthday) .......................................................... Mon., Jan. 21
Last Day to Change from CR-AU/AU-CR .......................................................... Fri., Jan. 25
Last Day to Drop a Full-Term Course with a Refund ........................................ Fri., Jan. 25
Last Day to Receive a Refund for Text through the Bookstore ................................ Mon., Jan. 28
Last Day to Drop a Full-Term Course without Record ....................................... Fri., Feb. 1
Mid-Term Week .......................................................... Mon.-Fri., March 4-8
Mid-Term Grades Due .......................................................... Tues., March 12
Spring Break .......................................................... Mon.-Sun., March 11-17
Last Day for Instructors to Initiate a Withdrawal ....................................... Fri., March 22
Holiday (Good Friday) .......................................................... Fri., March 29
Last Day to Withdraw from a Full-Term Course ........................................ Fri., April 5
Registration for Summer and Fall 2013 Begins ........................................ Mon., April 8
Final Exams* .......................................................... Sat.-Fri., May 4-10
Commencement Rehearsal .......................................................... Thur., May 9
Last Day of Term .......................................................... Fri., May 10
*Exam make-up day in case of bad weather ........................................ Fri., May 10
COMMENCEMENT CEREMONY .......................................................... Sat., May 11
Final Grades Due .......................................................... Mon., May 13

SUMMER 2013

Deadline to Petition to Graduate in Summer 2013 ........................................Fri., May 3
Deadline for Degree & Certificate Students to Submit an Application for Summer 2013 ........................................ Fri., May 10
PAYMENT DEADLINE: pay in full, or 10% down plus payment plan, or be disenrolled ........................................ Fri., May 24
Deadline for Non-Degree Students to Submit an Application for Summer 2013 ........................................ Thur., May 30
REGISTRATION .......................................................... Mon., Apr 8 - Sun., June 2
CLASSES BEGIN .......................................................... Mon., June 3
Last Day to Change Schedule (Drops/Adds only) ........................................ Wed., June 5
Last Day to Change Grade Option from CR-AU/AU-CR .................................. Fri., June 7
Last Day to Drop a Full-Term Course with 100% Refund ................................ Fri., June 7
Last Day to Receive a Refund for Texts through the Bookstore ........................ Mon., June 10
Deadline to Petition to Graduate in Fall 2013 ........................................ Fri., June 28
Last Day to drop a Full-Term Course with 50% Refund ................................ Fri., June 14
Deadline to Petition to Graduate in Fall 2013 ........................................ Fri., June 28
Holiday (Independence Day) .......................................................... Thur., July 4
Last Day to Withdraw from a Full-Term Course ........................................ Fri., July 12
Last Day of Term .......................................................... Fri., July 26
Final Grades Due .......................................................... Mon., July 29

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FALL 2013

Deadline to Petition to Graduate in Fall 2013 ........................................ Fri. June 28
Deadline for Degree & Certificate Students to Submit an Application
for Fall 2013 ......................................................................................... Fri., Aug. 9
PAYMENT DEADLINE: pay in full, or 10% down plus a payment plan,
or be disenrolled ........................................................................ Fri., Aug. 9
Deadline for Non-Degree Students to Submit Application for Fall 2013... Thurs., Aug. 15
REGISTRATION ................................................................................. Mon., April 8 - Sun. Aug. 18
Convocation ....................................................................................... Mon., Aug. 12
CLASSES BEGIN .............................................................................. Mon., Aug. 19
Late Registration (one day only, $35 late fee required) ....................... Mon., Aug. 19
Last Day to Change Full-term Course Schedule (Drops/Adds only) .... Fri., Aug. 23
Last Day to Receive a Refund for Texts through the Bookstore .......... Thurs., Aug. 29
Last Day to Change Grade Option from CR-AU/AU-CR .................. Fri., Aug. 30
Last Day to Drop from a Full-Term Course with a Refund ................. Sun., Sept. 1
Holiday (Labor Day) ......................................................................... Mon., Sept. 2
Last Day to Drop from a Full-Term Course without Record ............. Fri., Sept. 6
Mid-Term Week .................................................................................. Oct. 7-11
Fall Break (no classes) ...................................................................... Mon.-Tues., Oct. 14-15
Mid-Term Grades Due ........................................................................ Wed., Oct. 16
Faculty and Staff Development Day (no classes) ................................. Wed., Oct. 16
REGISTRATION FOR SPRING 2014 BEGINS. ................................. Mon., Oct. 21
Last Day for Instructors to Initiate a Withdrawal ................................. Fri., Oct. 25
Last Day to Withdraw from a Full-Term Course ................................ Fri., Nov. 8
Holiday (Veterans Day) No Classes ................................................ Mon., Nov. 11
Deadline to Petition to Graduate in Spring 2014 ................................. Fri., Nov. 15
Thanksgiving Break ........................................................................... Thurs.-Sun., Nov. 28 - Dec. 1
Final Exams* ..................................................................................... Sat.-Fri., Dec. 7-13
Winter Commencement for Summer and Fall 2013 Graduates ........ Sat., Dec. 14
*Exam make-up days in case of bad weather .................................. Fri.-Sat., Dec. 13-14
Last Day of Term ............................................................................... Fri., Dec. 13
Final Grades Due ............................................................................... Mon., Dec. 16

SPRING 2014

Deadline to Petition to Graduate in Spring 2014 ............................... Fri., Nov. 15
Deadline for Degree & Certificate Students to Submit Admissions Application
for Spring 2014 .................................................................................. Mon., Dec. 30
PAYMENT DEADLINE: pay in full, or 10% down plus a payment plan,
or be disenrolled ........................................................................ Fri., Jan. 10
Deadline for Non-Degree Students to Submit an Admissions Application
for Spring 2014 ................................................................................ Thurs., Jan. 16
Convocation ................................................. Mon., Jan. 13
Holiday (Martin Luther King Jr’s Birthday) ................................ Mon., Jan. 20
CLASSES BEGIN ............................................ Tues., Jan. 21
Late Registration (one day only, $35 late fee required) .......... Tues., Jan. 21
Last Day to Change Full-term Course Schedule (Drops/Add only) .......... Fri., Jan. 24
Last Day to Change Grade Option from CR-AU/AU-CR ............ Sun., Feb. 2
Last Day to Drop a Full-Term Course with a Refund ............. Fri., Jan. 31
Last Day to Receive a Refund for Text through the Bookstore .... Mon., Feb. 3
Mid-Term Grade Due ........................................... Mon., Feb. 10
Mid-Term Grades Due ........................................... Tues., March 18
Spring Break ................................................. Sun.-Sun., March 16-23
Last Day for Instructors to Initiate a Withdrawal ................. Fri., March 28
Last Day to Withdraw from a Full-Term Course ........... Fri., April 18
REGISTRATION FOR SUMMER AND FALL 2014 BEGINS .......... Mon., April 14
Holiday (Good Fri.) ............................................ Apr., April 18
Deadline to Petition to Graduate in Summer 2014 .............. Fri., May 2
Final Exams** ................................................. Sat.-Fri., May 9-16
Commencement Rehearsal .................................. Thurs., May 15
Last Day of Term ............................................. Fri., May 16
*Exam make-up day in case of bad weather ....................... Fri., May 16
COMMENCEMENT CEREMONY ......................... Sat., May 17
Final Grades Due ............................................. Mon., May 19

SUMMER 2014

Deadline to Petition to Graduate in Summer 2014 .............. Fri., May 2
Deadline for Degree & Certificate Students to Submit Admissions Application for Summer 2014 ............................ Fri., May 2
PAYMENT DEADLINE: pay in full, or 10% down plus payment plan, or be disenrolled .............. Fri., May 30
Deadline for Non-Degree Students to Submit an Admissions Application for Summer 2014 ............................ Thurs., June 5
REGISTRATION ........................................... Mon., Apr 14 – Sun., June 8
CLASSES BEGIN ............................................ Mon., June 9
Last Day to Change Full-term Course Schedule (Drops/Add only) .......... Wed., June 11
Last Day to Change Grade Option from CR-AU/AU-CR ............. Fri., June 13
Last Day to Drop a Full-Term Course with 100% Refund .......... Sun., June 15
Last Day to Receive a Refund for Text through the Bookstore .... Mon., June 16
Last Day to Drop a Full-Term Course with 50% Refund .......... Sun., June 22
Deadline to Petition to Graduate in Fall 2014 ....................... Fri., June 27
Holiday (Independence Day) ..................................... Fri., July 4
Last Day to Withdraw from a Full-Term Course ............... Fri., July 18
Last Day of Term ............................................. Fri., Aug 1
Final Grades Due ............................................. Mon., Aug 4
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