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.

CAMPUS LOCATIONS

<table>
<thead>
<tr>
<th>El Rito Campus</th>
<th>Española Campus</th>
</tr>
</thead>
<tbody>
<tr>
<td>El Rito, NM 87530</td>
<td>921 Paseo de Oñate</td>
</tr>
<tr>
<td>(505) 581-4100</td>
<td>(505) 747-2100</td>
</tr>
<tr>
<td>FAX (505) 581-4130</td>
<td>FAX (505) 747-2180</td>
</tr>
</tbody>
</table>

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.

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:** Nancy O’Rourke, Director of Human Resources, Northern New Mexico College, 921 Paseo de Oñate, Española, NM 87532, (505) 747-2160.

**Section 504 ADA Coordinator:** Rebecca Cabildo, Special Needs Director, 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 Publications editor at 505.747.2193 or at lpowell@nnmc.edu.

Copies of this catalog are available online at www.nnmc.edu. You may also purchase a copy through Northern’s Bookstore at a cost of $3.00 each.

**COVER PHOTO: PAULA REID**
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General Information

HISTORY OF NNMC

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 per-
mitted 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
Northern New Mexico College provides accessible, affordable, community-based
learning opportunities that meet the educational, employment, and enrichment needs
of our culturally diverse region.

VISION STATEMENT
By the year 2015, Northern New Mexico College will be a regionally recognized com-
prehensive university creating a culture of quality student learning that addresses
student and employee needs while maintaining the community college mission.

ACCREDITATION
Simultaneously with the expansion of mission and services, Northern undertook can-
didacy 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 Engineer-
ing (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 Stud-
ies, 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 accred-
ited 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 licens-
ing 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 Registrar at (505) 747-2193.

**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. 210. The Española campus consists of eight 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 Reservoir, which is a prime water recreational 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 preference, 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 identification; the College issues student ID numbers, which are 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), when you return to Northern, you will have to submit an application for readmission. At that time, no matter what major you declare, your eligibility status starts with that 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 pick up 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, dependent 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 that you have completed or 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 is recorded the “suspension.” 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 need do nothing but 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.

CONCURRENT ADMISSION

Concurrent admission 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 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.

If 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.

ENROLLMENT WHILE in HIGH SCHOOL and DUAL CREDIT

Enrollment in courses is based on 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 your parents will be responsible for transportation and any non-general fees (e.g., lab, course, or media fees). The key to participating in Dual Credit enrollment is that 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 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. In 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 move, you will have 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 degrees. 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
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 CRS
(a) College-level English Composition 3 crs
(b) College-level Writing (a second course building on the above) 3 crs
(c) Oral Communication 3 crs

AREA II: MATHEMATICS / SELECT 3 SEM CRS
(a) College Algebra 3 crs
(b) Other math course at/above level of College Algebra

AREA III: LABORATORY SCIENCE / SELECT 8 SEM CRS
(a) General Biology, with laboratory 4–8 crs
(b) General Chemistry, with laboratory 4–8 crs
(c) General Physics, with laboratory 4–8 crs
(d) Geology/Earth Science, with lab. 4–8 crs
(e) Astronomy, with laboratory 4–8 crs

AREA IV: SOCIAL & BEHAVIORAL SCIENCES SELECT / 6–9 SEM CRS
(a) Economics (Macro- or Microeconomics) 3 crs
(b) Introduction to Political Science 3 crs
(c) Introduction to Psychology 3 crs
(d) Introduction to Sociology 3 crs
(e) Introduction to Anthropology 3 crs

**AREA V: HUMANITIES AND FINE ARTS SELECT** 6–9 SEM CRS

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

*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
- Biological Sciences
- Engineering
- Teacher Education
- Social/Behavioral Sciences
- Physical Sciences
- Early Childhood 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 AWARDING 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 = 3.0, except English, a 4.0.**

**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)
- Music Theory = MUS 102 (3) & MUS 216 (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 & Interpretation of Lit. (50) ENG 112 (3)
American History I (50)   HIST 161 (3)
American History II (50)   HIST 162 (3)
College Algebra (46)   MATH 130 (3)
College Algebra (50)*   MATH 150 (3)
   (A score of 50 or better will earn credit for 130 & 150)
College Algebra/Trigonometry (61)  MATH 155 (3)
   (A score of 61 will earn credit for 150 & 155)
Calculus w/ Elem. Functions (47)  MATH 162 (3)
American Government (50)   PSCI 200 (3)
General Psychology (50)   PSY 105 (3)
Human Growth & Development (50)  PSY 290 (3)
Introduction to Sociology (50)   SOC 101 (3)
College Spanish I & II (50)   SPAN 101/102 (6)
   (A score of 50-62 will earn 6 crs.)
College Spanish I and II (63)  SPAN 201/202 (6)
   (A score of 63 or better will earn 12 crs.)

DSST (DANTES) Subject Exams
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.

   Business Mathematics (48)   BA 205 (3)
   Criminal Justice (49)   CJ 111 or CJ 132 (3)
   Here’s to Your Health (48)   HPER El. (3)
   Resource Management (46)   BA360 (3)
   Introduction to Business (46)   BA 220 (3)
   Int. to Law Enforcement (45)   CJ 211 or CJ 221 (3)
   Lifespan Develop. Psychology (46)   PSY 290 (3)
   Mgmt Information Systems (46)   BA 242 (3)
   Organizational Behavior (48)   BA 313 (3)
   Principles of Finance (46)   BA 310 (3)
   Principles of Statistics (48)   MATH 145 (3)
   Principles of Supervision (46)   BA 240 (3)

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 foreign 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 colleges. 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 crs
- Sophomore: 33.0 to 67.9 crs
- Junior: 68.0 to 100.9 crs
- Senior: 101.0 to 999.9 crs

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 through our webpage: www.nnmc.edu by clicking on MyNNMC. You must do a one-time activation of your Eagles email, then you can choose to be put on a waitlist for closed classes, 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 with 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**

In order to ensure that you have the best chance to meet your individual goals and to be successful at completing the requirements for a degree or certificate, Northern has established a Student Advisement Center which is staffed by trained professionals who provide a full range of academic advisement to any person seeking assistance.

All first-time-any-college students must attend New Student Orientation in order to register for classes. Continuing students are also encouraged to use the Center’s services, which include referrals for placement evaluations.

After your first semester, full-time faculty advisors in your major area will take over the primary responsibility of providing continuing advisement. If you are in non-degree status, your advisor will be one of the Student Advisement Center staff.
To find the name of your assigned advisor, open MyNNMC at www.nnmc.edu, click on Student Information, then on Student Financial Aid & Records, then on Student Records.

A related program, our Success, Opportunity, and Learning (SOL), is located adjacent to the Student Advisement Center. Its purpose is to provide special support to those students who are first-time college students, low income, and/or disabled. They provide such varied services from tutorial assistance to providing tickets and transportation to cultural events.

**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 am-2 pm with the exceptions of school 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 Range</th>
<th>ACT Range</th>
<th>SAT Range</th>
<th>Place into</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-14 English</td>
<td>0-8</td>
<td>200-250</td>
<td>ABE*</td>
</tr>
<tr>
<td>15-32</td>
<td>9-11</td>
<td>260-280</td>
<td>ENG 106N</td>
</tr>
<tr>
<td>33-46</td>
<td>12-13</td>
<td>290-320</td>
<td>ENG 108N</td>
</tr>
<tr>
<td>47-69</td>
<td>14-20</td>
<td>330-450</td>
<td>ENG 109N</td>
</tr>
<tr>
<td>70-100</td>
<td>21-25</td>
<td>460-640</td>
<td>ENG 111</td>
</tr>
<tr>
<td></td>
<td>26-36</td>
<td>650-800</td>
<td>ENG 112</td>
</tr>
<tr>
<td>0-22 Math</td>
<td>0-12</td>
<td>200-280</td>
<td>ABE*</td>
</tr>
<tr>
<td>23-35</td>
<td>13-14</td>
<td>290-310</td>
<td>PD 108N*</td>
</tr>
<tr>
<td>36-42</td>
<td>15-16</td>
<td>320-340</td>
<td>MATH 100N</td>
</tr>
<tr>
<td>43-100</td>
<td>17-19</td>
<td>350-410</td>
<td>MATH 102N/103N/104N</td>
</tr>
<tr>
<td>MII 1-11</td>
<td></td>
<td></td>
<td>MATH 102N/103N/104N</td>
</tr>
<tr>
<td>MFII 12-19</td>
<td>20-21</td>
<td>420-490</td>
<td>MATH 130/132</td>
</tr>
<tr>
<td>MFII 20-26</td>
<td>22-24</td>
<td>500-530</td>
<td>MATH 145 or 150</td>
</tr>
<tr>
<td>MFII 27-34</td>
<td>25-26</td>
<td></td>
<td>MATH 155 or 160</td>
</tr>
<tr>
<td>MFII 35-38</td>
<td>27-36</td>
<td>540-800</td>
<td>MATH 162</td>
</tr>
</tbody>
</table>
0-64 Reading  0-7     ABE*
65-76  8-15     RDG 108N
77-80  16-17    RDG 109N
81-100 18-36    No course needed
Science  19-36    CHEM 110

* These courses are below the threshold set for financial aid eligibility. ABE refers to Northern's Adult Basic Education Center, which offers a level of skill remediation which is not part of Northern's credit division.

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 747-2199 for inquiries. We strongly suggest that you take advantage of test-prep materials available at www.testpreview.com before you test. If you are not satisfied with your scores, you may re-test, but you must wait five work 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. Detailed information on each different Part of Term (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 just drop from one class or drop all classes. We encourage you to make these changes online; however, you can execute such changes by contacting your faculty 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
One of the services provided by the Office of the Registrar is that of verifying your enrollment to outside agencies. You may need this done in order to receive some benefit from such an agency, but only if we verify your enrollment in some official way, such as on a form or letterhead. Note that we are able 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, we 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.

Special note: Under financial aid regulations applicable only to students receiving federal assistance under Title IV funds, if you exercise your right to drop or withdraw from one or more courses, you may change your mind and seek reinstatement by
filing with the Registrar's Office a written statement that you want to rescind the action and continue to attend classes through the end of the payment period or the period of enrollment. The deadline for seeking to be reinstated is no more than five school days after your withdrawal. If, after requesting reinstatement, you subsequently withdraw or stop attending, the effective date of withdrawal for purposes of computing financial aid repayment will be the original date of withdrawal or (at the College's discretion) the last date of academic activity as determined by the College.

**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 which operate to 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 or the failure to reveal previous attendance at other colleges/universities, or a serious violation of the Student Code of Conduct.

**Distance Education**

Northern New Mexico College offers online courses as an alternative to the traditional campus experience. If you have scheduling problems, work full-time, or live at a distance from either campus, you might want to consider taking an online class. Courses are completed electronically using a computer with Internet access. NNMC offers distance education courses fully online and in hybrid formats. Online and hybrid 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 uses Blackboard as its web-based course management system (LMS) available for traditional classroom, hybrid, and online courses. Students participate in an interactive relationship with their instructor throughout the semester via a secure login. Instructors post syllabi, lecture notes and class assignments; use email and discussion boards; utilize multimedia content; and conduct class meetings using
Recently, Northern New Mexico College has undergone a restructuring of its Interactive Video (IV) network. With the most current technology, NNMC will be able to deliver 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 from either Española or El Rito campuses and can reach any designated remote site within New Mexico or the continental United States.

**REQUIREMENTS FOR ACCESSING 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; surfing the web; sending and receiving emails; and using various software programs.
- Access to a computer 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.

**DISTANCE EDUCATION LOGIN INFORMATION:**

**username** = entire Student (Banner) ID, including all leading 0’s.

**Your password** = your date of birth (e.g., 122290 for a birth date of Dec. 22, 1990).

Northern students have access to the computer lab in the Student Success Center on the Española campus. If you have a computer purchased new within the last 3 years, you will probably meet the requirements below.

**COMPUTER HARDWARE AND SOFTWARE REQUIREMENTS:**

**Operating Systems:** Windows XP minimum (Windows 7 preferred),
Macintosh System 10.0 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 4 with Flash, Java plug-ins installed

**Modem:** 56 kbps or higher 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 hybrid/online courses; obtain your access key from either the NNMC Bookstore or your instructor.

For technical assistance please contact:

Peter Snyder, 747.5418, ptsnyder@nnmc.edu
Chris Trujillo, 747.5414, chrisjtrujillo@nnmc.edu

After Hours Support: 747.5446, leave a detailed message.

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 minimum 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**
   Social/Behavioral  3

   Total = 18

   * Must include ENG 111 (English Composition I)
   ** Six 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* degrees. Only courses from these breakdowns may be used to satisfy the discipline requirement for General Education electives in an *applied science degree* (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.

**COMMUNICATIONS**
- English *
- Foreign Language
- Speech

**HUMANITIES**
- Art (theory only)
- History
- Humanities
- Literature
- Music (theory only)

**MATHEMATICS** *
- MATH 130 or higher

**PHILOSOPHY**
- Theatre (theory only)

*Excludes Literature courses and Creative Writing

**LABORATORY SCIENCES** **
- Astronomy
- Biology
- Chemistry
- Environmental Science
- Geology
- Physics

**SOCIAL/BEHAVIORAL**
- Anthropology
- Economics
- Geography
- Political Science
- Psychology
- Sociology

** 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 it feels presents 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.

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

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

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

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

**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 CRS)**

**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 CRS)**

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
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 110</td>
<td>Indian Culture of the Southwest</td>
</tr>
<tr>
<td>ANTH 207</td>
<td>Cultures of New Mexico</td>
</tr>
<tr>
<td>ECON 200</td>
<td>Macroeconomics</td>
</tr>
<tr>
<td>ECON 201</td>
<td>Microeconomics</td>
</tr>
<tr>
<td>GEOG 111</td>
<td>World Geography</td>
</tr>
<tr>
<td>HSS/HUM 311</td>
<td>Readings in the Social Sciences **</td>
</tr>
<tr>
<td>HSS/HUM 414</td>
<td>Humanity and Creativity **</td>
</tr>
<tr>
<td>HSS/HUM 421</td>
<td>History, Literature, Art &amp; Philosophy **</td>
</tr>
<tr>
<td>PSCI 110</td>
<td>The Political World</td>
</tr>
<tr>
<td>PSCI 120</td>
<td>Contemporary Political Issues</td>
</tr>
<tr>
<td>PSCI 200</td>
<td>American Politics</td>
</tr>
<tr>
<td>PSCI 210</td>
<td>State and Local Government</td>
</tr>
<tr>
<td>PSCI 212</td>
<td>The American Presidency</td>
</tr>
<tr>
<td>PSY 105</td>
<td>General Psychology</td>
</tr>
<tr>
<td>PSY 210</td>
<td>Theories of Personality</td>
</tr>
<tr>
<td>PSY 229</td>
<td>Adolescent Psychology</td>
</tr>
<tr>
<td>PSY 230</td>
<td>Psychology of Adjustment</td>
</tr>
<tr>
<td>PSY 232</td>
<td>Abnormal Behavior</td>
</tr>
<tr>
<td>PSY 290</td>
<td>Developmental Psychology</td>
</tr>
<tr>
<td>PSY 370</td>
<td>Social Psychology</td>
</tr>
<tr>
<td>SOC 101</td>
<td>Introduction to Sociology</td>
</tr>
<tr>
<td>SOC 213</td>
<td>Deviant Behavior</td>
</tr>
<tr>
<td>SOC 216</td>
<td>Ethnic and Intercultural Relations</td>
</tr>
<tr>
<td>SOC 220</td>
<td>Social Problems</td>
</tr>
<tr>
<td>SOC 225</td>
<td>Marriage and the Family</td>
</tr>
<tr>
<td></td>
<td>Plus, topic courses with student advisor's approval</td>
</tr>
</tbody>
</table>

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

You must select courses from at least two different discipline areas from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 105</td>
<td>Introduction to Art</td>
</tr>
<tr>
<td>ART 107</td>
<td>History of Art I</td>
</tr>
<tr>
<td>ART 208</td>
<td>History of NM Art &amp; Arch. I</td>
</tr>
<tr>
<td>ART 211</td>
<td>History of Art II</td>
</tr>
<tr>
<td>DANC 240</td>
<td>Dance Appreciation</td>
</tr>
<tr>
<td>DANC 245</td>
<td>Dance History</td>
</tr>
<tr>
<td>ENG 270</td>
<td>Children's Literature</td>
</tr>
<tr>
<td>ENG 262</td>
<td>Literature of the Southwest</td>
</tr>
<tr>
<td>ENG/PIS 265</td>
<td>Native American Literature I</td>
</tr>
<tr>
<td>ENG/PIS 266</td>
<td>Native American Literature II</td>
</tr>
<tr>
<td>ENG 280</td>
<td>Readings in Literature</td>
</tr>
<tr>
<td>ENG 290</td>
<td>Study of Literature</td>
</tr>
<tr>
<td>ENG 294</td>
<td>Mythology</td>
</tr>
<tr>
<td>FDMA 280</td>
<td>History of Cinema</td>
</tr>
<tr>
<td>HIST 101</td>
<td>Western Civilization I</td>
</tr>
<tr>
<td>HIST 102</td>
<td>Western Civilization II</td>
</tr>
</tbody>
</table>
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
HUM/HSS 311 Readings in the Social Sciences **
HUM/HSS 414 Humanity and Creativity **
HUM/HSS 421 History, Literature, Art & Philosophy **
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

Plus, topic courses with student advisor’s approval

** TOTAL TO BE SELECTED = 35 SEMESTER HOURS **

* If your major is in the area of the Humanities/Fine Arts, you should select 9 hrs from Area IV 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.

For purposes of meeting graduation requirements, courses which appear on this list and which 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

Since becoming a college in 1977, Northern used a letter-grade system based on 4.00 points: thus an A = 4.00 (Outstanding), a B = 3.00 (Above Average), a C = 2.00 (Average, Passing), a D = 1.00 (Passing, but Below Average), and an F = 0.00 (Failing).

In Fall 2008, Northern replaced its earlier system with an optional fractional grading system. Following are the allowable grades and associated grade points:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Grade Points</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>4.33</td>
<td>Outstanding</td>
</tr>
<tr>
<td>A</td>
<td>4.00</td>
<td>Outstanding</td>
</tr>
<tr>
<td>A-</td>
<td>3.67</td>
<td>Outstanding</td>
</tr>
<tr>
<td>B+</td>
<td>3.33</td>
<td>Above Average</td>
</tr>
<tr>
<td>B</td>
<td>3.00</td>
<td>Above Average</td>
</tr>
<tr>
<td>B-</td>
<td>2.67</td>
<td>Above Average</td>
</tr>
<tr>
<td>C+</td>
<td>2.33</td>
<td>Average, Passing</td>
</tr>
<tr>
<td>C</td>
<td>2.00</td>
<td>Average, Passing</td>
</tr>
<tr>
<td>C-</td>
<td>1.67</td>
<td>Average, Below Passing*</td>
</tr>
<tr>
<td>D+</td>
<td>1.33</td>
<td>Below Passing*</td>
</tr>
<tr>
<td>D</td>
<td>1.00</td>
<td>Below Passing*</td>
</tr>
<tr>
<td>D-</td>
<td>0.67</td>
<td>Below Passing*</td>
</tr>
<tr>
<td>F</td>
<td>0.00</td>
<td>Not Passing</td>
</tr>
</tbody>
</table>

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. Beginning in Spring 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 by the end of the second week of a regular semester or 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, countersigned by the department chairperson, and subsequently accepted by the Registrar, you will have up to one year to complete that small portion of the course still lacking. Usually, though, the deadline for completion will be much shorter than a full twelve months--more like 1-3 months, in fact. 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 “I” has been converted 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 we can get grades out 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 giving 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 there is anything 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, and you must do so within twelve months of the date the grade was assigned and recorded in your records. *To initiate the appeal, you must complete the following steps:*

1. 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, a program director).

2. 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, a faculty committee.

3. 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.

**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**

Because 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 of which 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 adopted a policy which allows those who fall into this category to request that such grades be deleted from their academic transcript. To ask for Academic Forgiveness, visit the Office of the Registrar, who is responsible for administering this policy.

*The criteria for exercising this possibility:*

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 set up 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 recorded on your permanent record, the 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 your name will be released to your hometown press.

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 would 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.

Northern prefers not to look on Suspension as a penalty for failure, but as an opportunity to deal with the pressures of life and school (which may have contributed to the low grades which 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 even 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. 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.

4. You must complete a Petition to Graduate form. This includes obtaining sign-offs by your academic advisor and department chair, payment of the required graduation fee, and submission of the form through various college departments, and finally to the Office of the Registrar. We ask that you finish this process no later than the end of the fourth week of the term in which you plan to graduate. 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.

5. 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.

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

7. 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 entitled “Change of Name”) prior to graduation.

8. Replacement diplomas will be provided for a fee of $7.50 each, but only if the diploma was awarded since 1999. Northern has no way of producing a diploma for any period earlier than 1999.

9. 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 Petition-to-Graduate within two years of having completed all of your program requirements.

**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, your diploma will bear a gold seal with the imprint of the society, and your transcript will bear a notation which recognizes your membership. You will also 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 one of our alumni, it is important that you stay in touch with Northern, sharing with us changes in name, address, etc. That way we can continue to let you know what your college is doing, etc.

**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  

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)  
$100.45/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**

**Student Activity Fee:** $1.50/credit to a maximum of $18.00 per term or $9.00 in summer session.

**Instructional Technology Fee:** $5.00/credit to a maximum of $60.00 per term or $45.00 in summer session.

**Student Service Fees per credit hour:**

<table>
<thead>
<tr>
<th>1</th>
<th>4</th>
<th>7</th>
<th>10+</th>
</tr>
</thead>
<tbody>
<tr>
<td>$10</td>
<td>$40</td>
<td>$70</td>
<td>$100</td>
</tr>
</tbody>
</table>

**Online Access Fee:** $25.00 charge for all students enrolled in more than three credits per term.

**Lab/course fee:** $20-30 per course, as appropriate (see class schedule).

**Media fee:** $25 per credit hour

**OTHER FEES**

**Registration (nonrefundable)**  $5.00  
**Late Registration (nonrefundable)**  $5.00  
**Graduation**  $50.00  
**Additional or replacement diplomas**  $7.50  
**In–house examinations (per course)**  $20.00  
**COMPASS Retesting Fee**  $10.00  
**Payment Plan Fee (nonrefundable)**  $25.00  
**Late Payment Fee**  $10.00  
**CLEP/DSST examination (per course)**  $15.00

The graduation fee of $50 is a flat fee which covers all costs of graduation, including the diploma, diploma cover, cap & gown, etc.) 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 and lower-division vs. upper-division rates.

Books, Supplies, and Equipment (avg.) $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 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. Your charges will then be spread out monthly. 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 NNMC homepage) or via the TouchNet link “Bill+Payment” at the bottom of the NNMC 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. Checks will no longer be issued.
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 lower-division courses. If you enroll for more than 6 credit hours in lower-division 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 upper-division 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.

To use this benefit, you must clearly state your intention to do so on your Application for Admission—there is a box to check on the form.
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 Admissions 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 nonresident 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 nonresident 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 inde-
dependent 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 nonresidents 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 income tax showing the applicant as a dependent and the parent
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 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 stu-
dent 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 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 nonresident 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 the 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 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 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. Part–time students. During regular academic year semesters, nonresident tuition may be waived, according to the institution’s tuition policy, for students (U.S. citizens and foreign nationals) enrolling for no more than six semester hours during a regular term.

E. Summer session. During summer sessions, nonresident tuition may be waived according to the institution’s tuition policy.

F. 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.

G. 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.

H. 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.

I. 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.

J. 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.

K. 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 certificate in New Mexico. State-funded financial aid programs with an employment component may require U.S citizenship or eligible non-citizen status.

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 (IN WEEKS)</th>
<th>1ST</th>
<th>2ND</th>
<th>3RD</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-longer</td>
<td>100%</td>
<td>100%</td>
<td>None</td>
</tr>
<tr>
<td>12-15</td>
<td>100%</td>
<td>100%</td>
<td>None</td>
</tr>
<tr>
<td>9-11</td>
<td>100%</td>
<td>75%</td>
<td>None</td>
</tr>
<tr>
<td>8</td>
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<td>None</td>
</tr>
<tr>
<td>6-7</td>
<td>100%</td>
<td>25%</td>
<td>None</td>
</tr>
<tr>
<td>3-5</td>
<td>100%</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>1-2</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

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

Once you have registered, you may drop from any course without special permission by accessing our website at www.nnmc.edu. Click on MyNNMC, and follow the directions. You may not drop a course by telephone, nor may anyone other than you or your instructor drop you from a course.

Once it has been established that you have never attended or have missed 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 drop you from the course—has the right to, but does not have to drop 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 from 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), nothing will appear on your transcript to show enrollment. If you drop during the third week of a regular term (or after the first week of a summer session), no record will appear, nor will you receive a refund.

Withdrawal from courses: deadline for full-term courses and for courses of less than a full term:

<table>
<thead>
<tr>
<th>COURSE LENGTH</th>
<th>DEADLINE TO WITHDRAW</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-7 days</td>
<td>before scheduled class</td>
</tr>
<tr>
<td>2 weeks</td>
<td>end 2nd day of course</td>
</tr>
<tr>
<td>3 weeks</td>
<td>end 1st week</td>
</tr>
<tr>
<td>4 weeks</td>
<td>end 2nd week</td>
</tr>
<tr>
<td>5 weeks</td>
<td>end 3rd week</td>
</tr>
<tr>
<td>6 weeks</td>
<td>end 4th week</td>
</tr>
<tr>
<td>7 weeks</td>
<td>end 5th week</td>
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<td>end 6th week</td>
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<td>9 weeks</td>
<td>end 7th week</td>
</tr>
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<td>10 weeks</td>
<td>end 8th week</td>
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<tr>
<td>11 weeks</td>
<td>end 9th week</td>
</tr>
<tr>
<td>12 weeks</td>
<td>end 10th week</td>
</tr>
<tr>
<td>13 weeks</td>
<td>end 11th week</td>
</tr>
<tr>
<td>14-16 weeks</td>
<td>end 12th week</td>
</tr>
</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 (cancel your registration, withdraw, be 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. 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. Any purchases made after the first 10 days 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 Petition to Graduate, 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 Northern, the Department of Education or both. The amount of the repayment will be contingent upon your costs, the amount of aid received and when the student completely withdrew from 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 Administration Building, is open Monday through Thursday, 8 am to 5 pm, and on Friday from 8 am to 12 pm and 1 pm to 5 pm. 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 (FASFA). 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: 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. Recipients 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. Recipients MUST be a NM resident who is a recent year graduate from a NM accredited public or private school is available to current year high school graduates or GED recipients who have successfully completed their 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 Bachelors 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 permit needy New Mexico residents to pursue a higher education.

**Federal College Work Study Program (FWS):** Provides employment to students who show 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 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](http://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 our web site at [www.nnmc.edu](http://www.nnmc.edu) or visit the 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](http://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](http://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 Pam Montrose, 505.747.2151, who is responsible for certifying to the VA the enrollment of eligible persons.
SATISFACTORY ACADEMIC PROGRESS (SAP) POLICY SUMMARY

The Higher Education Act of 1965, as amended, mandates institutions of higher education to establish policies to monitor the academic progress of students who apply for and/or receive federal financial aid. Northern New Mexico College makes its minimum standards applicable to all federal, state, and institutional financial aid programs for the purpose of maintaining a consistent policy for all financial aid applicants. 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 Scholarship.)

Minimum standards of Satisfactory Academic Progress (SAP)

To retain eligibility, financial aid recipients must show satisfactory progress toward a degree or certificate based on the following qualitative and quantitative standards:

1. Cumulative Grade Point Average (GPA). Students must meet the following cumulative GPA requirement to retain financial aid eligibility:
   - Undergraduate Students (0-35 earned hours) 1.8 Cumulative GPA
   - Undergraduate Students (36+ earned hours) 2.0 Cumulative GPA

2. 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

3. Successful Credit Hour Completion Rate. Each semester, 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.

   The following are considered when evaluating a student’s satisfactory academic progress:
   a. Withdrawal, incompletes, and failures are considered attempted but not earned hours.
   b. Repeated courses are included in the calculation of both attempted and earned hours. A student is allowed to repeat a course only twice.
   c. Audited courses are not allowed under financial aid.
   d. Remedial courses are not included in the calculation of both attempted and earned hours, (not to exceed 30 credit hours). Passing grades are calculated as a 2.5 grade point average for financial aid purposes.
   e. Transfer credits, including those received during consortium study, do not count in the calculation of GPA, but they are included in the calculation of both attempted and earned hours.
   f. A student is allowed to change majors but may not exceed the maximum time frame as noted in item 2.
4. Changing a Program of Study and/or Pursuing Additional Degree. Students are allowed to change their majors and/or pursue a second degree as long as they are within the maximum time frame allowed. Students are allowed up to 150% published length of the first program they declare. A student who has completed their first degree and wishes to pursue a second degree is allowed to do so if they have eligibility left. A petition must be submitted to the Financial Aid Office requesting approval.

5. Semester Satisfactory Academic Progress (SAP) Review. Academic progress will be reviewed at the end of each semester. Those students not meeting the requirements stated may be placed on Financial Aid warning, probation, or suspension (see status definitions below) during the next semester of enrollment and will receive a letter to that effect.

**Warning**: Status assigned to a student who fails to make SAP. Student may continue to receive Financial Aid for one payment period. No appeal is necessary for this status.

**Probation**: Status assigned to a student who fails to make SAP and who has appealed and has had eligibility for Financial Aid reinstated. College may impose conditions for student’s continued eligibility; student may receive aid for one payment period.

**Suspension**: Status assigned to a student who fails to make SAP after having been on probation. If appeal is approved, NNMC has determined either that a) the student will meet SAP standards by the end of the next payment period, or b) the student will be placed on an academic plan that ensures he or she can meet academic standards by a specific deadline, or c) the student can’t meet SAP standards, in which case all eligibility standards will be suspended.

6. Appeal Procedure. To appeal the financial aid suspension, a student must submit to the Financial Aid Office a signed, typed, and dated letter of appeal or a SAP Appeal Form explaining why he or she should not be suspended. SAP Appeal Forms may be obtained in the Financial Aid Office. A student may appeal due to an emergency condition (e.g., health, family, catastrophe, etc.). Documentation verifying the situation should be attached. In addition, an academic plan with an advisor’s signature will be required. The Director of Financial Aid will consider the appeal and render a decision, which will be conveyed in writing to the student. The Director's decision may be appealed to the Student Appeals Committee.

7. Reinstatement. You can raise your GPA and/or satisfy credit deficiencies by taking additional course work at Northern New Mexico College without receiving financial aid.

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 [www.nnm.edu](http://www.nnm.edu) and select the link **REFUNDS VIA 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.

FALL 2011–SUMMER 2012 CATALOG 49
Student Services Information

SPECIAL NEEDS
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 Special Needs 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, first-generation students, adults (19 and over). 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 (CAMP)
The CAMP program is a federally-funded program for farm-worker students. CAMP provides tuition, books, tutoring, academic advisement, and monthly stipends to eligible full-time students for their first year of college at Northern. For information, contact the CAMP program office at 505.747.2200.

ÉXITO: EL PUENTE—SUMMER BRIDGE PROGRAM
This intensive eight-week Accelerated Learning Academy is designed for students starting as freshmen in the fall. Its primary purpose is to help students transition from high school to college and to increase their readiness for freshman-level math and English courses. This program is free to eligible students accepted into the program.

ÉXITO: NORTHERN FIRST YEAR EXPERIENCE PROGRAM
In this learner-centered program, freshmen will benefit from linked courses, student learning communities, intensive faculty advisement, and other opportunities designed to increase academic success.

MATH CENTER
Do you need help 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 for further 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 GE 206. 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 and 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; this is not a club).

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. David Barton 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. 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. In addition, New Mexico Highlands University students must pay a fee of $25.00 per term to cover use of Northern’s library and computer labs.

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, a group study room, 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 high.

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, operated by the Developmental Studies department, 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 HEP program is a federally-funded program for farm-worker students. HEP provides GED instruction, books and supplies, career advisement, and weekly stipends to eligible students who are at least 16 years of age. For information, contact the HEP program office at the Española campus at 505.747.2144 or 505.747.5441.

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
NNMC 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 operates to provide 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 may contact the Office of Continuing Education/Community Services at 505.747.2119 on the Española campus or 575.581.4117 on the El Rito campus.

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 through using existing resources and by cooperative efforts with other educational institutions and service agencies.

STUDENT RECORDS
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 coming to 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, academic 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, the information on you 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 ([www.nnmc.edu](http://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 our website at [www.nnmc.edu](http://www.nnmc.edu).

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 photo copy of another institution’s transcript, but it will be greatly reduced in size to prevent modifications. For such a copy, you must bring a receipt from the cashier for $0.25 per page.

**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 and Records. 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 which is conducive to teaching and learning. This assures each student that a safe and healthy environment exists at Northern. To assure the attainment of this goal, Northern has developed Standards of Conduct for all students. These standards identify behavior which 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 which are 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 course work 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, of course, 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 Effectiveness at 505.747.2118.

**CAMPUS SECURITY**

All students, faculty, and staff are to report to the Executive Vice President 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.
COLLEGE OF ARTS AND SCIENCES

Mellis Schmidt, PhD, Dean
747–2213 mschmidt@nnmc.edu

The College of Arts and Sciences provides fundamental knowledge in the arts, sciences, humanities, and mathematics. The curricula are designed to introduce students to the basic method of inquiry in diverse disciplines, develop analytic abilities, engage in the scientific method, increase skills in writing and speaking, foster creativity, and broaden their perspective regarding humanity and culture.

Programs are designed to give in-depth education in diverse disciplines while providing students with a broad educational experience. The College of Arts and Sciences is committed to enhancing student self-esteem, and assist in the development of a focused, empowered, independent lifelong learner committed to serving his or her community.

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 southwestern folk 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
Mateo Pumphrey, MA  Digital & Media Arts  747.5402  mateo@nnmc.edu
Marcos Cavalcante, DM  Music  747.2293  mscavalcante@nnmc.edu
Sasha Garver, PhD  Interim Dir. of Music  747.2295  sgarver@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 (35 CRS) SEE PAGES 24–27

ART PROGRAM REQUIREMENTS (33–37 CR)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ART 105</td>
<td>Introduction to Art</td>
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<tr>
<td>ART 107</td>
<td>History of Art I</td>
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<tr>
<td>ART 110</td>
<td>Drawing I</td>
<td>3</td>
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<tr>
<td>ART 120</td>
<td>Painting I</td>
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</tr>
<tr>
<td>ART 122</td>
<td>Design Elements in Art</td>
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<tr>
<td>ART 160</td>
<td>Pottery I</td>
<td>3</td>
</tr>
<tr>
<td>ART 170</td>
<td>Photography I</td>
<td>3</td>
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<tr>
<td>ART 208</td>
<td>History of NM Art and Architecture</td>
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<tr>
<td>ART 211</td>
<td>History of Art II</td>
<td>3</td>
</tr>
<tr>
<td>ART 233</td>
<td>Printmaking I</td>
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Choose one course from the following:

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<th>Course</th>
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<tr>
<td>ART 221</td>
<td>Drawing II</td>
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<tr>
<td>ART 232</td>
<td>Painting II</td>
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<tr>
<td>ART 235</td>
<td>Watercolor</td>
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<td>ART 237</td>
<td>Sculpture</td>
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<td>ART 240</td>
<td>Portrait Painting</td>
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<tr>
<td>ART 260</td>
<td>Pottery II</td>
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<td>ART 270</td>
<td>Photography II</td>
<td>3</td>
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<tr>
<td>FA 101/L</td>
<td>Weaving I</td>
<td>7</td>
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</table>

TOTAL CREDITS 68–72

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 (35 CRS) SEE PAGES 24–27

PROGRAM REQUIREMENTS (30–31 CRS)

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<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>DANC 126</td>
<td>Modern Dance</td>
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<tr>
<td>DANC 139</td>
<td>Folklorico Dance I</td>
<td>2</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>DANC 149</td>
<td>Ballet I</td>
<td>(2)</td>
</tr>
<tr>
<td>DANC 169</td>
<td>Flamenco Dance I</td>
<td>(2)</td>
</tr>
<tr>
<td>DANC 211</td>
<td>Choreography</td>
<td>(3)</td>
</tr>
<tr>
<td>DANC 212</td>
<td>Improvisation</td>
<td>(2)</td>
</tr>
<tr>
<td>DANC 214</td>
<td>Kinesiology or HCSI 114 Kinesiology for Massage</td>
<td>(2)</td>
</tr>
<tr>
<td>DANC 240</td>
<td>Dance Appreciation</td>
<td>(3)</td>
</tr>
<tr>
<td>DANC 245</td>
<td>History of Dance</td>
<td>(3)</td>
</tr>
<tr>
<td>DANC 292</td>
<td>Dance Repertory</td>
<td>(1)</td>
</tr>
<tr>
<td>DANC 295</td>
<td>Dance Portfolio</td>
<td>(3)</td>
</tr>
<tr>
<td>THE 120</td>
<td>Introduction to Theatre I</td>
<td>(3)</td>
</tr>
<tr>
<td>THE 250</td>
<td>Stage Management</td>
<td>(2)</td>
</tr>
</tbody>
</table>

Choose one of the following (2–3 crs)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 170</td>
<td>Photography I</td>
<td>(3)</td>
</tr>
<tr>
<td>DANC 110</td>
<td>Fitness for Dancers</td>
<td>(2)</td>
</tr>
<tr>
<td>DANC 139</td>
<td>Folklorico Dance II</td>
<td>(2)</td>
</tr>
<tr>
<td>DANC 150</td>
<td>Hip-Hop and Jazz I</td>
<td>(2)</td>
</tr>
<tr>
<td>DANC 249</td>
<td>Ballet II</td>
<td>(2)</td>
</tr>
<tr>
<td>DANC 182</td>
<td>Salsa Dance I</td>
<td>(2)</td>
</tr>
<tr>
<td>DANC 250</td>
<td>Hip-Hop and Jazz II</td>
<td>(2)</td>
</tr>
<tr>
<td>DANC 282</td>
<td>Salsa Dance II</td>
<td>(2)</td>
</tr>
<tr>
<td>DANC 269</td>
<td>Flamenco Dance II</td>
<td>(2)</td>
</tr>
<tr>
<td>MUS 105</td>
<td>Music Appreciation</td>
<td>(3)</td>
</tr>
</tbody>
</table>

TOTAL CREDITS 67–69

**Associate of Arts**

**FLAMENCO MUSIC**

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 flamenco music.

**GENERAL EDUCATION (35 CRS) SEE PAGES 24–27**

**PROGRAM REQUIREMENTS (34 CRS)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 222</td>
<td>Rhythmic Fundamentals</td>
<td>(2)</td>
</tr>
<tr>
<td>MUS 102</td>
<td>Music Theory I</td>
<td>(3)</td>
</tr>
<tr>
<td>MUS 111</td>
<td>Applied Music: Guitar I</td>
<td>(2)</td>
</tr>
<tr>
<td>MUS 112</td>
<td>Applied Music: Voice</td>
<td>(2)</td>
</tr>
<tr>
<td>MUS 114</td>
<td>Applied Music: Flamenco Guitar I</td>
<td>(2)</td>
</tr>
<tr>
<td>MUS 119</td>
<td>History of Flamenco</td>
<td>(3)</td>
</tr>
</tbody>
</table>
MUS 121  Dance Accompaniment I (2)
MUS 216  Music Theory II (3)
MUS 222  Dance Accompaniment II (2)
MUS 223  Applied Music: Flamenco Guitar II (2)
MUS 227  Tradition in Flamenco (3)
MUS 231  Structural Study of Flamenco Music (2)

Choose two of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ART 105</td>
<td>Introduction to Art</td>
<td>3</td>
</tr>
<tr>
<td>ART 170</td>
<td>Photography I</td>
<td>3</td>
</tr>
<tr>
<td>DANC 240</td>
<td>Dance Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>THE 120</td>
<td>Introduction to Theatre I</td>
<td>3</td>
</tr>
<tr>
<td>THE 132</td>
<td>Stagecraft</td>
<td>3</td>
</tr>
<tr>
<td>THE 238</td>
<td>Teatro Chicana/o</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL CREDITS 69

**Associate of Arts**

**FILM & DIGITAL MEDIA ARTS (FDMA)**

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 the arts.

When you successfully complete this program, you will be prepared for entry level Film and Digital Media technical positions, as well as matriculation to a four-year degree program in Film and Digital Media Arts.

**GENERAL EDUCATION (35 CRS) SEE PAGES 24–27**

**FDMA PROGRAM REQUIREMENTS (33 CRS)**

**Program Core Requirements (24 hrs)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDMA 101</td>
<td>Intro to Digital Video Production</td>
<td>4</td>
</tr>
<tr>
<td>FDMA 107</td>
<td>Digital Media Literacy</td>
<td>3</td>
</tr>
<tr>
<td>FDMA 111</td>
<td>Digital Media Studies: Theory</td>
<td>4</td>
</tr>
<tr>
<td>FDMA 211</td>
<td>Digital Media Studies: Practices</td>
<td>4</td>
</tr>
<tr>
<td>FDMA 295</td>
<td>Digital Media Portfolio</td>
<td>3</td>
</tr>
<tr>
<td>ART 122</td>
<td>Design Elements in Art</td>
<td>3</td>
</tr>
<tr>
<td>ART 170</td>
<td>Photography I</td>
<td>3</td>
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</tbody>
</table>

**Choose 8–12 credit hrs from the following:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>FDMA 102</td>
<td>Intro Digital Audio Documentary</td>
<td>4</td>
</tr>
<tr>
<td>FDMA 110</td>
<td>Final Cut Pro: non-linear editing</td>
<td>4</td>
</tr>
<tr>
<td>FDMA 115</td>
<td>Intro to Documentary Film making</td>
<td>4</td>
</tr>
<tr>
<td>FDMA 120</td>
<td>Digital Music Production Techniques</td>
<td>4</td>
</tr>
<tr>
<td>FDMA 125</td>
<td>Digital Audio Production</td>
<td>4</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>FDMA 140</td>
<td>Digital Imaging I: Adobe Photoshop</td>
<td>4</td>
</tr>
<tr>
<td>FDMA 155</td>
<td>Digital Animation I: 3-D MAX</td>
<td>4</td>
</tr>
<tr>
<td>FDMA 175</td>
<td>Web Design I</td>
<td>4</td>
</tr>
<tr>
<td>FDMA 201</td>
<td>Advanced Digital Video Production</td>
<td>4</td>
</tr>
<tr>
<td>FDMA 240</td>
<td>Digital Imaging II</td>
<td>4</td>
</tr>
<tr>
<td>FDMA 255</td>
<td>Digital Animation II</td>
<td>4</td>
</tr>
<tr>
<td>FDMA 275</td>
<td>Web Design II</td>
<td>4</td>
</tr>
<tr>
<td>FDMA 280</td>
<td>History of Cinema</td>
<td>3</td>
</tr>
<tr>
<td>FDMA 290</td>
<td>Multimedia</td>
<td>4</td>
</tr>
<tr>
<td>FTT 103</td>
<td>Film Crew I</td>
<td>9</td>
</tr>
<tr>
<td>FTT 104</td>
<td>Film Crew II</td>
<td>9</td>
</tr>
<tr>
<td>FTT 105</td>
<td>Film Crew III</td>
<td>6</td>
</tr>
</tbody>
</table>

Choose 3 credit hours from the following:

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 110</td>
<td>Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>ART 120</td>
<td>Painting I</td>
<td>3</td>
</tr>
<tr>
<td>MUS 102</td>
<td>Music Theory I</td>
<td>3</td>
</tr>
<tr>
<td>THE 196</td>
<td>Light and Sound</td>
<td>3</td>
</tr>
<tr>
<td>THE 132</td>
<td>Stagecraft</td>
<td>3</td>
</tr>
<tr>
<td>THE 122</td>
<td>Acting I</td>
<td>3</td>
</tr>
<tr>
<td>THE 124</td>
<td>Acting for the Camera</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL CREDITS 70–74

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 (6–7 CRS)

Communications (3)

ENG 108N Basic English I (3) or a higher level course

Mathematics (3–4)

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

PROGRAM REQUIREMENTS (24 CRS)

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

TOTAL CREDITS 30–31
Bachelor of Music
JAZZ STUDIES

This program is to provide expert training in jazz performance, theory, history, analysis, arranging, composition, and performance, and to explore career opportunities in musical endeavors in northern New Mexico.

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 505.747.2295 for information, advisement, and an application packet.

GENERAL EDUCATION (35 CRS) SEE PAGES 24–27

PROGRAM REQUIREMENTS

Lower–division requirements (44 crs)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS 100</td>
<td>Musical Skills I</td>
<td>1</td>
</tr>
<tr>
<td>MUS 106</td>
<td>Musical Skills II</td>
<td>1</td>
</tr>
<tr>
<td>MUS 200</td>
<td>Musical Skills III</td>
<td>1</td>
</tr>
<tr>
<td>MUS 206</td>
<td>Musical Skills IV</td>
<td>1</td>
</tr>
<tr>
<td>MUS 125</td>
<td>History of Jazz I</td>
<td>3</td>
</tr>
<tr>
<td>MUS 126</td>
<td>History of Jazz II</td>
<td>3</td>
</tr>
<tr>
<td>MUS 128</td>
<td>Jazz Fundamentals I</td>
<td>3</td>
</tr>
<tr>
<td>MUS 129</td>
<td>Jazz Fundamentals II</td>
<td>3</td>
</tr>
<tr>
<td>MUS 130</td>
<td>Jazz Major Ensemble I</td>
<td>2</td>
</tr>
<tr>
<td>MUS 131</td>
<td>Jazz Major Ensemble II</td>
<td>2</td>
</tr>
<tr>
<td>MUS 132</td>
<td>Jazz Major Studio Instruction I</td>
<td>2</td>
</tr>
<tr>
<td>MUS 133</td>
<td>Jazz Major Studio Instruction II</td>
<td>2</td>
</tr>
<tr>
<td>MUS 151</td>
<td>Jazz Improvisation I</td>
<td>3</td>
</tr>
<tr>
<td>MUS 152</td>
<td>Jazz Improvisation II</td>
<td>3</td>
</tr>
<tr>
<td>MUS 204</td>
<td>Jazz Keyboard Skills I</td>
<td>3</td>
</tr>
<tr>
<td>MUS 228</td>
<td>Jazz Keyboard Skills II</td>
<td>3</td>
</tr>
<tr>
<td>MUS 232</td>
<td>Jazz Major Studio Instruction III</td>
<td>2</td>
</tr>
<tr>
<td>MUS 233</td>
<td>Jazz Major Studio Instruction IV</td>
<td>2</td>
</tr>
<tr>
<td>MUS 243</td>
<td>Jazz Major Ensemble III</td>
<td>2</td>
</tr>
<tr>
<td>MUS 244</td>
<td>Jazz Major Ensemble IV</td>
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</table>

Prior to upper-division studies, you must pass the upper-division Music Jury.

Upper–division requirements (50 crs)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS 313</td>
<td>Ensemble V</td>
<td>2</td>
</tr>
<tr>
<td>MUS 314</td>
<td>Ensemble VI</td>
<td>2</td>
</tr>
<tr>
<td>MUS 410</td>
<td>Ensemble VII</td>
<td>2</td>
</tr>
<tr>
<td>MUS 411</td>
<td>Major Ensemble VIII</td>
<td>2</td>
</tr>
<tr>
<td>MUS 33</td>
<td>Instrument V</td>
<td>2</td>
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<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
</tr>
<tr>
<td>-------------</td>
<td>------------------------------------------------</td>
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</tr>
<tr>
<td>MUS 332</td>
<td>Instrument VI</td>
<td>2</td>
</tr>
<tr>
<td>MUS 431</td>
<td>Instrument VII</td>
<td>2</td>
</tr>
<tr>
<td>MUS 432</td>
<td>Instrument VIII</td>
<td>2</td>
</tr>
<tr>
<td>MUS 305</td>
<td>Jazz Styles and Analysis I</td>
<td>3</td>
</tr>
<tr>
<td>MUS 325</td>
<td>Jazz Styles and Analysis II</td>
<td>3</td>
</tr>
<tr>
<td>MUS 433</td>
<td>Jazz Arranging and Composing I</td>
<td>3</td>
</tr>
<tr>
<td>MUS 434</td>
<td>Jazz Arranging and Composing II</td>
<td>3</td>
</tr>
<tr>
<td>MUS 310</td>
<td>History and Literature of Music I</td>
<td>3</td>
</tr>
<tr>
<td>MUS 324</td>
<td>History and Literature of Music II</td>
<td>3</td>
</tr>
<tr>
<td>MUS 403</td>
<td>Rhythm Styles for the Working Guitarist</td>
<td>3</td>
</tr>
<tr>
<td>MUS 404</td>
<td>Jazz Combo I</td>
<td>3</td>
</tr>
<tr>
<td>MUS 423</td>
<td>Jazz Combo II</td>
<td>3</td>
</tr>
<tr>
<td>MUS 333</td>
<td>Research Paper: Jazz Instruments I</td>
<td>1</td>
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<tr>
<td>MUS 391</td>
<td>Junior Recital</td>
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<tr>
<td>MUS 407</td>
<td>South American Guitar Styles</td>
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<tr>
<td>MUS 480</td>
<td>Graduation Research Paper</td>
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<tr>
<td>MUS 491</td>
<td>Senior Recital</td>
<td>1</td>
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</tbody>
</table>

**TOTAL CREDITS 129**

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### Associate of Arts

**MUSIC**

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 music.

**GENERAL EDUCATION (35 CRS) SEE PAGES 24–27**

**PROGRAM REQUIREMENTS (32–33 CRS)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MUS 102</td>
<td>Music Theory I</td>
<td>3</td>
</tr>
<tr>
<td>MUS 103</td>
<td>Music History and Literature I</td>
<td>3</td>
</tr>
<tr>
<td>MUS 105</td>
<td>Music Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>MUS 107</td>
<td>Introduction to Instruments</td>
<td>3</td>
</tr>
<tr>
<td>MUS 110</td>
<td>Applied Music: Piano I</td>
<td>2</td>
</tr>
<tr>
<td>MUS 111</td>
<td>Applied Music: Guitar I</td>
<td>2</td>
</tr>
<tr>
<td>MUS 112</td>
<td>Applied Music: Voice</td>
<td>2</td>
</tr>
<tr>
<td>MUS 113</td>
<td>Applied Music: Violin</td>
<td>2</td>
</tr>
<tr>
<td>MUS 211</td>
<td>Applied Music: Guitar II</td>
<td>2</td>
</tr>
<tr>
<td>MUS 216</td>
<td>Music Theory II</td>
<td>3</td>
</tr>
<tr>
<td>MUS 218</td>
<td>Music History and Literature II</td>
<td>3</td>
</tr>
<tr>
<td>MUS 22</td>
<td>Applied Music: Piano II</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL CREDITS 67–68**
Associate of Arts
SOUTHWEST FOLK ART

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

GENERAL EDUCATION (35 CRS) SEE PAGES 24–27

PROGRAM REQUIREMENTS (30 CRS)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>ART 115</td>
<td>Traditional Woodcarving</td>
<td>3</td>
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<tr>
<td>ART 130</td>
<td>Tinsmithing I</td>
<td>3</td>
</tr>
<tr>
<td>ART 150</td>
<td>Basic Jewelry and Metalworking</td>
<td>3</td>
</tr>
<tr>
<td>ART 152</td>
<td>Traditional Spanish Colonial Retablo Making</td>
<td>3</td>
</tr>
<tr>
<td>ART 156</td>
<td>Pueblo Sash Weaving</td>
<td>3</td>
</tr>
<tr>
<td>ART 180</td>
<td>Micaceous Clay I</td>
<td>3</td>
</tr>
<tr>
<td>ART 246</td>
<td>Bookmaking</td>
<td>3</td>
</tr>
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Choose one of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ART 160</td>
<td>Pottery</td>
<td>3</td>
</tr>
<tr>
<td>ART 170</td>
<td>Photography I</td>
<td>3</td>
</tr>
<tr>
<td>ART 190</td>
<td>Silversmithing</td>
<td>3</td>
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</tbody>
</table>

Electives: Approved by department chairperson (6)

TOTAL CREDITS  65

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 (18 CRS)

Communications (6)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENG 111</td>
<td>English Composition I</td>
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Choose one of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<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>
<tr>
<td>SPCH 130</td>
<td>Public Speaking</td>
<td>3</td>
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</table>

Math/Computers/Lab Sciences (6–7)

<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>
<tr>
<td>MATH Elective at/above MATH 130</td>
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<td></td>
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</tbody>
</table>

Social/Behavioral Sciences (3)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elective</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>
Humanities and Fine Arts (3)
   HIST 260 History of NM (3)

Health, Physical Education & Recreation (1 cr)
   Elective (1)

PROGRAM REQUIREMENTS (46 CRS)
   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 (1)

TOTAL CREDITS 65–66

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 (6–7 CRS)

Communications (3)
   ENG 108N Basic English I (3)

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

PROGRAM REQUIREMENTS (36 CRS)
   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 42–43
### Associate of Arts

**THEATRE**

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

**GENERAL EDUCATION (35 CRS) SEE PAGES 24-27**

**PROGRAM REQUIREMENTS (34 CRS)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>THE 120</td>
<td>Introduction to Theatre I</td>
<td>3</td>
</tr>
<tr>
<td>THE 122</td>
<td>Acting I</td>
<td>3</td>
</tr>
<tr>
<td>THE 124</td>
<td>Acting for Film, TV, and Commercial</td>
<td>3</td>
</tr>
<tr>
<td>THE 126</td>
<td>Speech and Movement for Theatre</td>
<td>2</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>THE 228</td>
<td>Performance Poetry</td>
<td>2</td>
</tr>
<tr>
<td>THE 130</td>
<td>History of Theatre</td>
<td>3</td>
</tr>
<tr>
<td>THE 132</td>
<td>Stagecraft</td>
<td>3</td>
</tr>
<tr>
<td>THE 150</td>
<td>Stage Production</td>
<td>2</td>
</tr>
<tr>
<td>THE 218</td>
<td>Acting II</td>
<td>3</td>
</tr>
<tr>
<td>THE 224</td>
<td>Playwriting</td>
<td>3</td>
</tr>
<tr>
<td>THE 238</td>
<td>Teatro Chicana/o</td>
<td>3</td>
</tr>
</tbody>
</table>

*Choose six (6) credit hours from the following:*

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>THE 134</td>
<td>Introduction to Costuming</td>
<td>2</td>
</tr>
<tr>
<td>THE 196</td>
<td>Introduction to Light and Sound</td>
<td>3</td>
</tr>
<tr>
<td>THE 220</td>
<td>Introduction to Theatre II</td>
<td>3</td>
</tr>
<tr>
<td>THE 225</td>
<td>Creative Drama Techniques for the Classroom K-12</td>
<td>3</td>
</tr>
<tr>
<td>THE 226</td>
<td>Directing &amp; Play Production</td>
<td>2</td>
</tr>
<tr>
<td>THE 250</td>
<td>Stage Management</td>
<td>2</td>
</tr>
<tr>
<td>THE 290</td>
<td>Design for the Theatre</td>
<td>3</td>
</tr>
<tr>
<td>THE 296</td>
<td>Advanced Light &amp; Sound</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL CREDITS 69**
Associate of Arts
TECHNICAL THEATRE

This program is designed to maximize transfer of credit to a four-year college or university. 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 (35 CRS) SEE PAGES 24-27

PROGRAM REQUIREMENTS (34 CRS)

THE 120 Introduction to Theatre I (3)
THE 122 Acting I (3)
THE 124 Acting for Film, TV, and Commercial (3)
THE 130 History of Theatre (3)
THE 132 Stagecraft (3)
THE 134 Introduction to Costuming (2)
THE 150 Stage Production (2)
THE 196 Introduction to Light and Sound (3)
THE 290 Design for the Theatre (3)
THE 296 Advanced Light & Sound (3)

Choose six (6) credit hours from the following:
THE 126 Speech & Movement (2)
THE 218 Acting II (3)
THE 220 Introduction to Theatre II (3)
THE 224 Playwriting (3)
THE 225 Creative Drama Techniques for the Classroom K-12 (3)
THE 226 Directing & Play Production (2)
THE 228 Performance Poetry (2)
THE 250 Stage Management (2)

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 a certificate or 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 your personal and professional needs; they develop critical thinking skills and help you develop into an organized, focused, empowered, and independent lifelong learner.

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 degree and associate of applied science programs designed to help you prepare for employment and/or transfer to a four-year program.

Lori Franklin, MA  Chairperson  747-2215  lorig@nnmc.edu
David Barton, PhD  English/Humanities  747-2217  dbarton@nnmc.edu
Tim Crone, MA  Anthropology Sociology  747-2111  tcrone@nnmc.edu
Matthew Martinez, PhD  Pueblo Indian Studies  747-5488  martinez@nnmc.edu
Louis Schiano, PhD  Humanities  747-2480  lschiano@nnmc.edu
Mellis Schmidt, PhD  Psychology  747-2213  mschmidt@nnmc.edu
Patricia Trujillo, PhD  English  747-5448  patriciatrujillo@nnmc.edu
Heather Winterer, PhD  English/Humanities  747-2247  hwinterer@nnmc.edu
Pamela Lapcevic, MA  Developmental Studies  747-2219  plapcevic@nnmc.edu
Associate of Arts
CRIMINAL JUSTICE

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

GENERAL EDUCATION (35 CRS) SEE PAGES 24–27

Area I: Communications (9 hrs)

Area II: Mathematics (3 crs)
   MATH 145  Introduction to Probability and Statistics (3)
   or
   MATH 150  College Algebra (3)

Area III: Laboratory Science (8 crs)

Area IV: Social/Behavioral Sciences (9 crs)
   PSY 105  General Psychology (3)
   SOC 101  Introduction to Sociology (3)
   Choose one additional survey course from the list on page 25-26.

Area V: Humanities and Fine Arts (6 crs)
   Choose two survey courses from the list on page 26-27.

Health, Physical Education & Recreation (1 cr)
   Elective (1)

PROGRAM REQUIREMENTS (31 CRS)
   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)
   Elective (3)

TOTAL CREDITS  64
Associate of Arts
GENERAL STUDIES

This program, which allows you to take courses for personal growth or for transfer to a four-year program, allows a great deal of flexibility in choosing courses. You can work with an advisor to put together a degree major not offered by Northern, thus establishing a solid foundation of courses to prepare you for a baccalaureate program.

GENERAL EDUCATION (35 CRS) SEE PAGES 24–27

Health, Physical Education & Recreation (2 Crs)
   Elective (2)

PROGRAM REQUIREMENTS (27 CRS)

General Education Electives (24)*
*Must be taken from the following discipline areas and must include at least
   3 crs Fine Arts (lecture only):

Area I: Communications
Area II: Mathematics
Area III: Laboratory Sciences
Area IV: Social/Behavioral Sciences
Area V: Humanities and/or Fine Arts (lecture only)
   Electives (from any discipline) (3)

TOTAL CREDITS  64

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.

GENERAL EDUCATION (35 CRS) SEE PAGES 24–27

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

Area II: Mathematics (3 crs)
   MATH 145  Introduction to Probability and Statistics (3)
   or
   MATH 150  College Algebra (3)
Area III: Laboratory Science (8 crs)

BIOL 110/L Survey of Modern Biology w/lab (4)

Choose one of the following survey courses (with labs):**

ASTR 110/L Introduction to Astronomy w/lab (4)
CHEM 110/L Introduction to Chemistry w/lab (4)
ES 112/L Environmental Science w/Lab (4)
GEOL 101/L Physical Geology w/Lab (4)
GEOL 102/L Historical Geology w/Lab (4)
PHYS 110/L Introduction to Physics w/Lab (4)

** You may substitute BIOL 201/L for BIOL 110/L.

Area IV: Social/Behavioral Sciences (9 crs)

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 crs)

You must select two survey courses from the list on pages 26-27.

PROGRAM REQUIREMENTS (33 CRS)

PSY 210 Theories of Personality & Counseling (3)
PSY 217 Interviewing and Assessment (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 105 Introduction to Human Services (3)
SOC 140 Sociology of Substance Abuse (3)
SOC 216 Ethnic and Intercultural Relations (3)
SOC 225 Marriage & Family (3)

TOTAL CREDITS 65
Bachelor of Arts
INTEGRATED STUDIES in the
HUMANITIES and SOCIAL SCIENCES

This degree will prepare you 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 if you wish to pursue advanced degrees in various fields including psychology, law, and cultural anthropology. This integrated program works cumulatively as you reflect on various ways of understanding the human being and human purpose while developing your analytical and communication skills. This is an academic degree designed to provide not only the skills and knowledge promised by a liberal arts education but also the encouragement you will need to use the skills and knowledge required to become an effective and inspired leader.

GENERAL EDUCATION (35 CRS) SEE PAGES 24–27

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

Area II: Mathematics (3 crs)
- MATH 145 Introduction to Probability and Statistics (3) **
  or
- MATH 150 College Algebra (3)
* * Students choosing the emphasis in Psychology must take MATH 145; students choosing other emphases may choose MATH 150.

Area III: Laboratory Science (8 crs)

Area IV: Social/Behavioral Sciences (6–9 crs) *
- PIS 200 Introduction to Pueblo Indian Studies (3)
- PSY 105 General Psychology (3)

Area V: Humanities and Fine Arts (6–9 crs) *
*You must complete at least 15 crs * between areas IV & V, maintaining at least two disciplines in each area.

INTEGRATED STUDIES CORE PROGRAM REQUIREMENTS (29 CRS)
- PHIL 250 Critical Thinking (3)
- HSS 310 Perspectives on New Mexico History and Culture (4)
- HSS 311 Readings in the Social Sciences (4)
- HSS 320 Genesis of Mathematics and Science (4)
- HSS 388 Inquiry Project (3)
- HSS 414 Humanity and Creativity (4)
- HSS 421 History, Literature, Art, and Philosophy (4)
- HSS 488 Senior Workshop (3)
In addition to the Core Requirements, you must choose one of the following emphases or majors: Humanities, Psychology, or Pueblo Indian Studies.

**HUMANITIES EMPHASIS (24 CRS)**
You must complete a total of 24 crs, including at least 3 crs (i.e., one course) from each of the three groups below. Of the 24 crs in this emphasis, at least 15 crs must be in upper-division courses. Topic courses and independent studies may qualify in any group, with departmental approval.

**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 200 Comparative Religion (3)
- HUM 460 Mythic Ways of Knowing (3)

**Group C: Literature**
- ENG 230 World Literature I (3)
- ENG 231 World Literature II (3)
- ENG 265/PIS 265 Native American Literature I (3)
- ENG 266/PIS 266 Native American Literature II (3)
- ENG 270 Children’s Literature (3)
- ENG 290 Study in Literature (3)
- ENG 292 Women’s Literature (3)
- ENG 296 Film as Literature (3)
- ENG 318 Oral Traditions: Folk Stories (3)
- ENG 456 Shakespearean Plays (3)
- ENG 368 Ecocriticism (3)

**Electives from other Emphases (9 crs, 3 of which must be upper division)**
Regardless of your choice of emphasis, you must complete 9 credits in other emphases, with at least 3 credits taken in each of the other emphasis. Three credits of these electives must be in upper-division work.

**Additional Electives (30 crs)**
The remaining 30 credits for the baccalaureate degree (totaling 128 credits) in this emphasis are electives. No more than 4 hours of HPER, and no more than 6 studio hours, may count toward the BAIS.
PSYCHOLOGY EMPHASIS (30 CRS)
For this emphasis, you must complete the following courses. Topic courses and independent studies may qualify in any group for substitute credits, with departmental approval. This emphasis articulates with the existing two-year degrees: the AA and AAS in Substance Abuse Counseling and with the AA in Human Services in the Social Sciences.

PSY 210 Theories of Personality (3)
PSY 232 Abnormal Psychology (3)
PSY 260 Family Systems Theory (3)
PSY 270 Social Psychology (3)
PSY 290 Developmental Psychology (3)
PSY 301 Biopsychology (3)
PSY 321 Research Design in Psychology (3)
PSY 410 Comparative Perspectives in Psychology (3)
PSY 411 Human Ecology (3)
PSY 421 Research in Psychology (3)

Electives from other Emphasizes (9 crs, 3 of which must be upper division)
Regardless of your choice of emphasis, you must complete 9 credits in other emphases, with at least 3 credits taken in each of the other emphasis. Three credits of these electives must be in upper-division work.

Additional Electives (24 crs)
The remaining 24 credits for the baccalaureate degree (totaling 128 credits) in this emphasis are electives. No more than 4 hours of HPER, and no more than 6 studio hours, may count toward the BAIS.

PUEBLO INDIAN STUDIES EMPHASIS (24 CRS)
Twenty-four credit hours, at least 12 upper division, must be completed from the courses listed below. Topics courses and independent studies may qualify may qualify for substitute credits with permission of the department chair. (This emphasis articulates with the A.A. in Pueblo Indian Studies.)
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, and 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)
Electives from other Emphases (9 crs, 3 of which must be upper division)
Regardless of your choice of emphasis, you must complete 9 credits in other emphases, with at least 3 credits taken in each of the other emphasis. Three credits of these electives must be in upper-division work.

Additional Electives (30 crs)
The remaining 30 credits for the baccalaureate degree (totaling 128 credits) in this emphasis are electives. No more than 4 hours of HPER, and no more than 6 studio hours, may count toward the BAIS.

TOTAL CREDITS 128
Associate of Applied Science  
LIBRARY TECHNOLOGY

Northern’s Library Technology program will prepare you for rewarding entry-level career opportunities in public, school, academic, or special libraries.

GENERAL EDUCATION (25 CRS)

Communications (6 hrs)
   ENG 111 English Composition I (3)
   SPCH 30 Public Speaking (3)

Math/Computers/Lab Sciences (10 hrs)
   Laboratory Science Elective with lab (4)
   BCIS 102 Computer Literacy (3)

Choose one of the following two courses:
   MATH 130 Intermediate Algebra (3)
   MATH 145 Introduction to Probability and Statistics (3)

Social/Behavioral Sciences (3 hrs)
   PSY 105 General Psychology (3)

Humanities and Fine Arts (6 hrs)
   HUM 101 Humanities I (3)
   Elective (3)

PROGRAM REQUIREMENTS (37–40 CRS)

   BA 202 Principles of Management (3)
   ENG Chose either ENG 280 or 290 (3)
   LT 201 Technical Services -Cataloging (3)
   LT 202 Technical Services -Acquisition (3)
   LT 205 Library Public Services (3)
   LT 207 Basic Reference Mats (3)
   LT 209 Media Services (3)
   OA 104 Principles of Keyboarding (3)

LT Electives: Choose two of the following four courses:
   LT 213 Special Libraries (3)
   LT 215 Public Libraries (3)
   LT 217 School Libraries (3)
   LT 219 Academic Libraries (3)

Electives: Choose three of the following seven courses:
   ART 105 Introduction to Art (3)
   ENG 112 English Composition II (3)
   ENG 116 Technical Writing (3)
   HIST 260 History of New Mexico (3)
Certificate

LIBRARY TECHNOLOGY

This program is designed to prepare you to pursue a degree for rewarding career opportunities in public, school, academic, or special libraries.

GENERAL EDUCATION (7 CRS)

Communications (4 hrs)

ENG 110 Writing the Research Paper (1)
ENG 111 English Composition I (3)

Mathematics (3 crs)

Choose one of the following two courses:
MATH 130 Intermediate Algebra (3)
MATH 145 Introduction to Probability and Statistics (3)

PROGRAM REQUIREMENTS (28–30 CRS)

CS 102 Computer Literacy (3)
ENG Choose either ENG 280 or 290 (3)
LT 201 Technical Services–Cataloging (3)
LT 202 Technical Services–Acquisitions (3)
LT 205 Library Pub Services (3)
LT 207 Basic Reference Materials (3)
LT 209 Media Services (3)
OA 104 Principles of Keyboarding (3)

LT Electives: Choose two of the following four courses:

LT 213 Special Libraries (3)
LT 215 Public Libraries (3)
LT 217 School Libraries (3)
LT 219 Academic Libraries (3)

TOTAL CREDITS 35–37
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 you apply to Northern for this major, you must supply the Registrar a copy of your Law Enforcement Academy certificate of completion in order to obtain credit for the training.

GENERAL EDUCATION (21 CRS)

Communications (6 crs)

ENG 111  English Composition I (3)
SPCH 130  Public Speaking (3)

Math/Computers/Lab Sciences (6 crs)

BCIS 102  Computer Literacy (3)
MATH 145  Intro to Probability & Statistics (3)

Social/Behavioral Sciences (6 crs)

PSCI 210  State and Local Government (3)
SOC 101  Introduction to Sociology (3)

Humanities (3 crs)

PHIL 220  Ethics (3)

PROGRAM REQUIREMENTS (43 CRS)

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 crs):

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  64
Associate of Arts
PUEBLO INDIAN STUDIES

This program is committed to broadening your 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 you 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 give you 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.

GENERAL EDUCATION (35 CRS) SEE PAGES 24–27

PROGRAM REQUIREMENTS (30 CRS)

Choose 30 credits from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIS 200</td>
<td>Introduction to Pueblo Indian Studies</td>
<td>3</td>
</tr>
<tr>
<td>PIS 220</td>
<td>Pueblo arts, Crafts, and Culture</td>
<td>3</td>
</tr>
<tr>
<td>PIS 240</td>
<td>Research Topics in Pueblo Indian Studies</td>
<td>1-6</td>
</tr>
<tr>
<td>PIS 242</td>
<td>Pueblo Indian Women’s Lives</td>
<td>3</td>
</tr>
<tr>
<td>PIS 250</td>
<td>Internship in Tribal Leadership I</td>
<td>3</td>
</tr>
<tr>
<td>PIS 251</td>
<td>Internship in Tribal Leadership II</td>
<td>3</td>
</tr>
<tr>
<td>PIS 252</td>
<td>Pueblo Indian History</td>
<td>3</td>
</tr>
<tr>
<td>PIS 256</td>
<td>Pueblo Indian Government</td>
<td>3</td>
</tr>
<tr>
<td>PIS 258</td>
<td>Indian Gaming, Entrepreneurship, Sovereignty, and Casinos</td>
<td>3</td>
</tr>
<tr>
<td>PIS 265/ENG 265</td>
<td>Native American Literature I</td>
<td>3</td>
</tr>
<tr>
<td>PIS 266/ENG 266</td>
<td>Native American Literature II</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL CREDITS  65
Certificate
RESIDENTIAL 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.

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

GENERAL EDUCATION (9–12 CRs)

Communications (3)

ENG 109N Basic English II (3) or a higher level English course.

Humanities (3–6 crs)

Choose 1 or 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)

Math/Computers/Lab Sciences (3–4 crs)

MATH 100N Fundamentals of Mathematics (4) or higher level math course.

If you complete a level of math higher than MATH 100N, you will need to take 2 courses from the Humanities area.

PROGRAM REQUIREMENTS (21 CRs)

HSCI 109 CPR/First Aid (.5)
PSY 150 Personal Growth (3)
PSY 215 Basic Counseling Techniques (3)
PSY 220 Topics in Psychology: Learning Skills Application (3)
PSY 229 Adolescence Psychology (3)
PSY 260 Family Systems Theory and Counseling Application (3)
SOC 140 Sociology of Substance Abuse (3)

TOTAL CREDITS 30–34

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 you for licensing as a Substance Abuse Counselor in New Mexico.
GENERAL EDUCATION (35 CRS) SEE PAGES 24–27

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

Area II: Mathematics (3 crs)
- MATH 145 Introduction to Probability and Statistics (3)

Area III: Laboratory Science (8 crs)
- BIOL 110/L Survey of Modern Biology w/Lab (4)
  You may substitute BIOL 201/L for BIOL 110/L.

Choose one other survey course (with lab) from the following list:
- ASTR 110/L Introduction to Astronomy w/Lab (4)
- CHEM 110/L Introduction to Chemistry w/Lab (4)
- ES 112/L Environmental Science w/Lab (4)
- GEOL 101/L Physical Geology w/Lab (4)
- GEOL 102/L Historical Geology w/Lab (4)
- PHYS 110/L Introduction to Physics w/Lab (4)

Area IV: Social/Behavioral Sciences (9 crs)
- 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 crs)
You must select two survey courses from at least two different discipline areas from the list on pages 26-27.

PROGRAM REQUIREMENTS (33 CRS)
- PSY 210 Theories of Personality and Counseling Applications (3)
- PSY 217 Interviewing and Assessment (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 68
Associate of Applied Science
SUBSTANCE ABUSE COUNSELOR

This program is designed to prepare you to become a Substance Abuse Counselor.

GENERAL EDUCATION (25 CRS)

Communications (6 crs)
   ENG 111   English Composition I (3)
   Choose one of the following
   ENG 112   English Composition II (3)
   SPCH 130  Public Speaking (3)

Math/Computers/Lab Sciences (7 crs)
   Choose one of the following two BIOL courses:
   BIOL 110/L Survey of Modern Biology with lab (4) or
   BIOL 201/L Principles of Molecular and Cell Biology with lab (4)
   Choose one of the following:
   BCIS 102   Computer Literacy (3)
   MATH 145  Introduction to Probability and Statistics (3) or
   MATH 150  College Algebra (3)

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

Humanities and Fine Arts (3 crs)
   Elective from list on pages 26-27.

PROGRAM REQUIREMENTS (39 CRS)

   PSY 210  Theories of Personality and Counseling Applications (3)
   PSY 217  Interviewing and Assessment (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  64
Department of Math and Science

The Department of Mathematics and Science offers Bachelor of Science degrees in Biology, Environmental Science, and Mathematics; Associate Degree programs in Biology, Laboratory Biotechnology, Environmental Science, Natural Resources Range Ecology Management, Pre-Forestry, Radiation Protection, Science, Chemical Technology, and a Certificate in Environmental Monitoring.

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  747-2174  davytorres@nnmc.edu
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Director, Biology

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Kalaiappan Chidambaram, PhD  747-2253  kc@nnmc.edu
Biology, Electrochemistry

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Emmanuel Nzakwe, PhD  747-2238  nzakwe@nnmc.edu
Physiology

Virginia Salas, PhD  747-5474  vmsalas@nnmc.edu
Microbiology
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.

GENERAL EDUCATION (35 CRS) SEE PAGE 24–27

Area I: Communications (9 crs)

Area II: Math (3 crs)

Area III: Laboratory Sciences (8 crs)

BIOL 201/L Introduction to Molecular and Cell Biology with lab (4)
BIOL 202/L Principles of Genetics with lab (4)

Area IV: Social and Behavioral Sciences (6-9 crs)*

Area V: Humanities and Fine Arts (6-9 crs) *

PHIL 220 Ethics (3)

Elective (3-6) You must select courses from one other discipline area from the Area V courses shown on pages 26-27.

*You must complete at least 15 crs between areas IV and V, maintaining at least two disciplines in each area.

Health, Physical Education & Recreation (1 cr)

Elective (1)

PROGRAM REQUIREMENTS (74 CRS)

Biology Core Curriculum (12)

BIOL 151 Science and Society with Lab (4)
BIOL 203 Ecology and Evolution with Lab (4)
BIOL 204 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 CRS)  

Mathematics (10)  
MATH 145  Introduction to Probability and Statistics (3)  
MATH 155  Trigonometry (3)  
MATH 162  Calculus I (4)  

Chemistry (15)  
CHEM121/L General Chemistry I with lab (4)  
CHEM122/L General Chemistry II with lab (4)  
CHEM301/L Organic Chemistry I with lab (4)  
CHEM341  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 CRS)

Minors concentrations are not required, but you may choose one of the following (20 crs):

Mathematics (20)
    MATH 163  Calculus II (4)
    MATH 264  Calculus III (4)
    Choose any four 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 credit hours 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  130

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.

GENERAL EDUCATION (35 CRS)

Area I: Communications (9 crs)

    ENG  111  English Composition I (3)
    Prerequisite: ENG 109 or adequate score on Course Placement Evaluation (CPE)
    SPCH  130  Public Speaking (3)
    Prerequisite: ENG 109 or adequate score on CPE

Choose one of the following courses:

    ENG  112  English Composition II (3)
    Prerequisite: ENG 111
    ENG  116  Technical Writing (3)
    Prerequisite: ENG 111
Area II: Mathematics (3 crs)

MATH 145  Introduction to Probability & Statistics (3)
  Prerequisite: MATH 130

MATH 150  College Algebra (3)
  Prerequisite: MATH 130 or adequate score on CPE

MATH 151  Conceptual Mathematics*

MATH 155  Trigonometry (3)
  Prerequisite: MATH 150 or adequate score on CPE

MATH 162  Calculus I (4)
  Prerequisite: MATH 155 or MATH 160

MATH 163  Calculus II (4)
  Prerequisite: MATH 162 or adequate score on CPE

MATH 264  Calculus III (4)
  Prerequisite: MATH 163 or adequate score on CPE

*Conceptual Mathematics will satisfy the mathematics requirements for all AA/BA/BBA/BM degrees.

Area III: Laboratory Sciences (8 crs)

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 and Behavioral Sciences (6–9 crs)*
  Prerequisite: ENG 109 or adequate score on CPE.

You must select courses from at least two different discipline areas from the following:

ANTH 101/L  Physical Anthropology w/Lab (4)

ANTH 102  Introduction to Social/Cultural Anthropology (3) (Fall)

ANTH 111  Language and Culture (3)

ANTH 207  Cultures of New Mexico (3)

ANTH 110  Indian Culture of the Southwest (3)

ECON 200  Macroeconomics (3)

ECON 201  Microeconomics (3)

GEOG 111  World Geography (3)

PSCI 110  The Political World (3)

PSCI 120  Contemporary Political Issues (3)

PSCI 200  American Politics (3)

PSCI 210  State and Local Government (3)

PSCI 212  The American Presidency (3)

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 crs)*

Prerequisite: ENG 109 or adequate score on the Course Placement Evaluation.

PHIL 220 Ethics (3)

You must select courses from at least one other discipline area from the following list:

ART 105 Introduction to Art (3)
ART 107 History of Art I (3)
ART 208 History of NM Art & Architecture I (3)
ART 211 History of Art II (3)
DANC 240 Dance Appreciation (3)
ENG 270 Children’s Literature (3)
Prerequisite: ENG 111

ENG 262 Literature of the Southwest (3)
Prerequisite: ENG 112

ENG 265 Native American Literature I (3)
Prerequisite: ENG 111

ENG 266 Native American Literature II (3)
Prerequisite: ENG 111

ENG 280 Readings in Literature (3)
Prerequisite: ENG 111

ENG 290 Study of Literature (3)
Prerequisite: ENG 111

ENG 294 Mythology (3)
Prerequisite: ENG 111

HIST 101 Western Civilization I (3)
HIST 102 Western Civilization II (3)
HIST 161 History of the U.S. to 1877 (3)
HIST 162 History of the U.S. from 1877 (3)
HIST 200 History of World Religions (3)
HIST 220 Southwestern Women’s History (3)
HIST 230 Chicano Experience in the US (3)
HIST 250 American Indian History (3)
HIST 260 History of New Mexico (3)
HUM 105 Humanities and the Southwest (3)
HUM 311 Readings in the Social Sciences (3)
HUM 414 Humanity and Creativity (3)
HUM 421 History, Literature, Art, and Philosophy (3)
MUS 103 Music History & Literature I (3)
MUS 105 Music Appreciation (3)
MUS 218 Music History & Literature II (3)
PHIL 110  Introduction to Philosophical Problems (3)  
PHIL 111  History of Philosophy (3)  
PHIL 150  Critical Thinking (3)  
PIS  200  Introduction to Pueblo Indian Studies (3)  
THE  120  Introduction to Theatre I (3)  
THE  130  History of Theatre (3)  
*Plus topic courses with advisor's approval.

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

**Students in associate degree programs are advised that upper-division courses are not covered under financial aid.

Health, Physical Education & Recreation (1 cr)  
Electives (1)

PROGRAM REQUIREMENTS (35 CRS)

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 crs 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 (28 CRS)

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

Math/Computer/Laboratory Science (12)
  BCIS 102 Computer Literacy (3)
  MATH 145 Introduction to Probability & Statistics (3)
  MATH 150 College Algebra (3)
  MATH 155 Trigonometry (3)

Social/Behavioral Sciences (3)
  SOC 211 Small Group Communications Studies (3)

Humanities and Fine Arts (3)
  PHIL 220 Ethics (3)

Health, Physical Education & Recreation (1 cr)
  Elective (1)

PROGRAM REQUIREMENTS (37 CRS)
  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 (3)
  CHEM 260 Standard Laboratory Protocols (4)
  CS 105 Introduction to Databases (3)
Bachelor of Science
ENVIRONMENTAL SCIENCE

GENERAL EDUCATION (58 CRS)

Area I: Communications (9 crs)

ENG  111   English Composition I (3)
SPCH 130   Public Speaking (3)

Choose one of the following two courses:

ENG  112   English Composition II (3)
ENG  116   Technical Writing (3)

Area II: Mathematics (10 crs)

MATH 145   Introduction to Probability and Statistics (3)
MATH 150   College Algebra (3)
MATH 162   Calculus I (4)

Area III: Laboratory Sciences (24 crs)

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 and Behavioral Sciences (6-9)*

Electives from page 25-26 (6-9 crs)*

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

PHIL  220   Ethics (3)

Electives from pages 26-27 (3-6).

Health, Physical Education & Recreation (1 cr)

Electives (1)
PROGRAM REQUIREMENTS (33 CRS)

ES 112/L Introduction to Environmental Sciences I with Lab (4)
ES 125 Principles of Physical Hydrology (3)
ES 203 Introduction to GIS/GPS and Cartography (2)
ES 307 Atmospheric Science (3)
ES 320 Environmental Ethics (3)
ES 338 Environmental Law and Regulations (3)
ES 350 Watershed Hydrology and Management (3)
ES 401 Community Participation in Environmental Planning (3)
ES 412 Environmental Health and Toxicology (3)
ES 415 Energy and Resource Development (3)
ES 480 Senior Capstone—Field Experience (3)

YOU MUST CHOOSE ONE OF THE FOLLOWING MAJORS (33–34 CRS):

Agriculture (35 crs)

BIOL 360/L Botany with Lab (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, and Agriculture in Industrial Development (3)
Electives (3 crs) Upper-division courses (as approved by dept. advisor)

Environmental Science and Monitoring (35 crs)

ES 121 Environmental Air Monitoring (3)
ES 330 Principles of Environmental and Occupational Health (3)
RAD 234L Introduction to Radiation Science and Technology (4)
ES 315 Technology and the Environment (3)
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 crs) Upper-division courses (as approved by dept. advisor)
Concentration Area: Natural Resources Science and Management (37 crs)

- ES 308 Invasive Species (3)
- ES 103 Introduction to Natural Management (3)
- FOR 113 Dendrology (3)
- ES 310 Mensuration and Biometrics (3)
- ES 317 Rangeland Management (3)
- ES 318 Silviculture (3)
- ES 404 Forest Health, Restoration, and Management (3)
- ES 410/L Soil Testing and Interpretation (4)
- ES 411 Soil Management and Fertility (3)
- ES 414 Wildland Fire Management (3)
- Electives (3 crs) Upper-division courses (as approved by dept. advisor)

TOTAL CREDITS 128

Associate of Applied Science
ENVIRONMENTAL SCIENCE

This program is designed to provide the technical skills which will enable you to competently gather, record, and analyze critical environmental data and perform simple health risk assessment evaluations.

GENERAL EDUCATION (29 CRS)

Communications (9)

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

Math/Computers/Lab Sciences (14)

- 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)

Social/Behavioral Sciences (3)

- SOC 211 Small Group Communications Studies (3)

Humanities (3)

- PHIL 220 Ethics (3)

Health, Physical Education & Recreation (1 cr)

Electives (1)

PROGRAM REQUIREMENTS (39 crs)

- BIOL 210/L Microbiology with lab (4)
- CHEM 121/L General Chemistry I with lab (4)
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 (7 CRS)

Communications (3)
ENG 108N Basic English I (3)

Math/Computers/Lab Sciences (4)
MATH 102N Basic Algebra (4) or MATH 103N (4) or higher level math.

PROGRAM REQUIREMENTS (11 CRS)
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 18
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.

GENERAL EDUCATION (21 CRS)

Communications (6)

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<td>ENG 116</td>
<td>Technical Writing</td>
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Math/Computers/Lab Sciences (6)

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<td>MATH 150</td>
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Social/Behavioral Sciences (3)

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Humanities (6)

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<tr>
<td>PHIL 110</td>
<td>Introduction to Philosophical Problems</td>
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<td>PHIL 220</td>
<td>Ethics</td>
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Health, Physical Education & Recreation (1 cr)

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PROGRAM REQUIREMENTS (43 CRS)

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<tr>
<td>BIOL 201/L</td>
<td>Principles of Molecular and Cell Biology with lab</td>
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<td>BIOL 202/L</td>
<td>Principles of Genetics with lab</td>
<td>4</td>
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<td>BIOL 160/L</td>
<td>Biotechnology Seminar I</td>
<td>4</td>
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<td>BIOL 210/L</td>
<td>Microbiology with lab</td>
<td>4</td>
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<tr>
<td>BIOL 260/L</td>
<td>Biotechnology Seminar II with lab</td>
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<td>BIOL 290</td>
<td>Undergraduate Research Experience I</td>
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<td>CHEM 121/L</td>
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<td>General Chemistry II with lab</td>
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<td>CHEM 210/L</td>
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<td>ES 134</td>
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TOTAL CREDITS  65
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 and
2) a cumulative GPA of at least 2.50.

GENERAL EDUCATION (35 CRS) SEE PAGES 24–27

Area I: Communications (9)
Area II: Mathematics (3)
Area III: Laboratory Science (8)
Area IV: Social/Behavioral Sciences (6-9) *
    PSY 105   General Psychology (3)
    SOC 101  Introduction to Sociology (3)
    Elective (3-6) You must select courses from one other discipline area from the Area IV courses shown on pages 25-26.

Area V: Humanities and Fine Arts (6-9)*
* You must complete at least 15 crs between areas IV and V, maintaining at least two disciplines in each area.

Health, Physical Education & Recreation (1 cr)
    Elective (1)

PROGRAM REQUIREMENTS (30 CRS)

Required Supporting Courses in Physics and Chemistry (8)
    CHEM121/L General Chemistry I with Lab (4)
    and
    CHEM122/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
    CHEM121/L General Chemistry I with Lab (4)
    and
    PHYS 121/L Applied Physics I with Lab (4)

Required supporting course in Computer Science (3)
    CS 142  Computer Science I (3)

CORE CURRICULUM (19)
    MATH 162  Calculus I (4)
    MATH 163  Calculus II (4)
MATH 264 Calculus III (4)  
MATH 314 Linear Algebra with Applications (3)  
MATH 401 Advanced Calculus I (4)

MAJOR (27 CRS)

Applied Mathematics (24)
- MATH 311 Vector Analysis (3)
- MATH 312 Partial Differential Equations for Engineering (3)
- MATH 313 Complex Variables for Engineering (3)
- MATH 316 Applied Ordinary Differential Equations (3)
- MATH 327 Discrete Structures (3)
- MATH 345 Elements of Applied Statistics and Probability Theory (3)
- MATH 375 Introduction to Numerical Computing (3)
- 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)

Along with your major, you may complete a minor if you wish. For the BS in Mathematics, we suggest one of the following four minors. Should you choose not to pursue a minor, you must complete an additional 11 crs of approved upper-division courses in order to fulfill our requirement of at least 42 crs of upper-division coursework.

General Engineering (21 crs)
- CE 202 Engineering Statics (3)
- CE 302 Mechanics of Materials (3)
- EE 203L Circuit Analysis (3)
- ME 160L Mechanical Engineering Design I (3)
- ME 301 Thermodynamics (3)
- ME 306 Dynamics (3)
- ME 317 Fluid Mechanics (3)

Information Technology (23 crs)
- IT 150 Unix OS and Scripting (4)
- IT 210 Information Technology (3)
- IT 220 Network and Server Software (4)
- IT 330 Networking (3)
- IT 341 Distributed Systems (3)
- IT 342 Wireless and Mobile Computing (3)
- IT 350 Database Management (3)

Chemistry (19 crs)
- 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 minor, you will not have taken CHEM 121/L and 122/L as part of the “supporting courses” on page 98.

Physics (20 crs)
- PHYS 215/L Engineering Physics with Lab (4)
- PHYS 262/L General Physics with Lab (4)
- PHYS 30 Thermodynamics and Statistical Methods (3)
- PHYS 302 Optics (3)
- PHYS 330 Introduction to Modern Physics (3)
- PHYS 405 Electricity and Magnetism (3)

In order to fulfill the graduation requirement of 128 credit hours for the program, you must enroll in an additional 15-18 credits of approved electives.

TOTAL CREDITS 128

Associate of Applied Science

NATURAL RESOURCES—
RANGE ECOLOGY MANAGEMENT

This program is designed to provide entry-level skills for employment with the National Park Service or with other state and federal natural resource agencies. In addition, when you complete this program, you will have obtained the necessary courses to transfer to a four-year program to further pursue a degree in the field of range ecology.

GENERAL EDUCATION (46 Crs)

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

Math/Computers/Lab Sciences (29)
- 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)
- 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)
- Electives from pages 25-26 (6)
Area V: Humanities and Fine Arts (3)
  PHIL 220 Ethics (3)

Health, Physical Education & Recreation (1 cr)
  Electives (1)

PROGRAM REQUIREMENTS (20 CRS)
  ES 134 OSHA Health/Safety (3)
  ES 120 Forest and Range Ecology (3)
  ES 203 Introduction to GIS/GPS and Cartography (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 Practicum in Environmental Science (1)

TOTAL CREDITS 68

Associate of Applied Science
PRE-FORESTRY

This program is designed to provide entry-level skills for employment with the national park service or with other state and federal natural resource agencies. In addition, when you complete this program, you will have obtained the necessary courses to transfer to four-year programs to further pursue a degree in the forestry field.

GENERAL EDUCATION (44 CRS)

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

Math/Computers/Lab Sciences (29)
  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)
  ES 112/L Introduction to Environmental Science I with lab (4)
  GEOL 101/L Physical Geology with lab (4)
  CS 102 Computer Literacy (3)
  MATH 145 Introduction to Probability and Statistics (3)
  MATH 150 College Algebra (3)

Area IV: Social/Behavioral Sciences (3)
  Elective from pages 25-26 (3)
Area V: Humanities and Fine Arts (3)
PHIL 220 Ethics (3)

Health, Physical Education & Recreation (1 cr)
Electives (1)

PROGRAM REQUIREMENTS (23 CRS)
ES/FOR 101 Introduction to Forestry (3)
ES 102 Overview of Forest Measurement (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 68

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.

GENERAL EDUCATION (45 CRS)

Communications (6)
ENG 111 English Composition I (3)
ENG 116 Technical Writing (3)

Math/Computers/Lab Sciences (33)
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)
   Elective from pages 25-26 (3)

Area V: Humanities and Fine Arts (3)
   Elective from pages 26-27 (3)

Health, Physical Education & Recreation (1 cr)
   Electives (1)

PROGRAM REQUIREMENTS (19 CRS)
   RDPR 233  Radiation Biology (3)
   RDPR 234L Introduction to Radiation Science & Technology (4)
   RDPR 238L Introduction to Radiation Protection (4)
   RDPR 242  Problems in Radiation Protection (4)
   RDPR 243  Practical Radiological Programs and Sampling Methods (4)

TOTAL CREDITS  65

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 (42 CRS)

Area I: Communications (9)

Area II: Mathematics (10)
   MATH 150  College Algebra (3)
   MATH 155  Trigonometry (3)
   MATH 162  Calculus I (4)

Area III: Laboratory Sciences (8)
   Choose one of the following three two-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)
   or
   CHEM 121/L General Chemistry I with lab (4)
   CHEM 122/L General Chemistry II with lab (4)
   or
   PHYS 215/L Engineering Physics I with lab (4)
   PHYS 216/L Engineering Physics II with lab (4)
Area IV: Social/Behavioral Sciences (6)*
   Electives from pages 25-26 (6)

Area V: Humanities and Fine Arts (9)*
   PHIL 220  Ethics (3)
   Electives from pages 26-27(6)
* You must complete at least 15 crs between areas IV and V, maintaining
at least two disciplines in each area.

Health, Physical Education & Recreation (1 cr)
   Electives (1)

PROGRAM REQUIREMENTS (29 CRS)
   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 hrs):
   Choose from BIOL, CHEM, or PHYS.

Approved Electives (12)

TOTAL CREDITS 72
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, Barbering/Cosmetology, Drafting Technology, Electrical Technology, Office Administration, Plumbing Technology, Renewable Energy, Welding Technology, Wildland Fire Science, and many others.

Gilbert Sena, BA  Chair  CTE at Española  747-5488  grsena@nnmc.edu
Ric Gonzales, Cert.  Chair  CTE at El Rito  581-4123  rikgonzales@nnmc.edu
Drucilla Duran, MA  Office Administration  747-2181  dru@nnmc.edu
Betty Espinoza, AAS  Barbering  747-2472  bettymespinoza@nnmc.edu
Daniel Tafoya, Cert.  Spanish Colonial Furniture Making  581-4123  dtafoya@nnmc.edu
Elaine Valdez, Cert.  Barbering/Cosmetology  747-2472  elainevaldez@nnmc.edu

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 (6 CRS)

Communications (3)
ENG 109N Basic English II or a higher level course (3)

Mathematics (3)
BA 117 Business Math (3)

PROGRAM REQUIREMENTS (27 CRS)

BCIS 200 Business Computer Applications (3)
BCIS 225 Excel (3)
BA 250 Business Communications (3)
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 (6-7 CRS)
Communications (3)
ENG108N Basic English I (3)

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

PROGRAM REQUIREMENTS (27 CRS)
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 33–34
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 (18 CRS)

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

Math/Computers/Lab Sciences (6)
- BCIS 102 Computer Literacy (3)
- MATH 132 Applied Trade Math II (3)

Social/Behavioral Sciences (3)
- Elective (3)

Humanities and Fine Arts (3)
- PHIL 220 Ethics (3)

Health, Physical Education & Recreation (1 cr)
- Elective (1)

PROGRAM REQUIREMENTS (56 CRS)

Refinishing (15)
- ABR 112 Refinishing I (5)
- ABR 212 Refinishing II (5)
- ABR 214 Refinishing III (5)

Non-structural Analysis and Damage Repair (15)
- ABR 111 Metal I (4)
- ABR 116 Movable Glass and Hardware (2)
- ABR 211 Metal II (4)
- ABR 213 Metal III (4)
- ATEC 114 Service Writer/Customer Service (1)

Structural Analysis and Damage Repair (14)
- ABR 113 Frame Repair (5)
- ABR 114 Unitized Body Repair (5)
- ABR 120 Auto Body Welding Methods (4)

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)
- ATEC 122 Basic Automotive Electric (1)
- ATEC 203 Automotive Electricity and Electronics (3)

TOTAL CREDITS 75
### Certificate
#### AUTO BODY REPAIR—REFINISHING

This program will prepare you with the skills needed to specialize in the area of refinishing work.

**GENERAL EDUCATION (6 CRS)**

<table>
<thead>
<tr>
<th>Communications (3)</th>
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<tbody>
<tr>
<td>ENG 109N Basic English II (3)</td>
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<table>
<thead>
<tr>
<th>Mathematics (3)</th>
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<tr>
<td>MATH 104N Applied Trades Math I (3)</td>
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**PROGRAM REQUIREMENTS (15 CRS)**

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<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ABR 112</td>
<td>Refinishing I (5)</td>
<td>5</td>
</tr>
<tr>
<td>ABR 212</td>
<td>Refinishing II (5)</td>
<td>5</td>
</tr>
<tr>
<td>ABR 214</td>
<td>Refinishing III (5)</td>
<td>5</td>
</tr>
</tbody>
</table>

**TOTAL CREDITS 21**

### 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 (6 CRS)**

<table>
<thead>
<tr>
<th>Communications (3)</th>
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<tbody>
<tr>
<td>ENG 109N Basic English II (3)</td>
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<table>
<thead>
<tr>
<th>Mathematics (3)</th>
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<tbody>
<tr>
<td>MATH 104N Applied Trades Math I (3)</td>
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</table>

**PROGRAM REQUIREMENTS (16 CRS)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ABR 111</td>
<td>Metal I (4)</td>
<td>4</td>
</tr>
<tr>
<td>ABR 211</td>
<td>Metal II (4)</td>
<td>4</td>
</tr>
<tr>
<td>ABR 213</td>
<td>Metal III (5)</td>
<td>5</td>
</tr>
<tr>
<td>ATEC 114</td>
<td>Service Writer/Customer Service (1)</td>
<td>1</td>
</tr>
<tr>
<td>ATEC 116</td>
<td>Movable Glass and Hardware (2)</td>
<td>2</td>
</tr>
</tbody>
</table>

**TOTAL CREDITS 22**
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 (6 CRS)

Communications (3)
ENG 109N Basic English II (3)

Mathematics (3)
MATH 104N Applied Trades Math I (3)

PROGRAM REQUIREMENTS (14 CRS)

ABR 113 Frame repair (4)
ABR 114 Unitized Body Repair (5)
ABR 120 Auto Body Welding Methods (5)

TOTAL CREDITS 20

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 be able to achieve Automotive Service Excellence (ASE) certification in four or more competency areas.

GENERAL EDUCATION (18 CRS)

Communications (6)
ENG 111 English Composition I (3)
SPCH 130 Public Speaking (3)

Math/Computers/Lab Sciences (6)
BCIS 102 Computer Literacy (3)
MATH 132 Applied Trades Math II (3)

Social/Behavioral Sciences (3)
Elective (3)

Humanities and Fine Arts (3)
PHIL 220 Ethics (3)

Health, Physical Education & Recreation (1 cr)
Elective (1)
PROGRAM REQUIREMENTS (56-57 CRS)

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)
ATEC 115 Automotive Restraint System (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)
ATEC 206 Manual Transmission and Differential (4)
ATEC 207 Automatic Transmission (5.5)

Electives: Choose one of the following:
ATEC 280L Practicum (3)
ABR 120 Auto Body Welding Methods (4)

TOTAL CREDITS 75–76

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 (9 CRS)

Communications (3 crs)
ENG 109N Basic English II (3)

Mathematics (3 crs)
MATH 104N Applied Trades Math I (3)

PROGRAM REQUIREMENTS (13.5 CRS)

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 19.5
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 (6 CRS)
Communications (3)
   ENG 109N Basic English II (3)
Mathematics (3)
   MATH 104N Applied Trades Math I (3)

PROGRAM REQUIREMENTS (22 CRS)
   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 28

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 (6 CRS)
Communications (3)
   ENG 109N Basic English II (3)
Mathematics (3)
   MATH 104N Applied Trades Math I (3)

PROGRAM REQUIREMENTS (15.5 CRS)
   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 21.5

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 (6 CRS)
Communications (3)
   ENG 109N Basic English II (3)
Mathematics (3)
   MATH 104N Applied Trades Math I (3)

PROGRAM REQUIREMENTS (24.5 CRS)
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 30.5
Certificate

AUTOMOTIVE SERVICE ADVISOR

This program is designed to prepare you for entry-level employment as a service advisor (assistant service manager).

GENERAL EDUCATION (6 CRS)

Communications (3)

ENG 109N Basic English II (3)

Mathematics (3)

MATH 104N Applied Trades Math I (3)

PROGRAM REQUIREMENTS (16 CRS)

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)
BA 117 Business Math (3)
BA 200 Business Computer Applications (3)
BA 225 Excel (3)

TOTAL CREDITS 22

BARBERING and COSMETOLOGY

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 of having completed its prerequisite (ENG 108N).
3. After having met criteria 1 and 2, arrange for an appointment with the Cosmetology Department for an admission interview. Call 505.747.2473 for an appointment.
4. Complete the registration process required by the New Mexico State Board of Barbers and Cosmetologists upon acceptance into the program.

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 (18 CRS)

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

Math/Computers/Lab Sciences (6)
- BA 200 Business Computer Applications (3)
- BA 117 Business Math (3)

Social/Behavioral Sciences (3)
- Elective (3)

Humanities and Fine Arts (3)
- PHIL 220 Ethics (3)

Health, Physical Education & Recreation (1 cr)
- Electives (1)

PROGRAM REQUIREMENTS (48 CRS)
- BARB 110 Barbering I (17)
- BARB 120 Barbering II (16)
- BARB 210 Barbering III (15)

TOTAL CREDITS 67

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 (6 CRS)

Communications (3)
- ENG 109N Basic English II (3) or a higher level course

Mathematics (3)
- BA 117 Business Math (3)

PROGRAM REQUIREMENTS (48 CRS)
- BARB 110 Barbering I (17)
- BARB 120 Barbering II (16)
- BARB 210 Barbering III (15)

TOTAL CREDITS 54
Certificate
BOOKKEEPER

This program will prepare you for entry-level positions as a Bookkeeper. Typical work settings might include working alone for a small business or, perhaps, working under the direction of a full-charge bookkeeper or an accountant in a larger business or organization.

GENERAL EDUCATION (6 CRS)
Communications (3)
   ENG 109N Basic English II or a higher level course (3)
Mathematics (3)
   BA 117 Business Math (3)
Health, Physical Education & Recreation (1 cr)
   Elective (1)

PROGRAM REQUIREMENTS (15 CRS)
   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 22

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 (18-19 CRS)
Communications (6 crs)
   ENG 111 English Composition I (3)
   Choose one of the following three courses:
   ENG 112 English Composition II (3)
   ENG 116 Technical Writing (3)
   SPCH 130 Public Speaking (3)
Math/Computers/Lab Sciences (6–7 crs)
   BCIS 102 Computer Literacy (3)
   MATH 130 Intermediate Algebra (4) or MATH 132 Applied Trades Math II (3)
Social/Behavioral Sciences (3 crs)
   Elective (3)
Humanities and Fine Arts (3 crs)
   Elective (3)

Health, Physical Education & Recreation (1 cr)
   Electives (1)

PROGRAM REQUIREMENTS (45–46 CRS)

General Drafting (32 crs)
   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 110  GIS/GPS (3)
   DRFT 111  Commercial Building CAD (4)
   DRFT 112  Mechanical Engineering CAD II (4)
   DRFT 113  Surveying and CAD Mapping II (4)
   DRFT 199  Job Skills (1)

Choose one of the following course combinations (6-7 crs):
   DRFT 201  Residential CAD II (4) and
            CONS 206  Building Construction (3)
   or DRFT 202  Mechanical Engineering CADIII (4) and
            DRFT 238  3D Mechanical Modeling (2)
   or DRFT 203  Civil Engineering CAD (4) and
            CONS 206  Building Construction (3)

Electives (min 7 crs):
   Any advisor-approved DRFT, ME, MATH, Science or CTE related elective(s).

TOTAL CREDITS 64–66
Certificate
COMPUTER AIDED DRAFTING

This program prepares you for entry-level CAD positions.

GENERAL EDUCATION (9–10 CRS)
Communications (3 crs)
  ENG 109N Basic English II (3) or a higher level course
Math/Computer/Lab Sciences (6–7 crs)
  MATH 102 Basic Algebra (4) or higher level math
  BCIS 102 Computer Literacy (3)

PROGRAM REQUIREMENTS (25 CRS)
  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 34–35
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 (18 CRS)

Communications (6 crs)

ENG 111  English Composition I (3)  
SPCH 130  Public Speaking (3)

Math/Computers/Lab Sciences (6 crs)

BCIS 102  Computer Literacy (3)  
Elective (3)

Social/Behavioral Sciences (3 crs)

Elective (3)

Humanities and Fine Arts (3 crs)

Elective (3)

Health, Physical Education, and Recreation (2 crs)

Electives (2)

PROGRAM REQUIREMENTS (64-74 CRS)

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 66–67
**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; minimal aspects of law, taxes, business licenses, and reporting requirements mandated by the State of New Mexico.

**GENERAL EDUCATION (25 CRS)**

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

**Math/Computers/Lab Sciences (11)**
- BCIS 102 Computer Literacy (3)
- MATH 130 Intermediate Algebra (4)
- PHYS 110/L Introduction to Physics I with lab (4)

**Social/Behavioral Sciences (3)**
- Elective (3)

**Humanities and Fine Arts (3)**
- Electives (3)

**Health, Physical Education, and Recreation (2 crs)**
- Elective (2)

**PROGRAM REQUIREMENTS (39 CRS)**
- ADOB 100 Traditional Dwelling Design (3)
- BA 128 Introduction to Entrepreneurship (3)
- BA 240 Principles Management (3)
- CONS 150 Contractor Licensing Requirements (3)
- 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 Uniform Bldg Code (2)
- CONS 157 Site Development and Layout (2)
- CONS 206 Building Construction (3)
- CONS 207 Construction Materials & Estimating (3)
- ELEC 141 Introduction to Electrical Code (3)
- PLBT 215 Plumbing Theory and Repair (2)
- PLBT 220 Plumbing Code Applications (3)

**TOTAL CREDITS 67**
COSMETOLOGY

The Barbering/Cosmetology programs accept 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 of having completed its prerequisite (ENG 108N).
3. After having met criteria 1 and 2, arrange for an appointment with the Cosmetology Department for an admission interview prior to being accepted.
4. Complete the registration process required by the New Mexico State Board of Barbers and Cosmetologists upon acceptance to the program.

Associate of Applied Science
COSMETOLOGY

This program provides you with the courses required by the New Mexico Board of Barbers and Cosmetology for licensure (63 credit hours, 1600 clock hours) and expands those skills with the addition of General Education courses. This is not a transfer program.

GENERAL EDUCATION (18 CRS)

Communications (6)

ENG 111 English Composition I (3)
SPCH 130 Public Speaking (3)

Math/Computers/Lab Sciences (6)

BCIS 200 Business Computer Applications (3)
BA 117 Business Math (3)

Social/Behavioral Sciences (3)

Elective (3)

Humanities and Fine Arts (3)

PHIL 220 Ethics (3)

Health, Physical Education, and Recreation (1 cr)

Electives (1)

PROGRAM REQUIREMENTS (63 CRS)

COSM 110 Cosmetology I (17)
COSM 120 Cosmetology II (16)
COSM 210 Cosmetology III (15)
COSM 220 Cosmetology IV (15)

TOTAL CREDITS 82
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 (6 CRS)

Communications (3)
ENG 109N Basic English II (3) or a higher level course

Mathematics (3)
BA 117 Business Math (3)

PROGRAM REQUIREMENTS (63 CRS)

COSM 110 Cosmetology I (17)
COSM 120 Cosmetology II (16)
COSM 210 Cosmetology III (15)
COSM 220 Cosmetology IV (15)

TOTAL CREDITS 69
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 (22 CRS)

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

Math/Computers/Lab Sciences (7)
- BCIS 102 Computer Literacy (3)
- MATH 130 Intermediate Algebra (4)

Social/Behavioral Sciences (3)
- Elective (3)

Humanities and Fine Arts (3)
- Elective (3)

Health, Physical Education, and Recreation (1 cr)
- Elective (1)

PROGRAM REQUIREMENTS (42 CRS)
- BA 240 Principles of Management (3)
- CONS 207 Construction Materials & Estimating (3)
- ELEC 110 Introduction to Solar Electricity (1)
- ELEC 110L Introduction to Solar Electricity Lab (2)
- 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)
- ELEC 160 Motor Controls (3)
- ELEC 160L Motor Controls Lab (3)
- Elective (3)

TOTAL CREDITS 65
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 (6-7 CRS)
Communications (3)
   ENG 108N Basic English I (3)
Mathematics (3-4)
   MATH 100N (4) or a higher level math course (3)

PROGRAM REQUIREMENTS (24 CRS)
   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 30–31

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 CRS)
Communications (3)
   ENG 111  English Composition I (3)
Mathematics (3)
   BA 117  Business Math (3)

PROGRAM REQUIREMENTS (18 CRS)
   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 (6 CRS)
Communications (3)
   ENG 109N Basic English II (3) or a higher level course
Mathematics (3)
   BA 117 Business Math (3)

PROGRAM REQUIREMENTS (18 CRS)
   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 24

Associate of Applied Science
OFFICE ADMINISTRATION

This program will provide you with the coursework necessary for employment in an administrative position.

GENERAL EDUCATION (18 CRS)
Communications (6 crs)
   ENG 111 English Composition I (3)
   Prerequisite: ENG 109 or adequate score on the Course Placement Evaluation (CPE)
   SPCH 130 Public Speaking (3)
   Prerequisite: ENG 109 or adequate score on CPE
Math/Computers/Lab Sciences (6 crs)
   BCIS 200 Business Computer Applications (3)
   OA 117 Business Math (3)
Social/Behavioral Sciences (3 crs)
   Choose from the following discipline areas:
   Anthropology, Economics, Geography, Political Science, Psychology, or Sociology.
Elective (3)
Prerequisite: ENG 109 or adequate score on CPE

Humanities and Fine Arts (3 crs)
Choose from the following discipline areas: Art (theory only), History, Humanities, Literature, Music (theory only), Philosophy, or Theatre (theory only).
Electives (3)
Prerequisite: ENG 109 or adequate score on CPE

Health, Physical Education & Recreation (1 cr)
Elective (1)

PROGRAM REQUIREMENTS (45 CRS)

OA 115 Record/Information Management (3)
OA 118 Professional Development (3)
OA 135 Introduction to Accounting (3)
OA 236 Administrative Procedures (3)
Prerequisite: OA 111, ENG 111, BA 200
BCIS 249 Microsoft Word (3)
OA 261 Desktop Publishing: MS Publisher (3)
BCIS 265 Access (3)
OA 266 Microsoft Office Certification Training (3)
Prerequisite: BCIS 249, BCIS 265, BCIS 225, BCIS 226
FDMA 117 Digital Media Literacy (3)
BCIS 225 Excel (3)
BCIS 226 PowerPoint (3)
OA 240 Introduction to Project Management Using MS Project (3)
Prerequisite: ENG 109

Advisor Approved Electives (9)

TOTAL CREDITS 64

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 (22 CRS)

Communications (6 crs)

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

Math/Computers/Lab Sciences (10 crs)
BCIS 102 Computer Literacy (3)
MATH 130 Intermediate Algebra (3)
DRFT 100 Computer-Aided Drafting I (4)

Social/Behavioral Sciences (3 crs)
Elective (3)

Humanities/Fine Arts (3 crs)
Elective (3)

Health, Physical Education, and Recreation (1 cr)
Elective (1)

Business-related courses: 6 crs)
BA 220 Introduction to Business (3)
OA 135 Introduction to Accounting (3)

PROGRAM REQUIREMENTS (50 CRS)
PLBT 101 Plumbing Apprenticeship I (5 crs)
PLBT 102 Plumbing Apprenticeship II (5 crs)
PLBT 103 Plumbing Apprenticeship III (5 crs)
PLBT 104 Plumbing Apprenticeship IV (5 crs)
PLBT 106 Plumbing Apprenticeship V (5 crs)
PLBT 206 Plumbing Apprenticeship VI (5 crs)
PLBT 207 Plumbing Apprenticeship VII (5 crs)
PLBT 208 Plumbing Apprenticeship VIII (5 crs)
PLBT 209 Plumbing Apprenticeship IX (5 crs)
PLBT 242 Plumbing Apprenticeship X (5 crs)

TOTAL CREDITS 79

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 competed the Capstone course in this program, you will have completed the education needed to take the New Mexico journeyman’s license exam.

GENERAL EDUCATION (6 CRS)

Communications (3 crs)
   ENG 109N Basic English II (3)

Mathematics (3 crs)
   MATH 104N Applied Trades Math I (3)

PROGRAM REQUIREMENTS (50 CRS)

   PLBT 101  Plumbing Apprenticeship I (5 crs)
   PLBT 102  Plumbing Apprenticeship II (5 crs)
   PLBT 103  Plumbing Apprenticeship III (5 crs)
   PLBT 104  Plumbing Apprenticeship IV (5 crs)
   PLBT 106  Plumbing Apprenticeship V (5 crs)
   PLBT 206  Plumbing Apprenticeship VI (5 crs)
   PLBT 207  Plumbing Apprenticeship VII (5 crs)
   PLBT 208  Plumbing Apprenticeship VIII (5 crs)
   PLBT 209  Plumbing Apprenticeship IX (5 crs)
   PLBT 242  Plumbing Apprenticeship X (5 crs)

TOTAL CREDITS  56

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 (6 CRS)
Communications (3 crs)
   ENG 109N Basic English II (3)
Mathematics (3 crs)
   MATH 104N Applied Trades Math I (3)

PROGRAM REQUIREMENTS (50 CRS)
   PLBT 101 Plumbing Apprenticeship I (5 crs)
   PLBT 102 Plumbing Apprenticeship II (5 crs)
   PLBT 103 Plumbing Apprenticeship III (5 crs)
   PLBT 104 Plumbing Apprenticeship IV (5 crs)
   PLBT 106 Plumbing Apprenticeship V (5 crs)
   PLBT 206 Plumbing Apprenticeship VI (5 crs)
   PLBT 207 Plumbing Apprenticeship VII (5 crs)
   PLBT 208 Plumbing Apprenticeship VIII (5 crs)
   PLBT 209 Plumbing Apprenticeship IX (5 crs)
   PLBT 242 Plumbing Apprenticeship X (5 crs)

TOTAL CREDITS 56

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.
Associate of Applied Science  
RENEWABLE ENERGY

This program will provide you with the skills necessary to enter the renewable energy, alternative technology, and construction industries at higher than entry level. You will be prepared either to enter at supervisory or management internship levels or to establish a small related business.

GENERAL EDUCATION (29 HRS)

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

Math/Computers/Lab Sciences (14)
- MATH 145 Introduction to Probability and Statistics (3)
- MATH 150 College Algebra (3)
- CHEM 121/L General Chemistry I with lab (4)
- PHYS 121/L Applied Physics I with lab (4)

Humanities and Fine Arts (3)
- Elective (3)

Social/Behavioral Sciences (3)
- GEOG 111 World Geography (3)
  or
- Elective (3)

Health, Physical Education, and Recreation (2)
- Electives (2)

PROGRAM REQUIREMENTS (36 CRS)

Completion of Renewable Energy Certificate Program (26)
Electives from: RE, ELEC, ES, ADOB, CONS, CARP, DRFT, ATEC (10)

TOTAL CREDITS 67
Certificate
RENEWABLE ENERGY

This program will provide you with the information and practical experience necessary to design and build or install various types of renewable energy systems. It emphasizes conservation and efficiency as the first step in any renewable energy endeavor through a study of historical, modern, and emerging technologies and materials. As a graduate, you will be prepared for employment with construction firms, renewable energy firms, alternative technology firms, design and planning firms, or self-employment as a specialized subcontractor. You will also have the skills needed to design and build your own off-the-grid homes and vehicles.

GENERAL EDUCATION (6–7 CRS)

Communications (3)
ENG 108N Basic English I (3) (or higher-level English)

Math/Computers/Lab Sciences (3–4)
MATH 102N Basic Algebra (4) or MATH 103N (4) (or higher-level math)

PROGRAM REQUIREMENTS (26 CRS)

General: Complete 9 crs from the following:
ES 112  Introduction to Environmental Science (3)
ES 112L  Introduction to Environmental Science Lab (1)
ES 299  Practicum in Environmental Science (1-4)
RE 103  Renewable Energy Introduction and Overview (3)
RE 104  Architecture 2030 and the 2010 Imperative (3)

Solar Heating: Complete 5 crs from the following:
ADOB 107  Passive Solar Heating (2)
RE 108  Active Solar Heating (3)
RE 108L  Solar Energy Lab (2)
PLB 110  Intro to Solar Heating Plumbing (1)
PLB 110L  Intro to Solar Heating Plumbing Lab (2)

Renewable Electric and Electronics: Complete 8 crs from the following:
ELEC 100  Introduction to Solar Electricity (1)
ELEC 110L  Introduction to Solar Electricity Lab (2)
ELEC 140  Electrical Theory I (3)
ELEC 190  Solar and Wind Systems in the Electric Code (2)
RE 160  Renewable Electric Power Systems (3)
RE 207  Wind Electric System Design and Installation (4)
RE 208  Photovoltaic System Design and Installation (4)

Renewable Vehicle Power: Complete 2 crs from the following:
RE 140  Electric Vehicle Conversion: Nuts and Bolts (2)
RE/ATEC 144  Bio-Diesel Fuel Production and Engine Requirements (3)
RE/ATEC 146  Bio-Hybrid Fuel Production and Engine Requirements (3)
Geothermal, Biomass, and Emerging Technologies:
Complete 2 crs from the following

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>RE 127</td>
<td>Geothermal Systems for Heat and Power</td>
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<td>RE 128</td>
<td>Biomass Systems for Heat, Power, and Cogeneration</td>
<td>4</td>
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<td>RE 129</td>
<td>Trends and Emerging Energy Sources</td>
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<tr>
<td>RE 130</td>
<td>Hydroelectric Power Systems</td>
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TOTAL CREDITS 32–33

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 (21 CRS)

Communications (9)

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<tr>
<td>ENG 111</td>
<td>English Composition I</td>
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<td>ENG 116</td>
<td>Technical Writing</td>
<td>3</td>
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<td>SPCH 130</td>
<td>Public Speaking</td>
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Math/Computers/Lab Sciences (7)

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<tr>
<td>BCIS 102</td>
<td>Computer Literacy</td>
<td>3</td>
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<tr>
<td>ENGR 110</td>
<td>Intro to Engineering Technology</td>
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<tr>
<td>or</td>
<td>MATH 130 Intermediate Algebra</td>
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</table>

Social/Behavioral Sciences (3)

Elective (3)

Humanities and Fine Art (3)

Elective (3)

Health, Physical Education, and Recreation (1 cr)

Electives (1)

PROGRAM REQUIREMENTS (42–43 CRS)

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<tr>
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<th>Title</th>
<th>Credits</th>
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<td>BA 220</td>
<td>Introduction to Business</td>
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<td>DRFT 100</td>
<td>Computer Aided Drafting I</td>
<td>4</td>
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<td>DRFT 199</td>
<td>Job Skills</td>
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<td>WELD 110</td>
<td>Introduction to Welding</td>
<td>3</td>
</tr>
<tr>
<td>WELD 111L</td>
<td>Fundamentals of Oxyacetylene Welding</td>
<td>3</td>
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<tr>
<td>WELD 112L</td>
<td>Fundamentals of Arc Welding</td>
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<tr>
<td>WELD 120L</td>
<td>Oxyacetylene Welding</td>
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<td>WELD 121L</td>
<td>Arc Welding</td>
<td>3</td>
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<tr>
<td>WELD 122L</td>
<td>Inert Gas Welding</td>
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</table>
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)  

Approved Technical Elective (4-5) such as:  
ABR, ATEC, DRFT, ELEC, WELD, etc.  

**TOTAL CREDITS 64–65**

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**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 (6-7 CRS)**  
Communications (3)  
ENG  108N  Basic English I (3)  

Mathematics (3–4 crs)  
MATH 100N (4) or a higher level math course (4)  

**PROGRAM REQUIREMENTS (30 CRS)**  
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 39–42**
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 (28 CRS)

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

Humanities (3 crs)
- PHIL 220 Ethics (3)

Math/Computers/Lab Science (11 crs)
- 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)

Social Behavior Sciences (5 crs)
- PSY 105 General Psychology (3)
- Electives (2)

Health, Physical Education, and Recreation (1 cr)
- Electives

PROGRAM REQUIREMENTS (37.50 CRS)
- ES 137 OSHA Hazmat First Responder (1.5)
- ES 203 Introduction to GIS/GPS & Cartography (2)
- FOR 101 Introduction to Forestry (3)
- FOR 123 Forest Ecology (3 crs)
- 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, Communication, Escape Routes & Safety Zones (1)
- WFS 131 Advanced Fire Fighter Training (Includes S-131) (1)
- WFS 280 Followership to Leadership (L-280) (1.5)
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, chain saw 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 a background to pursue an Associate Degree in Wildland Fire Science.

GENERAL EDUCATION (7 CRS)

Communications (3 crs)
- ENG 109N Basic English II (3)

Math (4 crs)
- MATH 102N Basic Algebra (4)
or MATH 103N (4) or higher level math.

PROGRAM REQUIREMENTS (21.75 CRS)
- ES 137 OSHA Hazmat First Responder (1.5)
- WFS 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 28.75
Northern offers a Bachelor of Arts degree in Elementary Education which requires 43 credits in Education and 24 credits in a Humanities/Social Sciences major. The Humanities/Social Sciences major is structured in a seminar format similar to that followed by St. John’s College. This degree is accredited at the four-year level by the Higher Education of the North Central Association of Colleges and Schools and the National Council for Accreditation of Teacher Education (NCATE).

The Associate of Arts in Elementary Education provides a smooth transition to our BA in Elementary Education as well as providing an opportunity to transfer to other colleges and universities with minimal loss of credit.

We also offer an Associate of Arts in Early Childhood Education, designed for those of you who wish to prepare for working with younger children from birth to grade three.

The Alternative Licensure Program is designed for Teachers in Elementary Education (K-8), Secondary Education (7-12), or in Special Education (K-12). Completion of these courses of study leads to teacher licensure and/or to subject endorsements through the New Mexico Public Education Department.

**Associate of Arts**

**EARLY CHILDHOOD EDUCATION**

This program offers instruction and practical experience in working with young children and their families. Academic learning is integrated with on-site experience which builds the pre-service teacher’s confidence and hands-on competence.

This degree also addresses the general early childhood competency areas which partially fulfill the requirements for the New Mexico Department of Public Education licensure in Early Childhood Education (birth–grade three).

In addition, this degree provides an excellent background if you wish to transfer into the Education Program at New Mexico Highlands University. However, to ensure the best transition to another college, you must work closely with your Northern advisor and with department advisors in the institution to which you wish to transfer.
GENERAL EDUCATION (35 CRS) SEE PAGES 24–27

Health, Physical Education & Recreation (1 cr)
  Elective (1)

PROGRAM REQUIREMENTS (29 CRS)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 102</td>
<td>Computer Literacy</td>
<td>3</td>
</tr>
<tr>
<td>ECE 202</td>
<td>Child Development</td>
<td>3</td>
</tr>
<tr>
<td>ECE 218</td>
<td>Nutrition, Health, and Safety</td>
<td>3</td>
</tr>
<tr>
<td>ECE 219</td>
<td>Introduction to Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>ECE 221</td>
<td>Methods and Materials for Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>ECE 224</td>
<td>Learning Environments</td>
<td>3</td>
</tr>
<tr>
<td>ECE 226</td>
<td>Parent/Community Involvement in the School Setting</td>
<td>3</td>
</tr>
<tr>
<td>ECE 228</td>
<td>Field Based Practicum</td>
<td>2</td>
</tr>
<tr>
<td>ECE 285</td>
<td>Child Guidance</td>
<td>3</td>
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</table>

Choose one of the following courses:

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<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ECE 235</td>
<td>Student Teaching: Infant/Toddler</td>
<td>3</td>
</tr>
<tr>
<td>ECE 236</td>
<td>Student Teaching: Preschool</td>
<td>3</td>
</tr>
<tr>
<td>ECE 237</td>
<td>Student Teaching: Elem. School</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL CREDITS 65

Associate of Arts

ELEMENTARY EDUCATION

This program introduces you to career pathways in K-8 teaching. The curriculum is aligned to the State's Transfer Common Core and to Northern’s General Education Common Core offerings. It meets the competencies and coursework requirements of New Mexico’s Elementary Teacher Education statewide transfer module and it offers a seamless transition to Northern’s Bachelor's Degree in Elementary Education.

GENERAL EDUCATION (54 CRS)

Area I: Communications (9)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>English Comp. I</td>
<td>3</td>
</tr>
<tr>
<td>ENG 112</td>
<td>English Comp. II</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 130</td>
<td>Public Speaking</td>
<td>3</td>
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</tbody>
</table>

Area II: Mathematics (6)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 150</td>
<td>College Algebra</td>
<td>3</td>
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</tbody>
</table>

Choose one of the following:

<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>
<tr>
<td>MATH 155</td>
<td>Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>MATH 162</td>
<td>Calculus I</td>
<td>4</td>
</tr>
</tbody>
</table>
Area III: Laboratory Sciences (12)
    BIOL 110/L Current Topics in Biology with lab (4)
    Elective (8) Choose two additional courses from the Area III list shown on page 25.

Area IV: Social/Behavioral Sciences (6)
    PSY 105 General Psychology (3)
    SOC 101 Introduction to Sociology (3)

Area V: Humanities (21)

    History (12)
    HIST 161 History of the U.S. to 1877 (3)
    HIST 162 History of the U.S. from 1877 (3)
    HIST 260 History of New Mexico (3)

    Choose one of the following courses:
    HIST 101 Western Civilization I (3)
    HIST 102 Western Civilization II (3)

    Fine Arts (6)
    ART 105 Introduction 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)

Health, Physical Education & Recreation (1 cr)
    Elective (1)

PROGRAM REQUIREMENTS (10 CRS)
    ED 201 Foundations of Education (3)
    ED 205L Integrating Technology in the K-8 Classroom (2)
    ED 213 Field Experience I (1)
    ED 220 Educational Psychology (3)
    LT 223 Library Information for Educators (1)

TOTAL CREDITS 65
Bachelor of Arts
ELEMENTARY EDUCATION

This program is designed so that you may earn your baccalaureate degree in Elementary Education completely at Northern. Upon successful completion of the BA program and passing scores on the New Mexico Teacher Assessments, you will be eligible to apply for teacher certification through the New Mexico Public Education Department. This program meets the New Mexico Public Education Department's (PED) Entry-Level Teacher competencies and the Interstate New Teacher Assessment and Support Consortium (INTASC) standards.

Admission Criteria
1. Admission to the College in regular status (i.e., all transcripts have been received).
2. Good standing at Northern.
3. Completion of at least 55 credits of coursework toward an Associate of Arts in Elementary Education, 35 of which are the College’s General Education Common Core (see pages 24-27).
4. Cumulative GPA of at least 2.50.
5. Passing score of 240 or higher on the New Mexico Assessment of Teacher Basic Skills. The Education department requires that you take the Basic Skills test during the last semester of your AA in Elementary Education coursework.

Application Process
To apply to the program, you must submit the following to the Education department:
1. A Letter of Intent: a one page typed letter stating a) your reasons for wanting to become a teacher, b) experience, and c) personal strengths
2. Personal Philosophy of Education Statement: a one page statement that describes your beliefs about a) education, b) learning, and c) working with students
3. Proof of passing scores on the New Mexico Assessment of Teacher Basic Skills
4. Signed Assurances form
5. Copies of all college transcripts
6. Completed program application form

Applicants who transfer from other institutions must have been granted admission in regular status (i.e., all transcripts have been received) prior to applying to the BA program.

Personal Interview
Once all of your application materials are received, you will be interviewed by the Education Department.

Transfer Credits
Up to 12 credits of Professional Preparation coursework will be considered on a case-by-case basis.
NMTA tests
Candidates must offer proof of passing scores on each of the following before enrolling in ED 479 Student Teaching: 1) the New Mexico Content Knowledge Assessment in Elementary Education, and 2) the New Mexico Assessment of Teacher Competency (Elementary).

Assessment of Candidate Learning
In general, you must maintain an overall 2.50 GPA to remain in good standing in the program. In addition, your progress will be evaluated by: 1) the New Mexico Content Knowledge Assessment–Elementary Education and the New Mexico Assessment of Teacher Competency–Elementary; 2) an entry-level teacher, competency-based presentation portfolio; and 3) practicum and student teaching observations and self-assessments.

GENERAL EDUCATION (54 CRS)

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

Area II: Mathematics (6)
- 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)
- BIOL 110/L Current Topics in Biology with lab (4)
  Elective (8) Choose two additional courses from the Area III list shown on page 25.

Area IV: Social/Behavioral Sciences (6)
- PSY 105 General Psychology (3)
- SOC 101 Introduction to Sociology (3)

Area V: Humanities (21)
  History (12)
  - HIST 161 History of the U.S. to 1877 (3)
  - HIST 162 History of the U.S. from 1877 (3)
  - HIST 260 History of New Mexico (3)
  Choose one of the following courses:
  - HIST 101 Western Civilization I (3)
  - HIST 102 Western Civilization II (3)
  Fine Arts (6)
  - ART 105 Introduction 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)

**Health, Physical Education & Recreation (1 cr)**
- Elective (1)

**Program Requirements Common to the AA degree (10 crs)**
- ED 201 Foundations of Education (3)
- ED 205L Integrating Technology in the K-8 Classroom (2)
- ED 213 Field Experience I (1)
- ED 220 Educational Psychology (3)
- LT 223 Library Information for Educators (1)

**PROFESSIONAL PREPARATION REQUIREMENTS (43 CRS)**

**Introductory Block**
- ED 311 Practicum I (1)
- ED 326 Strategies for Successful Classrooms (2)
- ED 450 Pedagogy and Learning (3)

**Literacy and Language Arts Block**
- ED 410 Teaching & Diagnosis of Reading (3)
- ED 411 Practicum II (1)
- ED 460 Reading & Writing Across the Curriculum (Elem.) (3)

**Math and Science Block**
- ED 313 Science & Math for Educators I (3)
- ED 322 Math for Educators I (3)
- ED 422 Math for Educators II (3)
- ED 423 Science & Math for Educators II (3)

**Art, Exceptionalities, and Assessment Block**
- ED 404 Music & Art Across the K-8 Classroom (2)
  or
- ED 420 Creative Movement for the Classroom (2)
- SPED 475 Curriculum Methods & Materials for Special Education (3)
- ED 495 Assessment & Evaluation of Student Learning (3)

**Capstone**
- ED 479 Student Teaching (9)
- ED 480 Student Teaching Seminar (1)
MAJOR REQUIREMENTS Choose ONE of the following majors:

**Humanities and Social Sciences (24 crs)**
- HSS 222 Understanding Diverse Communities (3)
- HSS 310 Indigenous Perspectives of New Mexico History and Culture (4)
- HSS 311 Reading in the Social Sciences (4)
- HSS 320 Genesis of Math and Science (4)
- HSS 410 Senior Seminar: Teaching the Humanities (1)
- HSS 414 Humanity and Creativity (4)
- HSS 421 History, Literature, Art, and Philosophy (4)

**Bilingual Education (24 crs)**

*Prerequisite for this major: 6 crs of Spanish as a Heritage Language or permission of department.*
- EDBE 301 Foundations of Bilingual/ESL Education (3)
- EDBE 303 Introduction to Linguistics (3)
- EDBE 305 Spanish Literacy for Bilingual Education (3) *
- EDBE 306 Spanish for the Bilingual Classroom (3) *
- EDBE 360 Methods of Teaching Bilingual/ESL (3)
- EDBE 362 Second Language Acquisition (3)
- EDBE 481 Linguistics and Phonetics for the Bilingual Teacher (3) *
- EDBE 482 Spanish Language and Folklore of New Mexico for the Bilingual Teacher (3) *

*These courses are taught in Spanish.

**TESOL (24 crs)**

*Prerequisite for this major: 6 crs of a language other than English or permission of department.*
- EDTE 301 Foundations of Bilingual/ESL Education (3)
- EDTE 303 Introduction to Linguistics (3)
- EDTE 360 Methods of Teaching Bilingual/ESL (3)
- EDTE 362 Second Language Acquisition (3)
- EDTE 380 Approaches to Teaching English Writing Skills to ESL/Bilingual Students (3)
- EDTE 381 ESL Across the Content Areas (3)
- EDTE 412 Assessing English Language Learners (3)
- EDTE 413 Special Topics in TESOL (3)

**TOTAL CREDITS 132**
Alternative Licensure
ELEMENTARY or SECONDARY EDUCATION

The Alternative Licensure Program (ALP) for Teachers provides a course of study leading to teacher licensure. The program, approved by the National Council for Accreditation of Teacher Education (NCATE), the New Mexico Public Education Department, and the New Mexico Professional Standards Commission. This program offers elementary (K-8) and secondary (9-12) track course work.

Students enrolled in the ALP must complete all course work with a grade of B or higher, pass the required New Mexico Teachers Assessment Tests (NMTA), and complete other application requirements for licensure.

DEGREE REQUIREMENTS
Each applicant must hold a degree from an accredited institution in a field other than education:

Bachelor’s including 30 credits in a particular field; or Master’s, including 12 graduate credits in a particular field; or Doctorate in a particular field.

TESTING REQUIREMENTS
After admission into the program and during the first semester of enrollment, you must pass the NMTA Basic Skills. Other assessments are required for teacher licensure.

- New Mexico Assessment of Teacher Competency (Elementary or Secondary)
- New Mexico Content Knowledge Assessment (Elementary, Secondary-level)

GENERAL REQUIREMENTS
In order to be accepted into the ALP program, the student must have already applied and been accepted to Northern and have had official transcripts from all colleges sent to the Office of Admissions.

The second step is to submit an application packet to Northern’s College of Education that includes: a letter of intent; a letter stating your philosophy of education; two letters of recommendation; copies of all transcripts to the Education Department; and an ALP Application form. The student will be required to sign an Assurance form and their application packet will be reviewed by a selection committee.

PROFESSIONAL EDUCATION REQUIREMENTS
20 credit hours for the Elementary track and 18 credit hours for the Secondary track program, as approved by the New Mexico Public Education Department and the Professional Standards Commission.

ELEMENTARY (K–8)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED 401</td>
<td>Foundations of Education (3)</td>
</tr>
<tr>
<td>ED 412</td>
<td>Teaching and Diagnosis of Reading (Elem) (3)</td>
</tr>
<tr>
<td>ED 452</td>
<td>Pedagogy and Human Learning (3)</td>
</tr>
<tr>
<td>ED 464</td>
<td>Reading and Writing Across the Curriculum (Elem) (3)</td>
</tr>
<tr>
<td>ED 493</td>
<td>The Integrated Elementary Classroom (2)</td>
</tr>
<tr>
<td>ED 494</td>
<td>Assessment and Evaluation of Student Learning (3)</td>
</tr>
</tbody>
</table>
ED  496  Supervised Field Experience (Elem) (1)
ED  496L Supervised Field Experience Lab (Elem) 2)

TOTAL CREDITS 20

SECONDARY (7–12)
ED  401  Foundations of Education (3)
ED  452  Pedagogy and Human Learning (3)
ED  462  Reading and Writing Across the Curriculum (Sec) (3)
ED  474  Methods and Materials in Secondary Education (3)
ED  494  Assessment and Evaluation of Student Learning (3)
ED  498  Supervised Field Experience (Sec) (1)
ED  498L Supervised Field Experience Lab (Sec) (3)

TOTAL CREDITS 18

**Alternative Licensure**
**SPECIAL EDUCATION**

The Special Education Alternative Licensure Program for Teachers provides a course of study leading to teacher licensure. The program, approved by the National Council for Accreditation of Teacher Education (NCATE), the New Mexico Public Education Department and the New Mexico Professional Standards Commission.

This program offers elementary (K-8), secondary (9-12), and special education (K-12) track course work.

Students enrolled in this program must complete all course work, pass the required New Mexico Teachers Assessment tests (NMTA), and complete other application requirements for licensure.

**DEGREE REQUIREMENTS**
- Applicants must hold a degree in education or in any other field of study.
- Bachelor’s including 30 credits in a particular field; or Master’s, including 12 graduate credits in a particular field; or Doctorate in a particular field.

**TESTING REQUIREMENTS**
After admission into the program and during the first semester of enrollment, you must pass the NMTA Basic Skills. Other assessments are required for teacher licensure:
- New Mexico Assessment of Teacher Competency (Elementary or Secondary)
- New Mexico Content Knowledge Assessment (Elementary, or Secondary-level)

**GENERAL REQUIREMENTS**
In order to be accepted into the ALP program, the student must have already applied and been accepted to Northern and have had official transcripts from all colleges sent to the Office of Admissions.

The second step is to submit an application packet to Northern’s College of Education that includes: a letter of intent; a letter stating your philosophy of education; two
letters of recommendation; copies of all transcripts to the Education Department; and an ALP Application form. The student will be required to sign an Assurance Form and their application packet will be reviewed by a selection committee.

PROFESSIONAL EDUCATION REQUIREMENTS
20 credit hours for the Special Education program, as approved by the New Mexico Department of Public Education and the Professional Standards Commission.

SPECIAL EDUCATION (K-12)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>SPED 401</td>
<td>Foundations of Education</td>
<td>3</td>
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<tr>
<td>SPED 455</td>
<td>The Special Education Program: IEP's and Assessment</td>
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</tr>
<tr>
<td>SPED 465</td>
<td>Reading for Special Learners</td>
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</tr>
<tr>
<td>SPED 475</td>
<td>Curriculum Methods and Materials for Special Learners</td>
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<tr>
<td>SPED 485</td>
<td>Teaching Reading in Special Education</td>
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<tr>
<td>SPED 497</td>
<td>Supervised Field Experience</td>
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</tr>
<tr>
<td>SPED 497L</td>
<td>Supervised Field Experience Lab</td>
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</tbody>
</table>

TOTAL CREDITS 20
COLEGE 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: an Associate of Applied Science in Allied Health; a Certificate of Massage Therapy and the Associate of Applied Science in Massage Therapy; a Certificate of Practical Nursing; an Associate of Applied Science in Nursing; an Associate of Science in Nursing; a Bachelor of Science in Nursing (RN to BSN); and an Associate of Applied Science in Radiologic Technology.

Ellen Trabka, MSN, Chairperson
747-2209  etrabka@nnmc.edu

Associate Degree Nursing Program
Theresa Lopez, MSN, CNE  Director  747-2282  talopez@nnmc.edu
Helen Alarid, BSN  Faculty  747-2283  halarid@nnmc.edu
Lucas Gonzales, BSN  Faculty  747-2208  lucasgonzales@nnmc.edu
Cappie Hausman, MSN,  Faculty 747-2284  chausman@nnmc.edu
Raj Inder Kaur Khalsa, MSN  Faculty 747-2281  rikkhalsa@nnmc.edu

RN to BSN Nursing Program
Nina Klebanoff, PhD, MSN  Director  747-2278  nklebanoff@nnmc.edu

Radiologic Technology Program
Mike Frain, MA, RT (R)  Director  747-2218  frainm@nnmc.edu
Cheryl Martin, BS, RT (R)  Faculty  747-2229  smartin@nnmc.edu

Massage Therapy Program
Kelly Loy, BS, AAS, RMTI  Program 747-2178  kellyl@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 CRS)
Communications (6)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tr>
<td>ENG 111</td>
<td>English Composition I</td>
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<td>Choose one of the following:</td>
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<tr>
<td>ENG 112</td>
<td>English Composition II</td>
<td>3</td>
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</tbody>
</table>

FALL 2011 – SUMMER 2012 CATALOG  147
ENG 116  Technical Writing (3)
SPCH 130  Public Speaking (3)

Humanities (6)
Elective (6)

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)

Laboratory Sciences (8)
BIOL 237/L Human Anatomy & Physiology I with lab (4)
BIOL 238/L Human Anatomy & Physiology II with lab (4)

Social/Behavioral Sciences (6)
PSY 105  General Psychology (3)
SOC 101  Introduction to Sociology (3)

Health, Physical Education & Recreation (1 cr)
Electives (1)

PROGRAM REQUIREMENTS (34 CRS)
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)
SOC 105  Introduction to Human Services (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 English 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 (6 CRS)**

**Communications (3)**
- ENG 109N Basic English II (3)

**Math/Computers/Lab Sciences (3-4)**
- MATH 100N (4) or a higher-level math course (3)

**PROGRAM REQUIREMENTS (36-38 CRS)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MAS 124</td>
<td>Business for Massage Professionals</td>
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<tr>
<td>HSCI 110</td>
<td>Anatomy &amp; Physiology for Massage Therapists I</td>
<td>3</td>
</tr>
<tr>
<td>HSCI 111</td>
<td>Anatomy &amp; Physiology for Massage Therapists II</td>
<td>3</td>
</tr>
<tr>
<td>or</td>
<td>BIOL 237</td>
<td>Human Anatomy &amp; Physiology I</td>
</tr>
<tr>
<td>BIOL 237L</td>
<td>Human Anatomy &amp; Physiology I Lab</td>
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<td>BIOL 238</td>
<td>Human Anatomy &amp; Physiology II</td>
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<tr>
<td>BIOL 238L</td>
<td>Human Anatomy &amp; Physiology II Lab</td>
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<tr>
<td>HSCI 109</td>
<td>CPR/First Aid (.5)</td>
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</tr>
<tr>
<td>HSCI 112</td>
<td>Pathology for Massage Therapists</td>
<td>3</td>
</tr>
<tr>
<td>HSCI 114</td>
<td>Kinesiology for Massage therapists</td>
<td>2</td>
</tr>
<tr>
<td>HSCI 152</td>
<td>Legal Ethical Issues in Massage Therapy</td>
<td>2</td>
</tr>
<tr>
<td>MAS 101L</td>
<td>Massage Therapy I</td>
<td>4</td>
</tr>
<tr>
<td>MAS 103L</td>
<td>Massage Therapy II</td>
<td>4</td>
</tr>
<tr>
<td>MAS 104L</td>
<td>Massage Therapy Internship</td>
<td>3</td>
</tr>
<tr>
<td>MAS 108L</td>
<td>Massage Therapy Practice Lab</td>
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Choose 8 crs from the following electives:

<table>
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<tr>
<th>Course</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>HSCI 125</td>
<td>Medical terminology</td>
<td>2</td>
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<tr>
<td>HSCI 204</td>
<td>Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>IHS 102</td>
<td>Intro to Homeopathy</td>
<td>3</td>
</tr>
<tr>
<td>IHS 103</td>
<td>Meditation and Breath: Mind Body Healing</td>
<td>2</td>
</tr>
<tr>
<td>IHS 115</td>
<td>Intro to Traditional Chinese Medicine</td>
<td>3</td>
</tr>
<tr>
<td>IHS 116</td>
<td>Intro to Aromatherapy</td>
<td>3</td>
</tr>
<tr>
<td>IHS 118</td>
<td>Intro to Integrative Healing</td>
<td>3</td>
</tr>
<tr>
<td>IHS 120</td>
<td>Ayurveda &amp; Energy Healing I</td>
<td>1</td>
</tr>
<tr>
<td>IHS 121</td>
<td>Intro to Ayurveda: Ancient Science of Living</td>
<td>3</td>
</tr>
<tr>
<td>IHS 122</td>
<td>Ayurveda &amp; Energy Healing II</td>
<td>1</td>
</tr>
<tr>
<td>IHS 123</td>
<td>Intro to Acupressure</td>
<td>1</td>
</tr>
<tr>
<td>IHS 124</td>
<td>Ayurveda &amp; Energy Healing III</td>
<td>1</td>
</tr>
<tr>
<td>IHS 222</td>
<td>Intro to Five Elements &amp; Twelve Channels</td>
<td>2</td>
</tr>
<tr>
<td>IHS 208</td>
<td>Holistic Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>IHS 255</td>
<td>Intro to Herbal Medicine</td>
<td>2</td>
</tr>
<tr>
<td>IHS 257</td>
<td>Herbal Pharmacy</td>
<td>2</td>
</tr>
</tbody>
</table>
IHS  264  Therapeutic Touch Techniques (3)
MAS  110  Improving Your Body Mechanics (1)
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  215  Cranial Sacral III (1)

TOTAL CREDITS  42.5

REQUIRED SEQUENCE OF COURSES:

Prerequisites

ENG  109N  Basic English II (3)
MATH 100N (6) or a higher-level math course (3)

FALL (17)  SPRING (19)
HSCI 110 (3) or BIO 237/L (4)  HSCI 111 (3) or BIO 238/L (4)
MAS 101L (4)  MAS 103L (4)
MAS 108L (2)  MAS 104L (3)
HSCI 114 (2)  MAS 124 (2)
HSCI 152 (2)  HSCI 112 (3)
Electives (4)  Electives (4)

*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 CRS)

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)
SPAN  230  Spanish for Health Professions (3)
SPCH  130  Public Speaking (3)
**Humanities (3)**  
Elective (3)

**Math/Computers/Lab Sciences (11)**  
- BIOL 237/L Human Anatomy and Physiology I with Lab (4)  
- BIOL 238/L Human Anatomy and Physiology II with Lab (4)  
- BCIS 102 Computer Literacy (3)

**Social/Behavioral Sciences (6)**  
- PSY Elective (3)  
- SOC Elective (3)

**Health, Physical Education, and Recreation (1 hr)**  
Elective (1)

**PROGRAM REQUIREMENTS (38 CRS)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<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>
</tr>
<tr>
<td>MAS 104L</td>
<td>Massage Therapy Internship (3)</td>
</tr>
<tr>
<td>MAS 108L</td>
<td>Massage Therapy Practice Lab (2)</td>
</tr>
</tbody>
</table>

Choose 14 crs from the following electives:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>HSCI 204</td>
<td>Nutrition (3)</td>
</tr>
<tr>
<td>IHS 102</td>
<td>Intro to Homeopathy (3)</td>
</tr>
<tr>
<td>IHS 103</td>
<td>Meditation and Breath: Mind Body Healing (2)</td>
</tr>
<tr>
<td>IHS 115</td>
<td>Intro to Traditional Chinese Medicine (3)</td>
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<td>IHS 116</td>
<td>Intro to Aromatherapy (3)</td>
</tr>
<tr>
<td>IHS 118</td>
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</tr>
<tr>
<td>IHS 120</td>
<td>Ayurveda &amp; Energy Healing I (1)</td>
</tr>
<tr>
<td>IHS 121</td>
<td>Intro to Ayurveda: Ancient Science of Living (3)</td>
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<td>Intro to Acupressure (1)</td>
</tr>
<tr>
<td>IHS 124</td>
<td>Ayurveda &amp; Energy Healing III (1)</td>
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</tr>
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<td>IHS 208</td>
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<tr>
<td>IHS 255</td>
<td>Intro to Herbal Medicine (2)</td>
</tr>
<tr>
<td>IHS 257</td>
<td>Herbal Pharmacy (2)</td>
</tr>
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<td>Improving Your Body Mechanics (1)</td>
</tr>
<tr>
<td>MAS 111</td>
<td>Applied Kinesiology (1)</td>
</tr>
<tr>
<td>MAS 113</td>
<td>Intro to Foot Reflexology (2)</td>
</tr>
</tbody>
</table>
Northern New Mexico College
Associate Degree in Nursing Program (ADN)

NNMC offers a rigorous, evidence-based two 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.

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 both 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 at a four-year college or university.

Admission to NNMC 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. NNMC 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
1. Graduation from High School or GED
2. Cumulative college GPA of 2.50 or higher
3. Minimum score at ≥ 50th national percentile on standardized entrance exam (Test of Essential Academic Skills “TEAS” test version V). The TEAS must be taken by the end of the spring semester prior to anticipated entry into the program. Scores are valid for two years. The TEAS can only be taken twice during an academic year. Each test will be reviewed and the highest overall test score will be awarded to the applicant. Test dates, fee information, and registration are available at the nursing office (747-2207).
4. Submission of a completed nursing application packet by the last Friday of April for fall admission consideration. Packets are available in the nursing department by mid-March.
5. 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.”

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>English Composition I</td>
</tr>
<tr>
<td>PSY 105</td>
<td>General Psychology</td>
</tr>
<tr>
<td>PSY 290</td>
<td>Developmental Psychology</td>
</tr>
<tr>
<td>BIOL 237</td>
<td>Human Anatomy and Physiology I</td>
</tr>
<tr>
<td>BIOL 237L</td>
<td>Human Anatomy and Physiology I Lab I</td>
</tr>
<tr>
<td>BIOL 238</td>
<td>Human Anatomy and Physiology II</td>
</tr>
<tr>
<td>BIOL 238L</td>
<td>Human Anatomy and Physiology II Lab II</td>
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</table>
BIOL 210  Microbiology
BIOL 210L Microbiology Lab
HSCI 204  Nutrition
NURS 100 & 100L Nurse Aide and Nurse Aide Lab  
(completed within two (2) years prior to entry into the ADN program)  
or a current state nurse aide certification

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.
- 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.

**It is the student's responsibility** to assure that all application documents are on file in the nursing department by the deadline outlined in the application packet. The application deadline is strictly adhered to.

**ADVANCED PLACEMENT FOR LPNS**

Applicants already licensed as a practical nurse may apply for advanced placement. 

*Applicants must:*

1. Complete admission to Northern New Mexico College.
2. Apply for admission to the ADN Program by the advertised date.
3. Submit transcripts of prior nursing education and courses for which transfer credit is requested.
4. Be a graduate of a school of practical nursing with a “C” or above in all nursing courses.
5. Pass the national licensing examination for Practical Nursing (NCLEX-PN) and possess a current LPN license.
6. Have completed the following general education courses (or their equivalent): BIOL 210L, BIOL 237/L, BIOL 238L, ENG 111, PSY 105, HSCI 204, PSY 290.
7. Have basic computer skills including word processing and internet access.
8. Maintain current American Heart Association Basic Life Support (CPR) certification and current immunizations prior to participating in clinical nursing courses.
9. 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.

**Note:** Once accepted for advanced placement into Level II nursing studies, LPNs must complete a nursing transition class (NURS 200) offered at NNMC during the summer session.
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 NNMC 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 CRS)
Communications (3 crs)
   ENG 111 English Composition (3)
Math/Computers/Lab Sciences (12 crs)
   BIOL 210L Microbiology with Lab (4)
   BIOL 237L Human Anatomy & Physiology I with Lab (4)
   BIOL 238L Human Anatomy & Physiology with Lab (4)
Social/Behavioral Science (6 crs)
   PSY 105 General Psychology (3)
   PSY 290 Developmental Psychology (3)

PROGRAM REQUIREMENTS (27 CRS)
   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  48

SEQUENCE OF COURSES

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<tr>
<th>FALL (11 CRS)</th>
<th>SPRING (10 CRS)</th>
<th>SUMMER (3 CRS)</th>
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<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>
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<td>NURS 113L (4)</td>
<td>NURS 125L (2)</td>
<td>NURS 116L (1)</td>
</tr>
<tr>
<td>NURS 114L (1)</td>
<td></td>
<td></td>
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</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 (27 CRS)

Communications (6 hrs)

ENG 111  English Composition (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)

Lab Sciences (12 hrs)

BIOL 210L  Microbiology with Lab (4)
BIOL 237L  Human Anatomy & Physiology I with Lab (4)
BIOL 238L  Human Anatomy & Physiology with Lab (4)

Social/Behavioral Science (6 hrs)

PSY 105  General Psychology (3)
PSY 290  Developmental Psychology (3)

Humanities (3 hrs)

Elective (3)
Health, Physical Education & Recreation (1 cr)
   Elective (1)

PROGRAM REQUIREMENTS (44 CRS)
   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 125  Medical/Surgical Nursing I (4)
   NURS 125L  Medical/Surgical Clinical I (2)
   NURS 217  Maternal/Newborn Nursing (1)
   NURS 217L  Maternal/Newborn Clinical (1)
   NURS 218  Pediatric Nursing (1)
   NURS 218L  Pediatric Clinical (1)
   NURS 225  Medical Surgical Nursing II (4)
   NURS 225L  Medical Surgical Clinical II (2)
   NURS 235  Medical Surgical Nursing III (4)
   NURS 235L  Medical Surgical Clinical III (2)
   NURS 214  Psychiatric/Mental Health Nursing (2)
   NURS 214L  Psychiatric/Mental Health Nursing (1)
   NURS 240  Role Transition/Registered Nurse (1)

TOTAL CREDITS  72

SEQUENCE OF COURSES

YEAR I LEVEL I
Fall Semester (14 crs) Spring Semester (10 crs)
NURS 104 (2) NURS 107 (2)
NURS 106 (2) NURS 116 (2)
NURS 113 (4) NURS 125 (4)
NURS 113L (2) NURS 125L (2)
NURS 114L (1)
Communication Elective (3)

YEAR II LEVEL II
Fall Semester (10 crs) Spring Semester (13 crs)
NURS 225 (4) NURS 235(4)
NURS 225L (2) NURS 235L (2)
NURS 217 (1) NURS 214 (2)
NURS 217L (1) NURS 214L (1)
NURS 218 (1) NURS 240 (1)
NURS 218L (1) Humanities Elective (3)
Associate of Science in
NURSING (AS)

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 NNMC RN to BSN completion program.

GENERAL EDUCATION (39 CRS)

Communications (9 crs)
- ENG 111 English Composition (3)
- SPCH 130 Public Speaking (3)

Choose one of the following courses:
- ENG 112 English Composition II (3)
- ENG 116 Technical Writing (3)

Mathematics (3 crs) Choose one of the following courses:
- MATH 150 College Algebra (3)
- MATH 145 Introduction to Probability and Statistics (3)

Laboratory Science (12 crs)
- BIOL 210L Microbiology with Lab (4)
- BIOL 237L Human Anatomy & Physiology I with Lab (4)
- BIOL 238L Human Anatomy & Physiology with Lab (4)

Social/Behavioral Science (6-9 crs)
- 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 PSYCH. If you choose a third course from this area you need only complete two (6crs) humanities courses.
- ANTH 101L Physical Anthropology w/lab (4)
- ANTH 102 Introduction to Social and Cultural Anthropology (3)
- ANTH 110 Indian Culture of the Southwest (3)
- ANTH 207 Cultures of New Mexico (3)
- ECON 200 Macroeconomics (3)
- ECON 201 Microeconomics (3)
- GEOG 111 World Geography (3)
- PSCI 110 The Political World (3)
- PSCI 120 Contemporary Political Issues (3)
- PSCI 200 American Politics (3)
- PSCI 210 State & Local Government (3)
- PSCI 212 The American Presidency (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)
SOC 101  Introduction to Sociology (3)
SOC 213  Deviant Behavior (3)
SOC 216  Ethnic & Intercultural Relations (3)
SOC 220  Social Problems (3)
SOC 225  Marriage and the Family (3)

**Humanities and Fine Arts (6–9 crs)**
You must select courses from at least two different discipline areas from the following list. 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.

- ART 105  Introduction to Art (3)
- ART 107  History of Art (3)
- ART 211  History of Art (3)
- DANC 240  Dance Appreciation (3)
- ENG  Literature Courses numbered 260-298 (3)
- HIST 101  Western Civilization I (3)
- HIST 102  Western Civilization II (3)
- HIST 161  History of the U.S. to 1877 (3)
- HIST 162  History of the U.S. from 1877 (3)
- HIST 200  History of World Religions (3)
- HIST 220  Southwestern Women’s History (3)
- HIST 230  Chicano Experience in the US (3)
- HIST 250  American Indian History (3)
- HIST 260  History of New Mexico (3)
- HUM 101  Humanities I (3)
- HUM 102  Humanities II (3)
- HUM 105  Humanities and the Southwest (3)
- MUS 105  Music Appreciation (3)
- MUS 103  History of Music I (3)
- MUS 218  History of Music II (3)
- PHIL 110  Introduction to Philosophical Problems (3)
- PHIL 220  Ethics (3)
- PIS 200  Intro to Pueblo Indian Studies (3)
- THE 120  Introduction to Theatre (3)
- THE 130  History of Theatre (3)
- THE 220  Introduction to Theatre II (3)

**Health, Physical Education & Recreation (1 cr)**
Elective (1)

**PROGRAM REQUIREMENTS (44 CRS)**

- 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 125  Medical/Surgical Nursing I (4)
NURS 125L Medical/Surgical Clinical I (2)
NURS 217  Maternal/Newborn Nursing (1)
NURS 217L Maternal/Newborn Clinical (1)
NURS 218  Pediatric Nursing (1)
NURS 218L Pediatric Clinical (1)
NURS 225  Medical Surgical Nursing II (4)
NURS 225L Medical Surgical Clinical II (2)
NURS 235  Medical Surgical Nursing III (4)
NURS 235L Medical Surgical Clinical III (2)
NURS 214  Psychiatric/Mental Health Nursing (2)
NURS 214L Psychiatric/Mental Health Nursing (1)
NURS 240  Role Transition/Registered Nurse (1)

TOTAL CREDITS  84

SEQUENCE OF COURSES

YEAR I LEVEL I

Fall Semester (14 crs)  Spring Semester (14 crs)
NURS 104 (2)  NURS 107 (2)
NURS 106 (2)  NURS 116 (2)
NURS 113 (4)  NURS 125 (4)
NURS 113L (2)  NURS 125L (2)
NURS 114L (1)  Humanities Elective (1)
SPCH 130 (3)  Communication Elective (3)

YEAR II LEVEL II

Fall Semester (13 crs)  Spring Semester (16 crs)
NURS 225 (4)  NURS 235 (4)
NURS 225L (2)  NURS 235L (2)
NURS 217 (1)  NURS 214 (2)
NURS 217L (1)  NURS 214L (1)
NURS 218 (1)  NURS 240 (1)
NURS 218L (1)  *Humanities Elective (3)
Humanities/Soc/Behavioral Elective (3)  *Math 145 or Math 150 (3)
RN to BSN
Nursing Completion 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 129 semester hours of credit 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-two credits of upper-division courses: 30 nursing credits and 12 elective credits with a Nursing (NURS) prefix, Integrative Health Studies (IHS) prefix, or other approved upper division course(s).

GENERAL CURRICULM PLAN
Required Lower-Division Coursework

41 credit hours of lower-division courses, to include nursing courses from ADN program (including nutrition), will be applied toward the BSN degree.

6 credit hours of Pathophysiology (can be lower-or upper division courses).

GENERAL EDUCATION COMMON CORE (39 CREDIT HOURS TOTAL)
Please refer to pages 24-27 of the 2011-2012 NNMC Catalog for information pertaining to NNMC’s General Education Common Core Offerings.

These requirements may have been completed as part of the Associate Degree in Nursing and are required for the RN to BSN Program.

The following general education courses must be completed in order to meet the General Education Core Curriculum at NNMC.

Communications (9 credit hours)

- 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 English Technical Writing (3)

Mathematics (3 credit hours)

- MATH 145 Introduction to Probability & Statistics (3)

Laboratory Science (12 credit hours)

- BIO 210 Microbiology (3)
- BIOL 210L Microbiology Lab (1)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 237</td>
<td>Human Anatomy &amp; Physiology I</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 237L</td>
<td>Human Anatomy &amp; Physiology I Lab</td>
<td>1</td>
</tr>
<tr>
<td>BIOL 238</td>
<td>Human Anatomy &amp; Physiology II</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 238L</td>
<td>Human Anatomy &amp; Physiology II Lab</td>
<td>1</td>
</tr>
</tbody>
</table>

**Social/Behavioral Sciences (6-9 credit hours)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</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 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 credit hours) of the Humanities and Fine Arts courses.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 101/L</td>
<td>Physical Anthropology with Lab</td>
<td>4</td>
</tr>
<tr>
<td>ANTH 102</td>
<td>Introduction to Social/Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 110</td>
<td>Indian Culture of the Southwest</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 207</td>
<td>Cultures of New Mexico</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>
<td>3</td>
</tr>
<tr>
<td>GEOG 111</td>
<td>World Geography</td>
<td>3</td>
</tr>
<tr>
<td>HSS 311</td>
<td>Readings in the Social Sciences</td>
<td>4</td>
</tr>
<tr>
<td>HSS 414</td>
<td>Humanity and Creativity*</td>
<td>4</td>
</tr>
<tr>
<td>HSS 421</td>
<td>History, Literature, Art, and Philosophy</td>
<td></td>
</tr>
<tr>
<td>PSCI 110</td>
<td>The Political World</td>
<td></td>
</tr>
<tr>
<td>PSCI 120</td>
<td>Contemporary Political Issues</td>
<td></td>
</tr>
<tr>
<td>PSCI 200</td>
<td>American Politics</td>
<td></td>
</tr>
<tr>
<td>PSCI 210</td>
<td>State and Local Government</td>
<td></td>
</tr>
<tr>
<td>PSCI 212</td>
<td>The American Presidency</td>
<td></td>
</tr>
<tr>
<td>PSY 105</td>
<td>General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 210</td>
<td>Theories of Personality</td>
<td>3</td>
</tr>
<tr>
<td>PSY 229</td>
<td>Adolescent Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 230</td>
<td>Psychology of Adjustment</td>
<td>3</td>
</tr>
<tr>
<td>PSY 232</td>
<td>Abnormal Behavior</td>
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<tr>
<td>PSY 270</td>
<td>Social Psychology</td>
<td>3</td>
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<tr>
<td>PSY 290</td>
<td>Developmental Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 101</td>
<td>Introduction to Sociology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 213</td>
<td>Deviant Behavior</td>
<td>3</td>
</tr>
<tr>
<td>SOC 216</td>
<td>Ethnic and Intercultural Relations</td>
<td>3</td>
</tr>
<tr>
<td>SOC 220</td>
<td>Social Problems</td>
<td>3</td>
</tr>
<tr>
<td>SOC 225</td>
<td>Marriage and the Family</td>
<td>3</td>
</tr>
</tbody>
</table>

Plus, topic courses with student advisor’s approval

**Humanities and Fine Arts (6-9 credit hours)**

*You must select courses from at least two different discipline areas from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 105</td>
<td>Introduction to Art</td>
<td></td>
</tr>
<tr>
<td>ART 107</td>
<td>History of Art I</td>
<td></td>
</tr>
<tr>
<td>ART 208</td>
<td>History of NM Art &amp; Arch. I</td>
<td></td>
</tr>
</tbody>
</table>
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.

Health, Physical Education & Recreation (HPER) (1 cr)
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.
RN TO BSN CURRICULUM

A minimum of 42 credits of upper-division courses must be completed, to include 30 credits of required upper-division nursing courses.

- NURS 400  Nursing in Transition (1)
- 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)
- NURS 450  Community and Global Health I (4)
- NURS 451  Community and Global Health II (3)
- NURS 460  Integral Communication and Teaching (2)
- NURS 470  Transformational Leadership in Nursing (3)
- NURS 480  Integral Nursing Capstone Course (2)

Electives: 12 credits of upper-division electives with a NURS or IHS prefix, or other approved upper division course (s).

**TOTAL CREDITS  129** *(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 leading to an associate of applied science degree in Radiologic Technology. 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 eligible to take the examination for National Registration. Passing the National Registry exam 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 page at [http://health.nnmc.edu/page/associate-applied-science-radiologic-technology](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 (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 (20 CRS)
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)

Math/Computers/Lab Science (8)
BIOL 237/L Anatomy and Physiology I with Lab (4)
BIOL 238/L Anatomy and Physiology II with Lab (4)

Humanities (3)
Elective (3)

Social/Behavioral Sciences (3)
Elective (3)

Health, Physical Education & Recreation (1 cr)
Elective (1)

HEALTH OCCUPATIONS
PROGRAM REQUIREMENTS (66 CRS)
HSCI 125 Medical Terminology (2)
RAD 108 Basic Patient Care (3)
RAD 135L Principles of Radiologic Techniques I (3)
RAD 136L Principles of Radiologic Techniques II (3)
RAD 140 Radiologic Procedures I (4)
RAD 140L Radiologic Procedures I Lab (1)
RAD 141 Radiologic Procedures II (4)
RAD 141L Radiologic Procedures II Lab (1)
RAD 142 Radiologic Procedures III (3)
RAD 142L Radiologic Procedures III Lab (1)
RAD 145L Clinical Experience I (5)
RAD 146L Clinical Experience II (5)
RAD 149L Clinical Experience III (5)
RAD 235 Radiological Physics (3)
RAD 236 Principles of Radiologic Techniques III (2)
RAD 240 Radiologic Procedures IV (3)
RAD 245L Clinical Experience IV (8)
RAD 246L  Clinical Experience V (8)
RAD 250  Radiologic Pathology (1)
RAD 251  Registry Review (1)

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 (18)</th>
<th>Spring (15)</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>
</tr>
<tr>
<td>RAD 140/L (5)</td>
<td>RAD 146L (5)</td>
<td></td>
</tr>
<tr>
<td>RAD 145L (5)</td>
<td>Social / Behavioral elective (3)</td>
<td></td>
</tr>
<tr>
<td>Humanities Elective (3)</td>
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</tbody>
</table>

SECOND YEAR

<table>
<thead>
<tr>
<th>Fall (17)</th>
<th>Spring (13)</th>
</tr>
</thead>
<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></td>
<td>RAD 251 (1)</td>
</tr>
<tr>
<td></td>
<td>HPER Elective (1)</td>
</tr>
</tbody>
</table>
Department of
BUSINESS ADMINISTRATION

The NNMC Business Administration (BA) Department offers baccalaureate, associate degree 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, or management of information systems (MIS). The Associates of Arts in BA (AABA) degree which requires study in economics, accounting, marketing, business technology and statistics is designed for students who intend to pursue a business career at the technical level. The Bachelor of BA (BBA) offers majors in Management, Accounting, and Management Information Systems (MIS) for the student seeking a professional career in one of those business areas.

Other business-related certificate programs are described in the Career and Technical Education (CTE) section of the Catalog. They include Administrative Assistant, Bookkeeper and Entrepreneurship.

The business and office administration associate degree-level programs at NNMC are accredited by the Accreditation Council for Business Schools and Programs (ACBSP) while the BBA program has a candidacy status with ACBSP.

Associate of Arts
BUSINESS ADMINISTRATION (AABA)

The NNMC BA Department offers an ACBSP accredited Associate of Arts in Business Administration (AABA) degree that is a terminal degree for those graduates who intend to enter the workplace with a sound fundamental knowledge of economics and accounting and who have mastered basic skills in business technology, marketing, and management. The AABA is a transfer degree program, which can lead to a baccalaureate (BBA) in two additional years of full-time study in the NNMC BA Department.

GENERAL EDUCATION (35 CRS) SEE PAGES 24–27
Health, Physical Education & Recreation (1 cr)
Elective (1)
PROGRAM REQUIREMENTS (30 CRS)

MATH 145  Probability and Statistics (3)
BA  220  Introduction to Business (3)
or
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)
Two 3 credit-hour electives approved by a BA Department Advisor (6)

TOTAL CREDITS  66

Bachelor of
BUSINESS ADMINISTRATION (BBA)

The BBA degree is awarded to those students who complete satisfactorily all course work in one of three “majors” or major fields of study—Management, Accounting, or Management Information of Systems (MIS). Each BBA major prepares the student with specialized training for entering the workforce with advanced business knowledge and skill development in that area. In Fall 2010, the BBA program entered candidacy status for accreditation by ACBSP.

BBA ADMISSION REQUIREMENTS

Admissions into the BBA program at the NNMC BA Dept. can occur in one of two ways:

1. As an AABA graduate from the NNMC BA Department or from any ACBSP accredited college as long as the coursework at that college is equivalent to that of the NNMC AABA curriculum. An NNMC BA Department advisor can determine the equivalence and approve admission.

2. As an admitted student at NNMC 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 of all college coursework
   (c) completed satisfactorily 15 credit hours in the following courses or their equivalents at other colleges:

   MATH 145  Probability and Statistics
   BA  220  Principles of Accounting I
   BA  221  Principles of Accounting II
   ECON 200  Macroeconomics
   ECON 201  Microeconomics
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 the NNMC 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 credit hours

**GENERAL EDUCATION (35 CRS) SEE PAGES 24–27**

Health, Physical Education & Recreation (1 cr)

Elective (1)

**BUSINESS CORE (33 CRS)**

- MATH 145 Introduction to Probability and Statistics (3)
- BA 220 Introduction to Business or
- 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)

Three electives from any NNMC College or Department with advisor consultation (6)

**COMMON DEGREE REQUIREMENTS (24 CRS)**

- BA 300 Business Law (3)
- BA 310 Principles of Finance (3)
- BA 313 Organizational Behavior (3)
- 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 (3)
Majors:

MANAGEMENT

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 (35 CRS) SEE PAGES 24–27

Health, Physical Education, and Recreation (1 cr)
   Elective (1)

BUSINESS CORE (33 CRS)

Common Degree Requirements (24 crs)

Management Courses (18 crs)

| BA  | 353 | Operations Management (3) |
| BA  | 354 | E-Commerce (3)            |
| BA  | 360 | Human Resource Management (3) |
| BA  | 408 | Corporate Finance (3)     |
| BA  | 432 | Strategic Management (3)  |
| BA  | 456 | Marketing Management (3)  |

Electives (18 crs)

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

ACCOUNTING

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 (35 CRS) SEE PAGES 24–27

Health, Physical Education, and Recreation (1 cr)
   Elective (1)

BUSINESS CORE (33 CRS)

Common Degree Requirements (24 crs)

Accounting Courses (24 crs)

| BA  | 304 | Intermediate Accounting I (3) |
| BA  | 305 | Intermediate Accounting II (3) |
| BA  | 306 | Intermediate Accounting III (3) |
| BA  | 324 | Federal Tax Accounting I (3)  |
BA  352  Accounting Information Systems (3)
BA  405  Accounting for Not-For-Profit Organizations (3)
BA  445  Cost Accounting (3)
BA  446  Audit Theory and Practice (3)

Electives (12 crs)
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

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 (35 CRS) SEE PAGES 24–27
Health, Physical Education, and Recreation (1 cr)
Elective (1)

BUSINESS CORE (33 CRS)
Common Degree Requirements (24 crs)

MIS Courses (12 crs)
BA  354  E-Commerce (3)
BA  361  Advanced MIS (3)
IT  350  Database Management (3)
IT  410  Information Assurance/Security (3)

Electives (24 crs)
Electives may be chosen from any NNMC College or department subject to advisor consultation. A minimum of four (12 crs) must be at 300 level or above, from the following list:
BA  463  MIS Policy Management (3)
BA  464  Business Continuity Planning/disaster Planning (3)
BA  465  Special topics in MIS (1-6)
EECE 132  Computer Networks I (3)
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

FALL 2011– SUMMER 2012 CATALOG
Department of ENGINEERING

The Department of Engineering offers a Post Baccalaureate Certificate in Information Engineering Technology, Bachelor of Engineering (BEng) degrees in Information Technology, Software Engineering, 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
Jorge Crichigno, PhD  IT  747-5929  jcrichigno@nnmc.edu
Fangyang Shen, PhD  SE  747-2267  fshen@nnmc.edu

Admission Requirements for the Associates of Engineering Programs
All students admitted to NNMC will be admitted to the Associate Degrees if they declare the degree by filing 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 the degree declaration form at the registrar office.
2. Complete the core courses with a minimum grade of a B minus. The core courses are MATH 162, MATH 163, PHYS 215L, PHYS 216L, EECE 152L and EECE 238.
3. ALL the core courses should be completed as soon as possible. It is mandatory that the core courses be taken (and passed) before completing the last 40 credits of the bachelor program (courses that do not belong to the degree do not count). Only under special circumstances; for example, transfers from another program or institution may this rule be waived with special permission from the chairperson.
4. 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 degree in the engineering field.
2. Fill the admission application form at the registrar office.
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 to be admitted 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. 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 you 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’s 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’s graduation requirements
3. A overall GPA of at least 2.50 in all coursework
4. Perform a minimum of 100 hrs of community/college service

Mentoring, tutoring, internships and research projects are some examples of opportunities for the students to achieve this requirement. Before you start working on any activity towards this requirement you need the approval from your academic advisor. You can discuss about 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's 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 environments 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 graduates of this curriculum could be a computer network specialist, but 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 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 (34 CRS)

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 Science (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)
   PHIL 220  Ethics (3)

Health, Physical Education & Recreation (1 cr)
   Electives (1)

PROGRAM REQUIREMENTS (31 CRS)

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 (4)
   ENGR 110  Introduction to Engineering Technology (4)

TOTAL CREDITS 66

SUGGESTED SEQUENCE OF COURSES

First semester (15 cr)
   ENG  111  English Composition I (3)
   MATH 162  Calculus I (4)
   HPER  Elective (1)
   EECE 132  Computer Networks I (3)
   ENGR 110  Introduction to Engineering Technology (4)

Second Semester (19 cr)
   MATH 162  Calculus II (4)
   PHYS 215/L Engineering Physics I with Lab (4)
   EECE 105/L Microcomputer Systems I (4)
   EECE 152/L Computer Programming I (4)
   PHIL 220  Ethics (3)

Third Semester (16 cr)
   SPCH 130  Public Speaking (3)
   PHYS 216/L Engineering Physics II with Lab (4)
   EECE 231  Intermediate Programming I (3)
   IT  250  Introduction to Databases (3)
   ENG  116  Technical Writing (3)
Fourth Semester (16 crs)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 201</td>
<td>Microeconomics</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</td>
<td>3</td>
</tr>
<tr>
<td>IT 210</td>
<td>IT Systems</td>
<td>3</td>
</tr>
<tr>
<td>MATH 145</td>
<td>Introduction to Probability and Statistics</td>
<td>3</td>
</tr>
</tbody>
</table>

Associate in Engineering
PRE-ENGINEERING

This program will prepare you for a bachelor’s degree in engineering. You will obtain a general background in mathematics and the physical sciences, and will be introduced 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 background 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 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 (38 CRS)

Area I: Communications (9)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course 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>

Area II: Mathematics (11)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 145</td>
<td>Introduction to Probability &amp; Statistics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 162</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 163</td>
<td>Calculus II</td>
<td>4</td>
</tr>
</tbody>
</table>
Area III: Laboratory Science (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)
PHIL 220 Ethics (3)

Health, Physical Education & Recreation (1 cr)
Electives (1)

PROGRAM REQUIREMENTS (27 CRS)

Business (3)
BA Lower-Division Elective (3)

Engineering (24)
EECE 152L Computer Programming I (4)
EECE 203L Circuit Analysis I (4)
EECE 231 Intermediate Programming I (3)
EECE 238L Computer Logic Design (4)
ME 160L General Engineering Design I (3)
ME 202 Engineering Statics (3)
ME 260L Engineering Design II (3)

TOTAL CREDITS 66

SUGGESTED SEQUENCE OF COURSES

First Semester (17 crs)
ENG 111 English Composition I (3)
MATH 162 Calculus I (4)
MATH 145 Introduction to Probability and Statistics (3)
ECON 201 Microeconomics (3)
CHEM 121/L General Chemistry I (4)

Second Semester (15 Ccrs)
ENG 116 Technical Writing (3)
MATH 162 Calculus II (4)
PHYS 215/L Engineering Physics I with Lab (4)
ME 160L Gen. Eng. Design I (3)
HPER Elective (1)

Third Semester (17 crs)
SPCH 130 Public Speaking (3)
PHYS 216/L Engineering Physics II with Lab (4)
ME 260L Engineering Design II (3)
EECE 152/L Computer Programming I (4)
BA Elective (3)

Fourth Semester (17 crs)
EECE 238/L Computer Logic Design (4)
EECE 203L Circuit Analysis I (4)
PHIL 220 Ethics (3)
ME 202 Engineering Statics (3)
EECE 231 Intermediate Programming I (3)

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 practice-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 environments as software technician, computer systems technician, data applications or computer technician, or as a test and integration assistant. The graduate of this curriculum 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 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 (34 CRS)

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 Science (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)
PHIL 220  Ethics (3)

Health, Physical Education & Recreation (1 cr)
Electives (1)

PROGRAM REQUIREMENTS (34 CRS)

Business (3)
BA  Lower-Division Elective (3)

Computer Science (6)
CS 201  Mathematical Foundations of Computer Science (3)
CS 241  Data Organization (3)

Electrical, Electronic, and Computer Engineering (21)
EECE 105L  Microcomputer Systems (4)
EECE 132  Computer Networks I (3)
EECE 152L  Computer Programming I (4)
EECE 238/L  Computer Logic Design (4)
EECE 231  Intermediate Programming I (3)

Elective (3) Choose from: EECE or IT lower division courses

TOTAL CREDITS 65

SUGGESTED SEQUENCE OF COURSES

First Semester (14 crs)
ENG 111  English Composition I (3)
MATH 162  Calculus I (4)
MATH 145  Introduction to Probability and Statistics (3)
ECON 201  Microeconomics (3)
HPER Elective (1)
Second Semester (19 crs)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>ENG 116</td>
<td>Technical Writing (3)</td>
</tr>
<tr>
<td>MATH 162</td>
<td>Calculus II (4)</td>
</tr>
<tr>
<td>PHYS 215/L</td>
<td>Engineering Physics I with Lab (4)</td>
</tr>
<tr>
<td>EECE 105/L</td>
<td>Microcomputer Systems I (4)</td>
</tr>
<tr>
<td>EECE 152/L</td>
<td>Computer Programming I (4)</td>
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</table>

Third Semester (16 Crs)

<table>
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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>PHYS 216/L</td>
<td>Engineering Physics II with Lab (4)</td>
</tr>
<tr>
<td>EECE 132</td>
<td>Computer Networks I (3)</td>
</tr>
<tr>
<td>EECE 231</td>
<td>Intermediate Programming (3)</td>
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<tr>
<td>CS 241</td>
<td>Data Organization (3)</td>
</tr>
<tr>
<td>CS 201</td>
<td>Math Foundations of CS (3)</td>
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Fourth Semester (16 Crs)

<table>
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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>SPCH 130</td>
<td>Public Speaking (3)</td>
</tr>
<tr>
<td>EECE 238/L</td>
<td>Computer Logic Design (4)</td>
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<tr>
<td>PHIL 220</td>
<td>Ethics (3)</td>
</tr>
<tr>
<td>BS</td>
<td>Elective (3)</td>
</tr>
<tr>
<td>BS</td>
<td>Elective in 2XX (3)</td>
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</tbody>
</table>

Bachelor of Engineering (BEng) in INFORMATION ENGINEERING TECHNOLOGY

The curriculum of the BEng in Information Engineering 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 environments 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 will be a computer network specialist, but broadly versed in mathematics, physics, computer science, and business fundamentals.

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 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 (43 crs)

Area I: Communications (9 crs)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENG 111</td>
<td>English Composition I (3)</td>
<td></td>
</tr>
<tr>
<td>ENG 116</td>
<td>Technical Writing (3)</td>
<td></td>
</tr>
<tr>
<td>SPCH 130</td>
<td>Public Speaking (3)</td>
<td></td>
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</table>

Area II: Mathematics (11 crs)

<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 (3)</td>
<td></td>
</tr>
<tr>
<td>MATH 162</td>
<td>Calculus I (4)</td>
<td></td>
</tr>
<tr>
<td>MATH 163</td>
<td>Calculus II (4)</td>
<td></td>
</tr>
</tbody>
</table>
Area III: Laboratory Science (8 crs)
   PHYS 215/L Engineering Physics IL (4)
   PHYS 216/L Engineering Physics IL (4)

Area IV: Social/Behavioral Sciences (6–9 crs)
   ECON 201 Microeconomics (3)
   Elective (3–6)*

Area V: Humanities and Fine Arts (6–9 crs)
   PHIL 220 Ethics (3)
   Electives (3–6)*

*Electives in the General Education Common Core are to be chosen from Area IV and V as shown on pages 25-27.

Health, Physical Education & Recreation (1 cr)
   Electives (1)

MAJOR REQUIREMENTS (85 CRS)

Computer Science (3)
   CS 201 Math Foundations of Computer Science (3)

Electrical, Electronic, and Computer Engineering (37)
   EECE 105L Microcomputer Systems I (4)
   EECE 132 Computer Networks I (3)
   EECE 152L Computer Programming I (4)
   EECE 231 Intermediate Programming I (3)
   EECE 238L Computer Logic Design (4)
   EECE 329 Human Computer Interaction (3)
   EECE 330 Computer Networks II (3)
   EECE 342 Wireless and Mobile Computing (3)
   EECE 355 Web Engineering (4)
   EECE 435 Software Engineering (3)
   EECE 440 Advanced Computer Networks (3)

Information Technology (20)
   IT 210 IT Systems (3)
   IT 250 Introduction to Databases (3)
   IT 350 Database Management (3)
   IT 410 Information Assurance/Security (3)
   IT 490 IT Capstone I (4)
   IT 491 IT Capstone II (4)

Business (9)
   ENGR 474 Engineering Project Management (3)
   Electives in ENGR at 4x-level (6)

Support Technologies (16 crs)
   ENGR 110 Introduction to Engineering Technology (4)
EECE 203L Circuit Analysis I (4)
Upper-division electives from EECE/CS/IT courses (8).

TOTAL CREDITS 129

SUGGESTED SEQUENCE OF COURSES

HFA = Humanities & Fine Arts (Area V)
SBS = Social/Behavioral Science (Area IV)

First Semester (18 crs)
- HFA/SBS Elective (3)
- EECE 152/L Computer Programming I (4)
- ENGR 110 Introduction to Engineering Technology (4)
- EECE 105/L Microcomputer Systems I (4)
- EECE 132 Computer Networks I (3)

Second Semester (16 crs)
- ENG 111 English Composition I (3)
- MATH 162 Calculus I (4)
- IT 210 IT Systems (3)
- EECE 330 Computer Networks II (3)
- EECE 231 Intermediate Programming (3)

Third Semester (17 crs)
- 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 crs)
- PHYS 216/L Engineering Physics II with Lab (4)
- CS 201 Math Foundations of CS (3)
- HFA/SBS Elective (3)
- MATH 145 Introduction to Probability and Statistics (3)
- SPCH 130 Public Speaking (3)

Fifth Semester (15 crs)
- EECE 238/L Computer Logic Design (4)
- EECE 329 Human Computer Interaction (3)
- EECE 203/L Circuit Analysis I (4)
- PHIL 220 Ethics (3)
- HPER Elective (1)

Sixth Semester (16 Crs)
- 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 (15 Crs)
  IT  410  Information Assurance/Security (3)
  IT  490  Capstone I (4)
  EECE/CS/IT Elective 3X or 4X (2)
  ENGR 4X  Elective (3)
  ECON 201  Microeconomics (3)

Eighth Semester (16 Crs)
  IT  491  Capstone II (4)
  EECE/CS/IT Elective 3X or 4X (3)
  EECE/CS/IT Elective 3X or 4X (3)
  ENGR 4X  Elective (3)
  HFA/SBS  Elective (3)

Bachelor of Engineering (BEng)
MECHANICAL ENGINEERING
Solar Energy Concentration

The curriculum of the BEng in Mechanical Engineering is designed for engineering students intending 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 technology-intensive environments – 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, alternative energy engineer or project manager. The graduate of this curriculum will be a professional engineering specialist in solar energy power sources, but broadly versed in mathematics, physics, computer science, and business fundamentals.

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 individually and in teams.
3. Graduates will have demonstrated involvement in high technical and leadership roles.
4. Graduates will have accumulated 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. A knowledge of contemporary issues.
11. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

GENERAL EDUCATION (53 CRS)

**Area I: Communications (9 crs)**
- ENG  111  English Composition I (3)
- ENG  116  Technical Writing (3)
- SPCH 130  Public Speaking (3)

**Area II: Mathematics (17 crs)**
- MATH 145  Introduction to Probability and Statistics (3)
- MATH 162  Calculus I (4)
- MATH 163  Calculus II (4)
- MATH 314  Linear Algebra with Applications (3)
- MATH 316  Applied Ordinary Differential Equations (3)

**Area III: Laboratory Science (12 crs)**
- CHEM 121/L  General Chemistry IL (4)
- PHYS  215/L Engineering Physics IL (4)
- PHYS  216/L Engineering Physics IIL (4)

**Area IV: Social/Behavioral Sciences (6-9 crs)**
- ECON  201  Microeconomics (3)
- Elective (3-6)*

**Area V: Humanities and Fine Arts (6-9 crs)**
- PHIL  220  Ethics (3)
- Electives (3-6)*

*Electives in the General Education Common Core are to be chosen from Area IV and V as shown on pages 25-27.

**Health, Physical Education & Recreation (1 cr)**
- Electives (1)
MAJOR REQUIREMENTS (74 CRS)

Solar Energy and Storage (32)
- ME 160L General Engineering Design I (3)
- ME 202 Engineering Statics (3)
- ME 260L Engineering Design II (3)
- ME 301 Thermodynamics (3)
- ME 306 Dynamics (3)
- ME 317 Fluid Mechanics (3)
- ME 318L Mechanical Engineering Lab (3)
- ME 403 Solar Thermal Applications (3)
- ME 490 ME Capstone I (4)
- ME 491 ME Capstone II (4)

Support Technologies (33)
- EECE 152 Computer Programming I (4)
- EECE 203L Circuit Analysis I (4)
- EECE 238L Computer Logic Design (4)
- EECE 371 Materials and Devices (3)
- EECE 453 Electric Energy Storage Devices (3)
- EECE 472 Photovoltaic Devices (3)
- Electives in CS/EECE/IT/ME at 2x-level (4)
- Electives in CS/EECE/IT/ME at 3x-level (4)
- Electives in CS/EECE/IT/ME at 4x-level (4)

Business (9)
- Electives in ENGR at 4x-level (9)

TOTAL CREDITS 128

SUGGESTED SEQUENCE OF COURSES
- HFA = Humanities & Fine Arts (Area V)
- SBS = Social/Behavioral Science (Area IV)

First Semester (16 crs)
- ENG 111 English Composition I (3)
- MATH 145 Introduction to Probability and Statistics (3)
- ECON 201 Microeconomics (3)
- PHIL 220 Ethics (3)
- CHEM 121/L General Chemistry IL (4)

Second Semester (16 crs)
- ENG 116 Technical Writing (3)
- MATH 162 Calculus I (4)
- HFA/SBS Elective (3)
- HFA/SBS Elective (3)
- ME 160L Gen. Engineering Design I (3)
Third Semester (18 crs)
  SPCH 130  Public Speaking (3)
  MATH 162  Calculus II (4)
  PHYS 215/L Engineering Physics I with Lab (4)
  EECE 152L  Computer Programming I (4)
  ME 260L  Engineering Design II (3)

Fourth Semester (14 crs)
  PHYS 216/L Engineering Physics II with Lab (4)
  HPER Elective (1)
  MATH 314  Linear Algebra with Applications (3)
  MATH 316  Applied Ord Diff Equations (3)
  ENGR 4X  Elective (3)

Fifth Semester (17 crs)
  EECE 203L Circuit Analysis I (4)
  ME 202  Engineering Statics (3)
  ME 301  Thermodynamics (3)
  EECE 371  Materials and Devices (3)
  EECE 238L  Computer Logic Design (4)

Sixth Semester (16 crs)
  ME/EECE/CS/IT Elective in 2X (4)
  ME 306  Dynamics (3)
  ME 317  Fluid Mechanics (3)
  ME 318L  Mechanical Engineering Lab (3)
  ENGR 4X  Elective (3)

Seventh Semester (17 crs)
  ME/EECE/CS/IT Elective in 3X (4)
  EECE 453  Electric Energy Storage Devices (3)
  ME 403  Solar Thermal Applications (3)
  HFA/SBS Elective (3)
  ME 490  Capstone I (4)

Eighth Semester (14 crs)
  ME/EECE/CS/IT Elective in 4X (4)
  EECE 472  PV Devices (3)
  ME 491  Capstone II (4)
  ENGR 4X  Elective (3)
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 demonstrated theoretical and hands-on experience to continue with a Master 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 NUMBER OF 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 number 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. No course with a grade of less than a C or CR (as appropriate) will be accepted for graduation.

4. 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.

5. 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.

6. 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.

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. Vagas, 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 HORMO 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 of 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 pre-historic 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 BASIC DESIGN You will study traditional two- and three-dimensional art media: drawing, painting, and sculpture; explore the principles of pictorial structure through studio work; studies problems in black-and-white and color; 3-dimensional form and spatial organization. You will participate in discussions of historic art forms as related to design. May include gallery/museum visits. (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 Southwest, 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, chincolle, 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 artwork 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 silversmithing, 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 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 ABR 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)

**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+0-5)

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 Co-requisite:** 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 Co-requisite:** 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; Co-requisite: BIOL 110L.* *(3, 3T+0S)*

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-require: 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, genomics 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-require: 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-require: 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-require: 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 ECOLOGY 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 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-require: 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-require: 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-require: 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-require: 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 ORNITOLOGY** 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)

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FALL 2011–SUMMER 2012 CATALOG  201
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)

386  VERTEBRATE BIOLOGY  You will study the ecology, behavior, sociology, adaptations, and evolution of the vertebrates. Prerequisite: BIOL 204/L (Fall) (3, 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:** BIOL451L. (1, 0T+1L)

456 IMMUNOLOGY You will study experimentally immunoglobulin structure, antigen-antibody reactions, immunity, and hypersensitivity. **Prerequisite:** BIOL 329. (4,43T+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+OS)

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+OS)

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+OS)

258 INDIAN GAMING, ENTREPRENEURSHIP, SOVEREIGNTY, 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+OS)

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 + OS)

300 BUSINESS LAW General legal principles, including the creation of laws, contracts, sales, business, insurance, and other related matters. Prerequisites: ENG 109N. (3, 3T+OS)

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+OS)

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+OS)

306 INTERMEDIATE ACCOUNTING III Topics in accounting pertaining to public reporting of company financials. Review of recent FASB rules. Prerequisite: BA 304. (3, 3T+OS).

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+OS)

313 ORGANIZATIONAL BEHAVIOR 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+OS)

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+OS)
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 305.  (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 manage-
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 310 (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 multi-nationals, 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** Nature of 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)

**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)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Description</th>
<th>Credits</th>
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<tbody>
<tr>
<td>139</td>
<td>INTRODUCTION TO MS WORD</td>
<td>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.</td>
<td>1, 1T+0S</td>
</tr>
<tr>
<td>155</td>
<td>INTRODUCTION TO MS ACCESS</td>
<td>Introduction to the electronic database, specifically, how to use, design, and edit databases for use in a variety of personal and business applications.</td>
<td>1, 1T+0S</td>
</tr>
<tr>
<td>200</td>
<td>BUSINESS COMPUTER APPLICATIONS</td>
<td>The owner/manager approach to the use of microcomputers: systems design, software, business applications, and the Windows environment.</td>
<td>3, 3T+0S</td>
</tr>
<tr>
<td>225</td>
<td>EXCEL</td>
<td>Illustrates the features of Microsoft Excel, a spreadsheet program that organizes data, completes calculations, makes decisions, graphs (charts) data, and develops professional-looking reports.</td>
<td>3, 3T+0S</td>
</tr>
<tr>
<td>226</td>
<td>POWERPOINT</td>
<td>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.</td>
<td>3, 3T+0S</td>
</tr>
<tr>
<td>249</td>
<td>MICROSOFT WORD</td>
<td>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.</td>
<td>3, 3T+0S</td>
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<tr>
<td>265</td>
<td>MICROSOFT ACCESS</td>
<td>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.</td>
<td>3, 3T+0S</td>
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**CARPENTRY (CARP)**

<table>
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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>153</td>
<td>FRAMING CARPENTRY WITH WOOD / STEEL STUDS</td>
<td>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.</td>
<td>4, 2T+2S</td>
</tr>
<tr>
<td>154</td>
<td>FINISH CARPENTRY</td>
<td>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.</td>
<td>4, 2T+2S</td>
</tr>
<tr>
<td>155</td>
<td>SPECIALIZED CARPENTRY</td>
<td>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.</td>
<td>3, 2T+1S</td>
</tr>
<tr>
<td>171</td>
<td>CARPENTRY APPRENTICE LEVEL 1A</td>
<td>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</td>
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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, drywall 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 121/L. **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 bio-chemistry 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)

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 301L; 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 organic 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)
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)

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)

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)

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)

C PROGRAMMING  You will learn programming in the C Language. Prerequisite: CS 132. [Fall] (3, 2T+1S)

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)

C++ PROGRAMMING  Covers programming using the C++ language, with emphasis on problem solving. Prerequisite: CS 142. [Spring] (3, 2T+1S)

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)

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. Prerequisite: CS 105 and 132. [Fall] (3, 2T+1S)

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. Prerequisite: CS 142 and MATH 130. [Offered as needed] (3, 2T+1S)

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: MATH 163 and PHYS 216/L. (Spring) (4, 3T+1S)

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 Visual Basic. 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)

352 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)

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156 INTERNATIONAL CONSTRUCTION CODE You will learn the use and applications of the International Construction Code (ICC) and the International Residential Code (IRC), 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 and 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)

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 Selection of dance materials and sound accompaniment for solo and group composition. (3, 1+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. (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 advance 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 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, and 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. Prerequisite: DRFT 103 and MATH 102N or MATH 103N. (4, 1T+3S)

115 MAGNETIC DIMENSIONING AND TOLERANCING  Principles and practices of geometric dimensioning and tolerancing. Prerequisite: DRFT 102, or permission of instructor. (3, 3T+0S)

116 SURVEYING BASICS  Basics of surveying theory and collection of field data using levels, transits and theodolite. (1, 1T+0S)

120 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)

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. \textit{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. \textit{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. \textit{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 DEVELOPMENT  This course focuses on the developmental stages, processes, theories of development and learning, and on their implications for developmentally appropriate practice. (3, 3T+0S)

218 HEALTH, SAFETY, AND NUTRITION  Focuses on the relationship and interaction of the physical, social, psychological, and cultural factors that influence the healthy development of the child. You will learn to promote good health through educational experiences, appraise and access health conditions, and create and maintain a safe early childhood environment. (3, 3T+0S)

219 INTRODUCTION TO EARLY CHILDHOOD EDUCATION  Introduction to the historical, philosophical, and social influences of early childhood education. You will investigate professional careers and opportunities, a variety of programs, and current trends and issues in early childhood education. (3, 3T+0S)

221 METHODS AND MATERIALS FOR EARLY CHILDHOOD EDUCATION  You will focus on developmentally appropriate content learning environments and curriculum implementation for young children, integrating content areas, including the arts, literacy, math, health, science, and social studies, and the development of rich learning environments for infants, toddlers, and preschool children. (3, 3T+0S)

224 LEARNING ENVIRONMENTS  Examines the social and physical environment within early childhood settings as an interactive and ongoing process. You will develop skills in implementing stimulating, secure, and enjoyable learning environments that encourage play, exploration, and cooperation. (3, 3T+0S)

226 PARENT/COMMUNITY INVOLVEMENT IN THE SCHOOL SETTING  Focuses on establishing collaborative relationships among families, communities, and schools; explores the issues of diversity as they apply to family, community, culture, language, and children with special needs. (3, 3T+0S)

234 FIELD-BASED PRACTICUM I  You will experience a supervised field experience with young children, hands-on training, and interaction with children and teachers in such programs as Head Start, child care, kindergarten, elementary grades, family child care homes, etc. You will be required to spend 48 contact hours with children, plus regularly scheduled seminars. (2, 1T+1L)
235 **STUDENT TEACHING: INFANT/TODDLER** For those who plan to work in programs that serve children ages birth to two years, such as child care, family child care, and home visitors. Topics include setting up safe, healthy, multicultural learning environments; advancing children’s physical and intellectual family and community communication and collaboration; program management and professionalism. Requires 100 contact hours with children, plus regularly scheduled seminars. (3, 0.5T+2.5L)

236 **STUDENT TEACHING: PRESCHOOL** For those who plan to work in programs that serve children ages three to six years, such as Head Start, child care, kindergarten, family child care, and home visitors. Topics include setting up safe, healthy, multicultural learning environments; advancing children’s physical and intellectual development; supporting children’s social and emotional development; intercultural family and community communication and collaboration; program management and professionalism. Requires 100 contact hours with children, plus regularly scheduled seminars. (3, 0.5T+2.5L)

237 **STUDENT TEACHING: ELEMENTARY SCHOOL** For those who plan to work in programs that serve children ages five to eight years. Topics include setting up safe, healthy, multicultural learning environments; advancing children’s physical and intellectual development; supporting children’s social and emotional development; intercultural family and community communication and collaboration; program management and professionalism. Requires 100 contact hours with children, plus regularly scheduled seminars. (3, 0.5T+2.5L)

285 **CHILD GUIDANCE** Offers classroom management strategies and developmentally appropriate methods for helping children to become competent, independent, and cooperative learners in a group setting. (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. **Prerequisite**: 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. **Prerequisite**: 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. **Prerequisite**: 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** 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 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: passing NMTA. (3, 3T+0S)

EDUCATION—BILINGUAL EDUCATION (EDBE)

Prerequisite for these programs is at least 6 credit hours in Spanish as a Heritage Language, 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 Spanish 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) Prerequisites: 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 Spanish 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: linguistic structure, regional and social variation, bilingualism, maintenance and shift, English influence, etc. It will also cover folkways of the Spanish-speaking people of New Mexico. (Fall) **Prerequisites:** EDBE 305 and 306; **Co-requisite:** EDBE 481. (3, 3T+L)

**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. **Prerequisites:** 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) **Prerequisites:** 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) [11/14/07]

**493 THE INTEGRATED ELEMENTARY CLASSROOM** Explores the historical and theoretical 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) [11/14/07]

**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 compares 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 techniques and codes for residential projects; tool safety, hardware use and identification. (6, 0T+6S)

150 ELECTRICAL THEORY II Basic principles of electromagnetic induction as applied to electric motors, transformers, and solenoid coils. (3, 3T+0S)

151 ELECTRICAL CODE II Code interpretation for commercial, industrial, and hazardous locations; load calculations, over-current protection and grounding. (3, 3T+0S)

152L COMMERCIAL WIRING LAB Practical applications and operations using field work: wiring techniques and codes for assigned commercial and industrial projects. (6, 0T+6S)

160 MOTOR CONTROLS Theory in across-the-line starters, solid-state control, programmable control, pilot devices, line and wiring diagrams, troubleshooting, repair techniques. Co-requisite: ELEC 160L. (3, 3T+0S)

160L MOTOR CONTROLS LAB Co-requisite: ELEC 160. (3, 0T+3S)

190 SOLAR AND WIND SYSTEMS IN THE ELECTRICAL CODE Starting with a review of DC electrical circuits, you will cover Sections 690 and 695 of the National Electrical Code, which deals with photovoltaic and wind-generated electrical systems. You will discuss conductor sizes, circuits, outlets, disconnects and over-current protection between the energy source and the service entrance. Recommended co-requisites: RE 207 or 208. (2, 1T+1S)

ELECTRICAL, ELECTRONIC, AND COMPUTER ENGINEERING (EECE)

105L MICROCOMPUTER SYSTEMS You will study microcomputer modules, installation of microcomputer software, and configuration tables; troubleshooting hardware and software problems. Prerequisite: ENG 109N. (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 inter-networks of WAN and LANs using static routing. Prerequisite: None. (3, 2T+1S)

152L COMPUTER PROGRAMMING In this introduction to the art of computing intended for engineering students, you will study the relationship between computing and problem solving. (Fall and Spring) (4, 3T+1S)

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: MATH 163 and 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. Prerequisites: EECE 132. (4, 2T+2S)
231 INTERMEDIATE PROGRAMMING I You will study the methods underlying modern program development. Specific topics include object-oriented design and the development of graphical user interfaces. **Prerequisite:** EECE 152L (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:** 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 You will study computer networking fundamentals with an emphasis on higher-level protocols and function, including network design considerations, software design and layering concepts, interface design, routing and congestion control algorithms, internetworking, transport protocol design, end-to-end communication, session and application protocols. **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 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. **Prerequisite:** 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 Students will gain an understanding of the principles of radio communication as they apply to wireless data networking. Students will design and deploy multi-hop wireless networks, study the impact on the performance of
upper layer protocols in these networks, and identify the basic parameter values of proper wireless network operation. The course also provides an overview of mobile devices. 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. Prerequisite: 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. Prerequisite: 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) (4, 3T+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, 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. Prerequisite: EECE 152L. (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 testing 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: PHYS 216/L. (Fall) (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, routers. Packet switching techniques, routing protocols and packet processing algorithms. EECE 547 has higher standards and different deliverables than EECE 457. (3, 2T + 1S)

ENGINEERING (ENGR)

110 INTRODUCTION TO ENGINEERING TECHNOLOGY Problem-solving using concepts from applied science. Emphasis on: communication of ideas and information, pre-
sentation of physical concepts, hypothesis testing, data acquisition and analysis, analytical modeling, and computational methods. Tools used include scientific calculators and computers. Topics are chosen from: work, force, rate, and resistance. **Prerequisite:** MATH 102N or MATH 103N or better or permission of instructor. (4, 4T+0S)

### 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)

### 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 ENGLISH I Developmental course for those unprepared for ENG 109N and/or ENG 111, and for those whose program requires it. Stress is on basic communications skills with instruction and guided practice in grammar, punctuation, and usage concentrating on paragraphs and the short essay, as well as in critical reading. Prerequisites: ENG 106N, or adequate score on Course Placement Evaluation. (3, 3T+0S)

109N BASIC ENGLISH II Developmental course building on skills mastered in ENG 108N. Stress is on basic communications skills concentrating on an understanding of the writing process and increasing ability to write the short essay and to read critically. Prerequisite: ENG 108N, or adequate score on Course Placement Evaluation. (3, 3T+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 111. (3, 3T+0S)

**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:** ENG111. (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:** ENG111. (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:** ENG112. (3, 3T+0S)

**324 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:** ENG112. (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:** ENG112. (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:** ENG112. (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)
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 FOR 101. (3, 3T+0S)

102 OVERVIEW OF FOREST MEASUREMENT You will use the forest, meadows, and streams of the Carson National Forest as a natural laboratory for this class in which you will explore, by direct investigation and quantitative analysis, the structure and function of this complex ecosystem in order to understand how it changes in space and through time. Prerequisite: FOR 113. (3, 3T+0L)

103 INTRO TO NATURAL RESOURCE MANAGEMENT This course reviews elements of range management, forest management, wildlife management, watershed management, soils and related disciplines. 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. (Fall only) Co-requisite: ES 112L. (3, 3T+0L)

112L INTRODUCTION TO ENVIRONMENTAL SCIENCE I LAB In this field-work companion to ES 113, 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. (Spring only) (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)

125 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 112/L. (3, 3T+0L)

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)

210 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 and ES 201/L; Co-requisite: ES 210L. (3, 3T+0L)

210L 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 210. (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 firefight-
ers, 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, ES 123, BIOL 203/L, and CHEM 121/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)

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. Prerequisite: ES/FOR 101, ES 112/L and BIOL 203/L. (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)

315 TECHNOLOGY AND THE ENVIRONMENT You will gain a basic understanding of the role of technology in the natural environment and the interplay between the use of such technologies and their environmental and societal impact. ES 112/L, ES 201/L, and BIOL 203/L. (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 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 112/L, ES 201/L, 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)

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, soil 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)

338 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. Prerequisites: ES 112/L. (3, 3T+0L)

340 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 112/L, ES 201/L, and BIOL 203/L. (3, 3T+0L)

350 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, ES 123, BIOL 203/L, and CHEM 121/L. (3, 3T+0L)

365 **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 112/L and BIOL 203/L. (3, 3T+0S)

399 **FIELD PROBLEM** Topic developed between student and advisor. Var. 1-6, (1-6T)

400 **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)

401 **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)

404 **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 112/L, ES 201/L, and BIOL 203/L. (3, 3T+0L)

410 **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, and BIOL 203/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 reintroduction 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 assess-
ment, 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, and BIOL 203/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 112/L, ES 201/L, and BIOL 203/L (3, 3T+0L)

**415 ENERGY AND RESOURCE DEVELOPMENT** 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)

**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+0L)

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, 1T+0.5S) 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, 1T+0.5S)

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, 1T+0.5S)

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 it 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+4S)

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. \((2, 1T+1S)\)

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) \((2, 1T+1S)\)

202A SPINNING II PART 1  Through a combination of lecture, demonstrations, ad 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. \((2, 1T+1S)\)

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 DYES 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 DYES 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. (3, 1T+2S)

110 **FINAL CUT PRO: NON-LINEAR EDITING** Introduction to basic editing techniques using the popular professional editing software Final Cut Pro. 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 STUDIES: THEORY** This class will serve as a foundational course for intermediate and advanced courses in the FDMA Program and introduce roles the media play in our individual and collective experiences. (4, 3T+1S)

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 STUDIES: PRACTICES**  This course looks at the character of different media forms, the relationship between those forms, and the guidelines for choosing which combinations are best for a given communications project. Concentrating on design thinking, it offers and experiential tour of the creative toolset and critical precepts of media practice and is the foundation course for additional media practice and project based courses.  *Prerequisite:* FDMA 111. (4, 3T+1S).

240  **DIGITAL IMAGE II**  You will cover the preparation of images for general output and web publication using Illustrator, Photoshop, and Image Ready software.  *Prerequisite:* FDMA 140. (4, 3T+1S)

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 109. (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. (3, 1T+2S)

**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 handing 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: FFT 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 species, 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, rule, 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 Designed for all levels of downhill 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)
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
<th>Prerequisites</th>
<th>Credits</th>
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<tbody>
<tr>
<td>128</td>
<td>TAI CHI CHUAN II</td>
<td>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)</td>
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<td>129</td>
<td>PILATES</td>
<td>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)</td>
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<td>130</td>
<td>INTERMEDIATE SWIMMING</td>
<td>Designed for individuals with a swimming background, this course begins with a review of beginning techniques and continues onto 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)</td>
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<td>131</td>
<td>WEIGHT LOSS YOGA</td>
<td>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)</td>
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<td>132</td>
<td>LIFE-GUARDING TODAY</td>
<td>You will learn to recognize hazardous situations and prevent injury, with an emphasis on supervising swimmers, minimizing dangers, preperation 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)</td>
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<td>133</td>
<td>STRESS RELIEF YOGA</td>
<td>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)</td>
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<td>134</td>
<td>WOMEN’S SELF DEFENSE</td>
<td>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)</td>
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<td>135</td>
<td>LEADERSHIP SKILLS IN MOVEMENT EDUCATION FOR ELEMENTARY SCHOOL STUDENTS</td>
<td>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)</td>
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<tr>
<td>202</td>
<td>AEROBICS II</td>
<td>Continuation of Aerobics I, with emphasis on greater endurance. Prerequisite: HPER 102. (1, 0T+1S)</td>
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<tr>
<td>204</td>
<td>STEP AEROBICS II</td>
<td>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)</td>
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<tr>
<td>213</td>
<td>RACQUETBALL II</td>
<td>In this continuation of HPER 113, you will put more emphasis on more advanced skills and strategies. Prerequisite: HPER 113. (1, 0t+1S)</td>
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<tr>
<td>216</td>
<td>AIKIDO II</td>
<td>Continuation of Aikido I, with emphasis on greater skills. Prerequisite: HPER 116 or permission of instructor. (2, 0T+2S)</td>
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<tr>
<td>223</td>
<td>INTERMEDIATE VOLLEYBALL</td>
<td>Volleyball competition and play. Focus will be on using skills to learn and develop strategies for competitive play. (1, 0T+1S)</td>
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<tr>
<td>225</td>
<td>POWER CONDITIONING II</td>
<td>This is an advanced cardiovascular conditioning course, utilizing weight training, aerobics, and exercise equipment. Prerequisite: HPER 125. (1, 0T+1S)</td>
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</table>
237 **Yoga for Addiction**  This course is an introduction to yogic addition 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)

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 excep-
tions 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 cur-
cent 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 respond-
ers, 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 electro-
lytes, 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 skills under the EMT-I scope of practice. 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 163L. (2, 0T+2L)

**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** You will learn to deal with medical emergencies when help is miles away and dialing 911 is not an option. You will be taught to deal with emergency situations involving prolonged patient care, severe environments and improvised equipment. If you successfully complete this course, you will receive a certificate valid for three years from Wilderness Medical Association and also a two-year American Heart CPR card when you complete this course. (4, 3T+1S)

**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** Provides the experienced perioperative nurse with the advanced preparation necessary to assume the role of the first assistant. The nursing process is used as the basis for providing nursing care to clients requiring surgical intervention. This course is based on the Core Curriculum for the RNFA. You must complete both theory and clinical to be eligible to take the RN First Assist certification exam. **Prerequisite:** Permission of the instructor. (Fall and Summer only) (3, 3T+0L)

**280L RN FIRST ASSIST CLINICAL** Provides you with the clinical learning experiences for the perioperative nurse who will function in the expanded role of the RNFA. The clinical experience will be supervised and mutually planned by a physician preceptor and RNFA students. Your physician preceptor will assist you in learning the interdependent, intraoperative behavior necessary for the RNFA role, including tissue healing, suturing and knot tying, providing hemostasis and exposure, and use of surgical instruments. The internship consists of 120 hours specific to the role of the RNFA. You must complete both theory and clinical with a grade of ?C? or better to be eligible to take the RN First Assist certification exam. **Prerequisite:** Permission of the instructor; **Co-requisite:** HSCI 280. (Fall and Summer only) (3, 0T+3L)

**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, AND 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. Prereq-
uisite: 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)**

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)

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)

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)

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. Cross-listed as HSS 310. (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. Cross-listed as HSS 311. (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. *Prerequisites:* ENG 112. Cross-listed as HSS 320. (4, 4T+0S)

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’Keefe 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. Cross-listed as HSS 414. (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. Cross-listed as HSS 421. (4, 4T+0S)

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 legitimates 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)

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. Cross-listed as HUM 310. (4, 4T+OS)

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. Cross-listed as HUM 311. (4, 4T+OS).

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. Prerequisites: ENG 112. Cross-listed as HUM 320 (4, 4T+OS)

388 INQUIRY PROJECT In this junior-year, inquiry-based and writing-intensive course, you will explore a single, fundamental question, such as the following: What is the legacy of the Enlightenment? What is the unconscious? Questions will be fundamental and open (admitting of different answers) and will require material and methods from more than one academic discipline. Most importantly, the question will be one in which the instructor has a deep interest in engaging and one that is likely to inspire curiosity and interest on your part. You will be responsible for presenting regular reports. Prerequisite: PHIL 250. (3, 3T+OS)

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’Keefe 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+OS).

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. Cross-listed as HUM 421. (4,4T+OS)

488 SENIOR WORKSHOP In this capstone writing workshop which complements the HSS 388 Inquiry Project, you will select, under the guidance of the workshop instructor and under a general course theme, the question which you will explore throughout the semester. Prerequisite: HSS 388. (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. (4, 2T+2S)

250 INTRODUCTION TO DATABASES Through an introduction to database software, you will study 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)

490 IT CAPSTONE I In this project course, you will exercise your knowledge of information technology, network design, and associated coursework. Prerequisite: senior standing. (4, 2T+2S)

491 IT CAPSTONE II In this project course, you will exercise your knowledge of information technology, network design, and associated coursework. Prerequisite: IT 490. (4, 2T+2S)

510 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)

530 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)
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
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<tr>
<td>102</td>
<td><strong>INTRODUCTION TO HOMEOPATHY</strong></td>
<td>You will study the basic concepts of homeopathy including common remedies as well as the use of homeopathy in first-aid. (3, 3T+0L)</td>
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<tr>
<td>103</td>
<td><strong>MEDITATION AND BREATH: MIND-BODY HEALING</strong></td>
<td>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)</td>
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<tr>
<td>115</td>
<td><strong>INTRODUCTION TO TRADITIONAL CHINESE MEDICINE</strong></td>
<td>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)</td>
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<tr>
<td>116</td>
<td><strong>INTRODUCTION TO AROMATHERAPY</strong></td>
<td>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)</td>
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<tr>
<td>118</td>
<td><strong>INTRODUCTION TO INTEGRATIVE HEALING</strong></td>
<td>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)</td>
</tr>
<tr>
<td>120</td>
<td><strong>AYURVEDA AND ENERGY HEALING I</strong></td>
<td>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)</td>
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<tr>
<td>121</td>
<td><strong>INTRODUCTION TO AYURVEDA: ANCIENT SCIENCE OF LIVING</strong></td>
<td>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)</td>
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<tr>
<td>122</td>
<td><strong>AYURVEDA AND ENERGY HEALING II</strong></td>
<td>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)</td>
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<tr>
<td>123</td>
<td><strong>INTRODUCTION TO ACUPRESSURE</strong></td>
<td>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)</td>
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<tr>
<td>124</td>
<td><strong>AYURVEDA AND ENERGY HEALING III</strong></td>
<td>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)</td>
</tr>
<tr>
<td>130</td>
<td><strong>COMMUNICATION SKILLS FOR HEALING</strong></td>
<td>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)</td>
</tr>
</tbody>
</table>
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 I, 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: HIS 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, contraindications, 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 summertime 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 VESSELS  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, 1T+1L)

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 HIS 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)

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 HIS 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: HIS 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. Prerequisites: 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: HIS 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)

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)

LAW ENFORCEMENT (LE)
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.

130 PATROL, COMMUNICATIONS, AND INVESTIGATIONS 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)

235 TRAFFIC, ENFORCEMENT AND ACCIDENT INVESTIGATION 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)

236 POLICE PROFICIENCY I 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)

237 POLICE PROFICIENCY II 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)

238 POLICE PROFICIENCY III 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 Prerequisite: LE 238. (3, 3T+0S)

239 FIRST RESPONDER FOR LAW ENFORCEMENT 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)

LIBRARY TECHNOLOGY (LT)
Note: Unless otherwise noted, each course in this program has a co-requisite of ENG 109N. Classes are normally scheduled for Saturdays only.
201 CATALOGING 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)

202 TECHNICAL SERVICES—ACQUISITIONS Techniques of selecting, ordering, and receiving library materials; collection development policies, intellectual freedom, copyright 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 pro-
fessional 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; Corequisites: HSCI 112 and 114. (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 This course is designed to teach registered Massage Therapists and Massage Therapy students appropriate body mechanic techniques to increase effectiveness and client satisfaction. Emphasis will be on learning techniques to decrease the possibility of therapist injury, pain, and tension. (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)

114 KINESIOLOGY FOR MASSAGE THERAPISTS You will learn efficient and safe movement patterns and the basic principles of biomechanics and kinesiology. You will learn the muscle origin and insertions, proprioception, the Lever system and how to identify the planes of the body for massage therapy. You will also be introduced to muscle testing techniques of applied kinesiology. Co-requisite: HSCI 110. (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 rhythmic 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)

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. You will learn to analyze data to create algebraic expressions and/or equations, simplifying algebraic expressions and/or equations, implementing and manipulating formulas, translating verbal statements into algebraic expressions and/or equations, solving linear equations and formulas, creating tables and interpreting graphs, and describing the results of problem solving in writing or orally. 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: fundamental operations with signed values, fractions, ratio and proportion,
solving linear equations, exponents, graphs, factoring, quadratic equations, rational expressions, polynomials, inequalities, sets, and applications. **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 and decimals, 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 a more advanced Applied Math. **Prerequisite:** MATH 100N, or adequate score on Course Placement Evaluation. (3, 3T+0S)

**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, 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)

**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, imaginary and complex equations and their graphs, sequences, series, mathematical induction, and an introduction to probability. **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 130. (3, 3T+0S)

**155 TRIGONOMETRY** Review of relations and functions, imaginary and complex numbers, and exponential and logarithmic functions: stresses circular functions, rotations, identities, inverses, triangles, and vectors. **Prerequisite:** MATH 150. (3, 3T+0S)

**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 trigono-
metric functions, polar coordinates, an introduction to complex numbers and DeMoivre's Theorem. \textit{Prerequisite:} MATH 150 (Fall, Spring, Summer) (4,4T+0L)

162 \textbf{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. \textit{Prerequisite:} MATH 150 and MATH 155 or MATH 160. (4, 4T+0S)

163 \textbf{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 and sections polar coordinates. \textit{Prerequisite:} MATH 155 and MATH 162. (4, 4T+0S)

210 \textbf{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. \textit{Prerequisite:} MATH 102N or MATH 103N. (3, 3T+0S)

264 \textbf{CALCULUS III} Parametric equations and vectors in the plane and in three-dimensional space, functions of several variables, extreme of functions in two variables, directional derivatives and gradients, tangent places, 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. \textit{Prerequisite:} MATH 161. (4, 4T+0S)

290 \textbf{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. \textit{Prerequisite:} MATH 162. (May be repeated for credit) (3, 3T+0L)

306 \textbf{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. \textit{Prerequisite:} MATH 162. [Fall] (3, 3T+0L)

308 \textbf{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. \textit{Prerequisite:} MATH 162. [Fall] (3, 3T+0L)

311 \textbf{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. \textit{Prerequisite:} MATH 264. [Fall] (3, 3T+0L)

312 \textbf{PARTIAL DIFFERENTIAL EQUATIONS} You will study the methods of solutions of partial differential equations, engineering and science applications, Laplace's equation, heat and wave equations, separation of variables, Fourier series and Fourier Transforms. \textit{Prerequisites:} MATH 264 and 316. (3, 3T+0L)

313 \textbf{COMPLEX VARIABLES FOR ENGINEERING} You will study the theory of a complex variable with applications to engineering and physical problems. \textit{Prerequisite:} MATH 264 and MATH 316. (3, 3T+0L)

314 \textbf{LINEAR ALGEBRA WITH APPLICATIONS} You will study the 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 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 a familiarization with existing mathematical software. **Prerequisite:** MATH 163 and a computer language. [Spring] (3, 3T+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 space, interchanging 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 will 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, eigen values 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 (ME)**

**160L GENERAL ENGINEERING DESIGN I** Introduces engineering graphics, the design process, computer-aided design, engineering ethics, design economics, and project management. [Cross-listed with CE 160L] **Prerequisite:** MATH 155. (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 and MATH 163. (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 and MATH 162. (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 122/L, PHYS 216/L, and MATH 163. [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. [Cross-listed with CE 302] Prerequisites: PHYS 216/L and MATH 163. (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 and MATH 163. (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. Prerequisites: ME 301 and 302. (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)

**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, 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: PHYS 216/L. (Spring) (3, 3T+0L)

490 CAPSTONE IN MECHANICAL ENGINEERING I  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)

MUSIC (MUS)

Music for Non-Baccalaureate Majors
All studio courses may be repeated without penalty; however, no course may be counted more than once toward graduation requirements.

102 MUSIC THEORY I  Concentrated course in written music structure, musical notation, and fundamentals. This course is strongly recommended for all those pursuing musical studies. Prerequisite: ENG 109N. (3, 3T+0S)

103 MUSIC HISTORY AND LITERATURE I  You will study the history of musical instruments, oral traditions, and music of Western civilization from antiquity to the year 1750. Prerequisite: ENG 109N. (3, 3T+0S)

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)

107 INTRODUCTION TO MUSICAL INSTRUMENTS  Fundamentals of string, percussion, woodwind, and brass instruments. Provides a strong background in techniques and styles. (3, 3T+0S)

108 APPLIED MUSIC: CLASSICAL GUITAR I  You will the basic techniques of classical guitar, rudiments of music, and the history of classical guitar. (2, 1T+1S)

109 APPLIED MUSIC: FOLKLORIC GUITAR I  Basic instruction in folk guitar. (2, 1T+1S)

110 APPLIED MUSIC: PIANO I  Basic instruction in piano from beginning to intermediate level. (2, 1T+1S)

111 APPLIED MUSIC: GUITAR I  Basic instruction in classical guitar from beginning to intermediate level. (2, 1T+1S)

112 APPLIED MUSIC: VOICE I  Basic instruction in voice from beginning to intermediate levels. (2, 1T+1S)

113 APPLIED MUSIC: VIOLIN  Basic principles of playing violin: finger patterns, bowing and vibrato techniques. (2, 1T+1S)

114 APPLIED MUSIC: 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)

115 APPLIED MUSIC: 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. (2, 1T+1S)

117 APPLIED MUSIC: BASS  Basic instruction in bass from beginning to intermediate level. (2, 1T+1S)

119 HISTORY OF FLAMENCO  Overview of Spanish music history; and introduction to the elements of the Flamenco Tablao; and the history of Flamenco music. Includes readings from Flamenco historian D.B. Pohren and a layman of “Aficionados.” (3, 3T+0S)

121 DANCE ACCOMPANIMENT I  Teaches rhythmic patterns and styles for dance accompaniment at the beginning level, with the use of the guitar. Prerequisite: MUS 111. (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)

124 DRUMMING I: WEST AFRICAN  A beginning class in basic rhythmic patterns and techniques of West African drumming, including the history and culture of drumming throughout all of West Africa. (2, 1T+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 APPLIED MUSIC: 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 APPLIED MUSIC: GUITAR II  Continuation of MUS 111. Instruction in guitar from intermediate to advanced level. Prerequisite: MUS 111. (2, 1T+1S)

212 APPLIED MUSIC: 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. (2, 1T+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. (2, 1T+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. (2, 1T+1S)

216 MUSIC THEORY II  Continuation of MUS 102, with studies in harmony, texture, structure, tone-color, rhythm, and melody. Recommended for music majors. Prerequisite: MUS 102. (3, 3T+0S)

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. (2, 1T+1S)

218 MUSIC HISTORY & LITERATURE II  The Viennese Classic period of 1750 to the present. Prerequisite: ENG 109N. (3, 3T+0S)

219 APPLIED MUSIC: 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. (2, 1T+1S)

221 APPLIED MUSIC: PIANO II Continuation of MUS 110. Instruction from intermediate to advanced level. Prerequisite: MUS 110. (2, 1T+1S)

222 DANCE ACCOMPANIMENT II Rhythmic patterns and styles for dance accompaniment at the intermediate level with the use of the guitar. Prerequisite: MUS 121. (2, 1T+1S)

223 APPLIED MUSIC: FLAMENCO GUITAR II You will study the higher Flamenco forms such as the “Soleares, Bulerias, and Alegias.” Prerequisite: MUS 114. (2, 1T+1S)

224 DRUMMING II: WEST AFRICAN A continuation of MUS 124, covering more complex West African drumming rhythms and techniques, as well as history and culture. Provides more emphasis on group drumming and drumming with other music. Prerequisite: MUS 124. (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)

227 TRADITIONS IN FLAMENCO 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)

231 STRUCTURAL STUDY OF FLAMENCO MUSIC You will study the Tablao, Palmas, and Rhythmic patterns of Flamenco music. Prerequisites: MUS 227. (2, 2T+0S)

240 MUSIC HISTORY You will be exposed to the history of music through various eras, countries, and styles. Offerings will change each semester, so you may repeat this course. Offerings will include: Jazz, World Music, Women in Music, Music of the Americas, Modern Music, and History of Rock and Pop. Prerequisite: ENG 109N. (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. (2, 1T+1S)

Music for those pursuing a Bachelor of Music

099 RUDIMENTS OF MUSIC This course is designed to help students who fail the entrance exam for the baccalaureate program to achieve the necessary level of knowledge and skills to advance to the Bachelor of Music program. The course covers beginning-level music theory, solfege, and dictation. (3, 1T+2S)

100 MUSICAL SKILLS I Diatonic melody and harmony: two-part counterpoint; aural skills, music reading, and keyboard. Prerequisite: MUS 099 or test out. (1, 1T+0S)

101 MUSIC MAJOR STUDIO INSTRUCTION I This course provides a structured path toward the development of essential abilities required for skillful performance of classical
guitar repertoire. You will review basic techniques and address important aspects of musicianship related to nylon-string guitar playing. You will learn how to project melodies, bass lines, and various textures using classical techniques from diverse traditions, with emphasis on European and Latin American methods. You will cultivate fingerboard knowledge and harmonic awareness while refining tone production, rhythmic skills, and biomechanical efficiency. **Prerequisite:** MUS 099 or test out. (2, 2T+0S)

**102 MUSIC THEORY I** Concentrated course in written music structure, musical notation, and fundamentals. This course is strongly recommended for all those pursuing musical studies. **Prerequisite:** MUS 099 or test out. (3, 3T+0S)

**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 099 or test out. (2, 2T+0S)

**106 MUSICAL SKILLS II** Development of musical skills such as reading rhythms, vocal production of tonal materials, conducting, and taking dictation. Practice of inner hearing, musical memory, and polyphonic awareness exercises. **Prerequisite:** MUS 100 or permission. (1, 1T+0S)

**108 MUSIC MAJOR STUDIO INSTRUCTION II** You will continue on the path from basic skills and repertoire into intermediate-level repertoire that helps to build an understanding of style and performance practice. Musical pieces, etudes, and exercises will be drawn from various periods from the Renaissance to the present day. You will explore works that will require you to learn to sift positions and to play in various tempos, as well as in increasingly varied textures, rhythms, and harmonies. You will on sight-reading in higher positions. In addition, you will practice and perform scale and arpeggio studies with a metronome in order to increase velocity. **Prerequisite:** MUS 101. (2, 2T+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 (2, 2T+0S)

**122 MUSIC THEORY II** Continuation of MUS 102, with studies in harmony, texture, structure, tone-color, rhythm, and melody. **Prerequisite:** MUS 102. (3, 3T+0S)

**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)

**128 JAZZ FUNDAMENTALS I** You will survey the theory of music as used in American Jazz, addressing a pragmatic approach on the study of intervals, basic chord construction, modes of the major scales, basic substitution and function, thirteenth chords, modes of the harm, minor scale and voicing, and connecting chords. **Prerequisite:** MUS 099 or test out. (3, 3T+0S)

**129 JAZZ FUNDAMENTALS II** You will study the theory of music as used in American Jazz, addressing a pragmatic approach on the study of modes of the ascending melodic minor scale, polychord nomenclature, symmetrical altered scales, five part harmony, synthetic scales, developing improvisational skills, and melody harmonization. **Prerequisite:**
MUS 128 (3, 3T+0S)

132 JAZZ MAJOR STUDIO INSTRUCTION I You will work on improving your sight-reading skills and continue developing your knowledge and skilled performance of rhythm in several styles. Prerequisite: MUS 101 (2, 2T+0S)

133 JAZZ MAJOR STUDIO INSTRUCTION II You will continue to work on improving your sight-reading skills and continue developing your knowledge and skilled performance of rhythm in several styles. Prerequisite: MUS 132 (2, 2T+0S)

151 JAZZ IMPROVISATION I This is a performance-practice oriented course, proving you tangible tools as an aspiring improviser to develop your personal musical language based on the Jazz Tradition. Every class will include a short lecture, ear training, playing through scales, arpeggios, generic melodic patterns, standard harmonic patterns, and tune learning. Prerequisite: MUS 101 (3, 3T+0S)

152 JAZZ IMPROVISATION II You will study the theory and technique of Bebop, with emphasis on vocabulary, style, and repertoire of the jazz common practice period (1940-1955). This course will provide you with the theoretical and technical means to play and improvise over pre-existing chord progressions. Prerequisite: MUS 151 (3, 3T+2S)

200 MUSICAL SKILLS III Development of musical skills such as the singing and dictation of intervals, arpeggios of the Maj7, Min7, Dom7, Min7(b5), and Diminished Chords and their alterations. Modes of the Major, Harmonic Minor and Ascending Melodic Minor Scales, and some Root Movements of important Chord Progressions. Prerequisite: MUS 106. (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 099 or test out. (3 3T+0S)

206 MUSICAL SKILLS IV Development of musical skills such as reading rhythms, vocal production of tonal materials, conducting, and taking dictation. Practice of inner hearing, musical memory, and polyphonic awareness exercises. Prerequisite: MUS 200. (1, 1T+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)

229 HARMONY APPLIED TO THE GUITAR II A continuation of the application of concepts studied in Advanced Harmony to the guitar. You will apply the principles of harmony to the guitar fingerboard, with an emphasis on “voice leading” and “comping,” using various sets of strings, generating a richer combination of voicings applicable to the guitar, with a variety of common rhythmic styles. (3, 3T+0S)

232 JAZZ MAJOR STUDIO INSTRUCTION III You will continue to work on improving your sight-reading skills and continue developing your knowledge and skilled performance of rhythm in several styles. (2, 2T+0S)

233 JAZZ MAJOR STUDIO INSTRUCTION IV You will continue to work on improving your sight-reading skills and continue developing your knowledge and skilled performance of rhythm in several styles. (2, 2T+0S)

243 JAZZ MAJOR 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. (2, 1T+1S)

244 JAZZ MAJOR 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 (2, 1T+1S)

305 JAZZ STYLES AND ANALYSIS I You will study jazz styles from ragtime and early jazz to swing and bebop, analyzing styles with a focus on repertoire, improvisation, instrumentation, role of instruments, major innovators and important groups. You will transcribe and analyze works as your final project for this course. (3, 3T+0S)

310 HISTORY AND LITERATURE OF MUSIC I You will study style analysis, visual and aural, of representative compositions, and the relationship of music to socio-cultural background of each epoch. You will study the history of music from the beginnings of Western civilization to 1750. (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. (2, 1T+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. (2, 1T+1S)

324 HISTORY AND LITERATURE OF MUSIC II In this course, you will continue your study of the history of music from 1750 to the present. (3, 3T+0S)

325 JAZZ STYLES AND ANALYSIS II You will study jazz styles from the cool school and hard bop to modal and contemporary styles, analyzing them with a focus on repertoire, improvisation, instrumentation, role of instruments, major innovators, and important groups. You will transcribe and analyze works as your final project for this course. (3, 3T+0S)

331 INSTRUMENT V You will continue to work on improving your sight-reading skills and continue developing your knowledge and skilled performance of rhythm in several styles. You will work on improving your repertoire and melodic vocabulary. (2, 2T+0S)

333 INSTRUMENT VI You will continue to work on improving your sight-reading skills and continue developing your knowledge and skilled performance of rhythm in several styles. You will work on improving your repertoire and melodic vocabulary. (2, 2T+0S)

391 JUNIOR RECITAL A public recital played by the student before a jury of two or more music professors. Students must acquire a grade of B or better in order to proceed to their senior year of music courses. The particular repertoire will be discussed with the instructor/advisor. It should preferably consist of pieces representing several periods and genres. Prerequisite: MUS 331. (1, 0T+1S)

403 RHYTHM STYLES FOR THE WORKING GUITARIST You will acquire the skills necessary to work as a rhythm section musician in several musical contexts and styles. (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 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 152. (3, 0T+3S)

407 SOUTH AMERICAN GUITAR STYLES I A performance-practice oriented course which will assist you to develop the theory and skill of strummed styles from South American and
the performance of some works by composers such as Antonio Lauro, Jorge Cardoso, Astor Piazzola, Heitor Villa Lobos, and others. (3, 3T+0S)

**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 o5 trumpets, 4 trombones, and 1 tuba, plus rhythm section, including Latin percussion. **Prerequisite:** MUS 314. (2, 0T+2S)

**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 o5 trumpets, 4 trombones, and 1 tuba, plus rhythm section, including Latin percussion. **Prerequisite:** MUS 410. (2, 0T+2S)

**423 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)

**431 INSTRUMENT VII** You will continue to work on improving your sight-reading skills and continue developing your knowledge and skilled performance of rhythm in several styles. You will work on improving your repertoire and melodic vocabulary. (2, 2T+0S)

**432 INSTRUMENT VIII** You will continue your study with practice of inflections and idiomatic playing, plus the playing of accurate transcriptions of contemporary jazz compositions and the performance of your original arrangements. (2, 2T+0S)

**433 JAZZ ARRANGING AND COMPOSING I** In this course, you will incorporate the technique of transcription as one of the principal means of learning to write. Each week you will transcribe a piece for the designated instrumentation, and then do an arrangement for the same instrumentation and in the same style. All pieces will be performed and critiqued. For the transcription, you are encouraged to draw on widely diverse sources and to cover a wide range of styles and eras. (3, 3T+0S)

**434 JAZZ ARRANGING AND COMPOSING II** In a continuation of MUS 433, this course will provide students training on arranging by studying the role of the rhythm section instruments as presented by Steve Houghton in his book Essential Styles, and six arrangements by three major arrangers, as presented in Rayburn White’s Inside the Score. Students will write a full big band arrangement of either an original tune or a pre-existing tune by any composer, at the student’s choice. **Prerequisite:** MUS 433. (Spring) (3, 2T+1S)

**480 GRADUATION PAPER** This course consists of writing a research paper whose topics must be based on the fundamental body of knowledge and skills acquired by students during their four years of instruction in the music program at NNMC. The particular topic will be discussed with the student’s instructor/advisor. **Prerequisite:** MUS 333. (1, 1T+0S)

**491 SENIOR RECITAL** A public recital played by the student before a jury of two or more music professors. Students must acquire a grade of B or better in order conclude their music program. The particular repertoire will be discussed with the instructor/advisor. It should preferably consist of pieces representing several periods and genres. **Prerequisite:** MUS 431. (1, 0T+1S)

**NATURAL RESOURCES (NR)**

**101 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)

**101L SOILS LABORATORY** Soil morphology and development. Field analysis and charac-
terization of soil profiles. Impact of weather, drainage, agricultural, industrial, and man-made factors on edaphic characterization. Co-requisite: NR 101. (1, 0T+1L)

102 WATER MANAGEMENT New Mexico and federal water laws, various methods of irrigation; livestock watering methods, water diversion, and soil erosion control. (3, 3T+0L)

103 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)

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, +0L).

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. Corequisites: NURS 113. (Fall) (2, 0T, +2L).

114 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. (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. **Prerequisites:** 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:** NRS 1 (2, 2T, 0L) (Summer).

214 **PSYCHIATRIC/MENTAL HEALTH NURSING** This course introduces nursing care and management of the psychiatric/mental health client. **Pre-requisite:** NURS 217/L, NURS 218/L, NURS 225/L. **Co-requisite:** NURS 214L. (Spring) (2, 2T, +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 the 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. Corequisites: 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. Corequisites: NURS 235. (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. Corequisites: NURS 235. (Spring) (2, 0T, +2L).

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. (1, 1T+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 343, NURS 344, and 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 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. (4, 4T+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. (3, 2T+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 courses 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. (3, 3T+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)

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 a 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 the electronic desktop publication specifically how to use, 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)

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 examining 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: ENG 111. (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: ENG 111. (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: ENG 111. (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: ENG 111. (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 Mechanics, fluids, vibrations, and sounds; problem solving and demonstrations. Prerequisite: MATH 162; Co-requisite: PHYS 215L. (3, 3T+0L)

215L ENGINEERING PHYSICS I LAB  Co-requisite: PHYS 215. (1, 0T+1S)

216 ENGINEERING PHYSICS II Heat, electricity, magnetism, problem solving, and demonstrations. Prerequisites: MATH 162 and 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).

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 APPRENTENCE 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 109 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 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)

240 Alcohol & Substance Abuse Evaluation and Assessment

241 Alcohol & Substance Abuse Treatment and Referral

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)

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).

377 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)

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 individu-
ally designed psychological research projects. Prerequisite: PSY 321. (3, 3T+0S)

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: ENG111, PSY105 (3, 3T+0S).

**PUEBLO INDIAN STUDIES (PIS)**

Note: All 200 level courses have a prerequisite of ENG 109N or adequate score on Course Placement Evaluation.

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 111. (Fall, Spring) (3, 3T+0S)

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)

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)

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)

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)

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)

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)

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)

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)

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)

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 (RDPDR)

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 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 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 materi-
als 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. (Fall only) (4, 0T+4L)

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. (Spring only) (4, 0T+4L)

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 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: Pro-
vides 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+1L)

136L **PRINCIPLES OF RADIOLOGIC TECHNIQUE II** Continuing from RAD 135L students will learn about quality assurance regarding the properties of radiographic film, film holders, intensifying screens, film processing and film artifacts. Students will also train on the mechanics of film processing, silver recovery and the darkroom environment. **Prerequisite:** RAD 135L. (Spring only) (3, 2T+1L)

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. **Co-requisite:** RAD 140L. (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; **Co-requisite:** RAD 141L. (Spring only) (5, 0T+5L)

149L **CLINICAL EXPERIENCE III** Students will continue to work on master competencies and begin contrast studies. **Prerequisite:** RAD 146L **Co-requisite:** RAD 142L. (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. **Prerequisite:** RAD 136L or permission of instructor. (Fall only) (3, 3T+0L)
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)

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. (Spring only) (2, 2T+0L)

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; **Co-requisite:** RAD 240L (Fall only) (8, 0T+8L)

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)

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)

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+0L)

READING IMPROVEMENT (RDG)

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)

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+0S)

RENEWABLE ENERGY (RE)

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 transportation; and 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+0S)
104  ARCHITECTURE 2030 AND THE 2010 IMPERATIVE  Because half of the planet’s greenhouse gasses 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+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 heating systems from collectors to heat exchangers to storage and to point-of-use. Safety in the plumbing environment is stressed. (2, 0T+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)*

**140L 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 mainte-
nance 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)

**SCIENCE, MATH, AND ENGINEERING TECHNOLOGY GENERAL (SMET)**

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)

**SOCILOGY (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)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
<th>Prerequisites</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>250</td>
<td>PSYCHOSOCIAL GERONTOLOGY</td>
<td>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.</td>
<td></td>
<td>3, 3T+0S</td>
</tr>
<tr>
<td>100</td>
<td>CONVERSATIONAL SPANISH</td>
<td>Limited grammar, vocabulary and pronunciation skills will be developed. May be repeated for credit.</td>
<td></td>
<td>1-3, 1-3T+0S</td>
</tr>
<tr>
<td>101</td>
<td>SPANISH I</td>
<td>Introductory course for those who are not native Spanish speakers and who have had little or no previous exposure to Spanish.</td>
<td>SPAN101</td>
<td>3, 3T+0S</td>
</tr>
<tr>
<td>102</td>
<td>SPANISH II</td>
<td>Continuation of SPAN 101.</td>
<td>SPAN101, SPAN102</td>
<td>4, 4T+0S</td>
</tr>
<tr>
<td>105</td>
<td>SPANISH IMMERSON I</td>
<td>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.</td>
<td>SPAN101 and SPAN102</td>
<td>3, 3T+0S</td>
</tr>
<tr>
<td>111</td>
<td>SPANISH AS A HERITAGE LANGUAGE I</td>
<td>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.</td>
<td>SPAN101 and SPAN102</td>
<td>3, 3T+0S</td>
</tr>
<tr>
<td>112</td>
<td>SPANISH AS A HERITAGE LANGUAGE II</td>
<td>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.</td>
<td>SPAN111</td>
<td>3, 3T+0S</td>
</tr>
<tr>
<td>201</td>
<td>INTERMEDIATE SPANISH I</td>
<td>Vocabulary building, oral and written expression; thorough review of grammar and usage.</td>
<td>SPAN101 and SPAN102</td>
<td>3, 3T+0S</td>
</tr>
<tr>
<td>202</td>
<td>INTERMEDIATE SPANISH II</td>
<td>A continuation of SPAN 201.</td>
<td>SPAN201</td>
<td>3, 3T+0S</td>
</tr>
<tr>
<td>205</td>
<td>SPANISH IMMERSON II</td>
<td>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.</td>
<td>SPAN105</td>
<td>3, 3T+0S</td>
</tr>
<tr>
<td>211</td>
<td>SPANISH AS A HERITAGE LANGUAGE III</td>
<td>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.</td>
<td>SPAN112</td>
<td>3, 3T+0S</td>
</tr>
<tr>
<td>212</td>
<td>SPANISH AS A HERITAGE LANGUAGE IV</td>
<td>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.</td>
<td>SPAN211</td>
<td>3, 3T+0S</td>
</tr>
<tr>
<td>221</td>
<td>CREATIVE WRITING IN SPANISH</td>
<td>You will study Spanish and bilingual creative literary expression, including poetry, fiction, and drama.</td>
<td>SPAN102, or permission of instructor</td>
<td>3, 3T+0S</td>
</tr>
<tr>
<td>230</td>
<td>SPANISH FOR HEALTH PROFESSIONS</td>
<td>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.</td>
<td></td>
<td>3, 3T+0S</td>
</tr>
</tbody>
</table>
290 READINGS IN HISPANIC LITERATURE You will study selected topics, genres, periods, and movements in Latin American or Peninsular literature; lectures, discussions, 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)
**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)

**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)

**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)

**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)

**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. (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. (1, 1T+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, costing, 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+OS)

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+OS)

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 Chicano/a and Chicano aesthetic, and write personal pieces expressing cultural heritage and identity. *Prerequisite:* ENG 109N. (3, 3T+OS)

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. (3, 2T+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)

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**WELDING (WELD)**

110  **INTRODUCTION TO WELDING** Shop and personal safety, different welding processes, different metals, and basis of metal identification and analysis. (3, 3T+OS)

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; construc-
tion 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)

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, 0T+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)

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)

130 BASIC WOODLAND 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 classroom hours and eight field experience hours are presented over six days for three credits. (3, 2.5T+.5S)

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+0S)

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)

### 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)

### 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 (ENGB). 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 ½ 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 and is a 2 credit-hour course. (2, 2T + 0S)

244 FIELD OBSERVER (S-247) This is a skill course designed to provide the student with training necessary to perform as a Field Observer (FOBS) and or a Fire Effects Monitor (FEMO). Topics include: roles and responsibilities of the FOBS and FEMO; how to take observations and document those observations; how to produce hand drawn and GPS field maps; and how to navigate using a compass and GPS. The navigation unit is in the field with a field exercise. Pre-course work is to read and complete exercises in “Basic Land Navigation (NFES #2865).” Prerequisite is successful completion of S-290 and Fire Fighter Type 1. The course combines 16 hours of classroom contact including 4 hours of pre-course work and 8 hours field exercise. It is a 1.5 credit-hour course scheduled over 3 days. (1.5, 1T+.5S)

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 interagency 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 hour 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 WFS 130 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 a 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

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James Biggs, PhD .................. Director, Environmental Sciences
Kalaiappan Chidambaram, PhD . Director, Program in Biology
Michael Frain, MA ................ Director, Radiologic Technology
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Matthew Martinez, PhD ........... Director, Northern Pueblos Institute
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Isabel Rodarte, MA ................. Library Director

**ADMINISTRATIVE DIRECTORS / COORDINATORS / MANAGERS**

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Julianna Barbee, MA ................. Small Business Development Center (SBDC)
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Jan Mattison ................. Commercial Kitchen Manager
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Crestina Manzanoares, AA ................. Acting Dual Credit Coordinator
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Melissa Velasquez, MA ................. Adult Basic Education

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Rachel Begay ................. Administrative Assistant to the Registrar
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Gerald Wheeler, BBA  .............. Assistant Registrar

**FULL-TIME FACULTY**

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Creighton University: BA, 1984  
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**FACULTY AND STAFF EMERITUS**

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President Emeritus, 2005-2009

Sigfredo Maestas, PhD  
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Priscilla C. Trujillo, MA  
Exec. Vice-President Emeritus, 1996-2003

Levi Valdez, MA  
Dean Emeritus of Continuing Education  
and Community Services, 1996-2001
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ACADEMIC CALENDAR 2011-2012

FALL 2011
Deadline for Degree & Certificate Students to Submit an Application for Fall 2011 ................................................................. Fri., Aug 12
PAYMENT DEADLINE: pay in full, 10% down plus a payment plan, or be disenrolled ................................................................. Mon., Aug 15
Deadline for Non-Degree Students to Submit an Application for Fall 2011 .................................................................................... Thur., Aug 18
REGISTRATION ........................................................................ Mon., Apr 11–Sun. Aug 21
Convocation ............................................................................ Mon., Aug 15
CLASSES BEGIN ................................................................. Mon., Aug 15
Late Registration (one day only) ................................................. Mon., Aug 22
Last Day to Change Schedule (Drops/Adds only) ...................... Sun., Aug 28
Last Day to Receive a Refund for Texts through the Bookstore .... Thurs., Sep 1
Last Day to Change from CR-AU/AU-CR .................................... Fri., Sep 2
Last Day to Drop from a Full-Term Course with a Refund ............ Sun., Sep 4
Holiday (Labor Day) .............................................................. Mon., Sep 5
Last Day to Drop from a Full-Term Course without Record ........ Fri., Sep 9
Deadline to Submit a Petition to Graduate for Fall 2011 ............ Fri., Sep 16
Mid-Term Exams .................................................................... Mon.–Fri., Oct 10–14
Fall Break (no classes) ............................................................... Mon.–Tues., Oct 17–18
Mid-Term Grades Due ............................................................. Wed., Oct 19
Faculty and Staff Development Day (no classes) ....................... Wed., Oct 19
Registration for Spring 2012 Begins .......................................... Mon., Oct 24
Last Day for Instructors to Initiate a Withdrawal ....................... Fri., Oct 28
Holiday (Veterans Day) No Classes .......................................... Fri., Nov 11
Last Day to Withdraw from a Full-Term Course ......................... Sun., Nov 13
Thanksgiving Break ................................................................. Thur.–Sun., Nov 24–27
Final Exams* .......................................................................... Sat.–Thur., Dec 10-15
*Exam make-up days in case of bad weather .......................... Fri.–Sat., Dec 16-17
Last Day of Term ..................................................................... Fri., Dec 16
Final Grades Due ..................................................................... Mon., Dec 19

SPRING 2012
Deadline for Degree & Certificate Students to Submit an Application for Spring 2012 ................................................................. Mon., Jan 2
PAYMENT DEADLINE: pay in full, 10% down plus a payment plan, or be disenrolled ................................................................. Fri., Jan 6
Deadline for Non-Degree Students to Submit an Application for Spring 2012 ........................................................................ Thur., Jan 12
Registration for Spring 2012 .................................................. Mon. Oct 24–Mon., Jan 16
Colloquium ........................................................................... Mon., Jan 9
Holiday (Martin Luther King Jr’s Birthday) ................................. Mon., Jan 16
CLASSES BEGIN ........................................................................ Tue., Jan 17
Late Registration (one day only) .............................................. Tues., Jan 17
Last Day to Change Schedule (Drops/Adds only) .................. Sun., Jan 22
Final disenrollment for failure to make adequate financial commitment ............................... Fri., Jan 6
Last Day to Change from CR-AU/AU-CR ............................... Sun., Jan 29
Last Day to Receive a Refund for Text through the Bookstore .... Mon., Jan 30
Last Day to Drop a Full-Term Course without Record. ........ Fri., Feb 3
Deadline to Submit a Petition to Graduate for Spring 2011 ........ Fri., Feb 10
Mid-Term Exams ................................................................. Mon.–Fri., Mar 5-9
Mid-Term Grades Due ............................................................ Tues., Mar 13
Spring Break ........................................................................ Mon.–Sun., Mar 12-18
Last Day for Instructors to Initiate a Withdrawal...................... Fri., Mar 23
Holiday (Good Friday) ............................................................. Fri., Apr 6
Last Day to Withdraw from a Full-Term Course ...................... Sun., Apr 8
Registration for Summer and Fall 2012 Begins ......................... Mon., Apr 9
Final Exams* .......................................................................... Sat.–Thur., May 5-10
Commencement Rehearsal ..................................................... Thur., May 10
Last Day of Term .................................................................... Fri., May 11
*Exam make-up day in case of bad weather............................. Fri., May 11
Commencement Ceremony ..................................................... Sat., May 12
Final Grades Due ..................................................................... Mon., May 14

SUMMER 2012
Deadline for Degree & Certificate Students to Submit an Application for Summer 2012 ......................................................... Fri., May 11
PAYMENT DEADLINE: pay in full, 10% down plus payment plan, or be disenrolled ................................................................. Fri., May 25
Deadline for Non-Degree Students to Submit an Application for Summer 2012 ................................................................. Thur., May 31
REGISTRATION ....................................................................... Mon., Apr 9–Sun., Jun 3
CLASSES BEGIN .................................................................... Mon., Jun 4
Last Day to Change Schedule (Drops/Adds only) ..................... Wed., Jun 6
Last Day to Change From CR-AU/AU-CR ............................... Sun., Jun 10
Last Day to Drop a Full-Term Course with 100% Refund ......... Sun., Jun 10
Last Day to Receive a Refund for Texts through the Bookstore ... Mon., Jun 11
Deadline to Submit a Petition to Graduate for Summer 2012 .......... Fri., Jun 15
Last Day to drop a Full-Term Course with 50% Refund .......... Sun., Jun 17
Holiday (Independence Day) ..................................................... Wed. Jul 4
Last Day to Withdraw from a Full-Term Course ....................... Sun. Jul 15
Last Day of Term .................................................................... Fri., Jul 27
Final Grades Due ..................................................................... Mon., Jul 30
ACADEMIC CALENDAR 2012-2013

FALL 2012
Deadline for Degree & Certificate Students to Submit an Application
or Fall 2012 ......................................................... Fri., Aug 10
PAYMENT DEADLINE: pay in full, 10% down plus a payment plan,
or be disenrolled ........................................ Fri., Aug 10
Deadline for Non-Degree Students to Submit an Application
for Fall 2012 ................................................................ Thu., Aug 16
REGISTRATION ............................................... Mon., Apr 9–Sun., Aug 19
Convocation ............................................................. Mon., Aug 13
CLASSES BEGIN ............................................... Mon., Aug 20
Late Registration (one day only) ................................ Mon., Aug 20
Last Day to Change Schedule (Drops/Adds 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 .... Thu., Aug 30
Last Day to Drop from a Full-Term Course with a Refund ........ Fri., Aug 31
Holiday (Labor Day) ............................................. Mon., Sep 3
Last Day to Drop from a Full-Term Course without Record .... Fri., Sep 7
Deadline to Submit a Petition to Graduate for Fall 2012 ........ Fri., Sep 14
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
Thanksgiving Break ........................................... Thur.–Sun., Nov 22–25
Final Exams* ....................................................... Sat.–Thu., Dec 8–13
*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
PAYMENT DEADLINE: pay in full, 10% down plus a payment plan,
or be disenrolled ........................................ Fri., Jan 4
Deadline for Non-Degree Students to Submit an Application
for Spring 2013 .................................................. Thur., Jan 10
REGISTRATION FOR SPRING 2013 ......................... Mon., Oct 22–Mon., Jan 14
Convocation ....................................................... Mon., Jan 7
Classes Begin: Mon., Jan 14
Late Registration (one day only): Mon., Jan 14
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 Texts through the Bookstore: Mon., Jan 28
Last Day to Drop a Full-Term Course without Record: Fri., Feb 1
Deadline to Submit a Petition to Graduate for Spring 2013: Fri., Feb 8
Mid-Term Week: Mon.–Fri., Mar 4-8
Mid-Term Grades Due: Tues., Mar 12
Spring Break: Mon.–Sun., Mar 11–17
Late Day for Instructors to Initiate a Withdrawal: Fri., Mar 22
Holiday (Good Friday): Fri., Mar 29
Last Day to Withdraw from a Full-Term Course: Fri., Apr 5
Registration for Summer and Fall 2013 Begins: Mon., Apr 8
Final Exams*: Sat.–Thur., May 4-9
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 for Degree & Certificate Students to Submit an Application for Summer 2013: Fri., May 10
Payment Deadline: pay in full, 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., Jun 2
Classes Begin: Mon., Jun 3
Last Day to Change Schedule (Drops/Adds only): Wed., Jun 5
Last Day to Change From CR-AU/AU-CR: Fri., Jun 7
Last Day to Drop a Full-Term Course with 100% Refund: Fri., Jun 7
Last Day to Receive a Refund for Texts through the Bookstore: Mon., Jun 10
Deadline to Submit a Petition to Graduate for Summer 2013: Fri., Jun 14
Last Day to drop a Full-Term Course with 50% Refund: Fri., Jun 14
Holiday (Independence Day): Thur., Jul 4
Last Day to Withdraw from a Full-Term Course: Sun., Jul 14
Last Day of Term: Fri., Jul 26
Final Grades Due: Mon., Jul 29